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Chapter 1: Introduction

1.1. Introduction

IP Switch is designed to automatically power-cycle either one or both of its outlets when either;

a) Internet connectivity is lost (resets Router/Modem to restart it), or
b) the network device being monitored is no longer responding in LAN.

It can also be used to:

a) remotely control outlets via instant messaging tool like Google Talk/ Hangouts, or a Web User Interface.
b) perform scheduled power On / Off / Reset
c) manually control outlets by disabling the UIS (Uninterruptable Internet System) function

IP Switch is useful where the Internet connection and accessibility to a remote site is critical. It can be setup so that when the remote Mobile Broadband / Cable / Satellite / DSL / T1, etc. connection drops or if the remote router freezes-up, it will auto reset the router to re-gain connectivity. IP Switch is also useful for:

1. Saving home users the trouble of constantly having to power-cycle their router to re-gain Internet connectivity.
2. Resetting unresponsive device (for instance IP camera or NAS servers) which otherwise will be inaccessible from remote.
3. IT Professionals who need to automatically or remotely reset devices
4. Preventing your connection from timing out or going dormant
5. Having devices on an automatic power schedule

Generalized description of network connection:

Hardware Specifications:

1. Built-in Web Server with 32-Bit RISC CPU.
2. 10/100Mbps Fast Ethernet Network Access.
3. Support IE or Java-Enabled Web Browser.
5. Operating Temperature: 0°C ~ 60°C; Operating Humidity: 10% ~ 90%
6. For indoor use only.

1.2. **Hardware Specification**

<table>
<thead>
<tr>
<th>Model No:</th>
<th>UIS-322</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket type</td>
<td>2x of either; a) Universal socket (Type X) b) USA (Type B, NEMA 5-15R) AUST / China (Type I, AS / NZS3112, CCC)</td>
</tr>
<tr>
<td>Certifications</td>
<td>CE, FCC (tested to be compliant with FCC 47 CFR Part 2 and Part 15 Class B equipment regulations)</td>
</tr>
<tr>
<td>Electrical Rating</td>
<td>Input: 125<del>250V</del>50/60Hz Output: 10A (for 2 sockets) &amp; DC5V, 500mA (for USB port)</td>
</tr>
<tr>
<td>Breaker</td>
<td>10A (Thermal fuse)</td>
</tr>
<tr>
<td>Available Sockets</td>
<td>2x fixed</td>
</tr>
<tr>
<td>Internet Control-able</td>
<td>2x fixed socket</td>
</tr>
<tr>
<td>Power ON / OFF switch</td>
<td>Individual outlet power ON / OFF LED button (Press &amp; hold 2 seconds)</td>
</tr>
<tr>
<td>Power Indicator</td>
<td>Orange LED</td>
</tr>
<tr>
<td>Reset to Factory Default</td>
<td>Reset button located to the right of Ethernet port</td>
</tr>
<tr>
<td>Internet Indicator</td>
<td>Green LED</td>
</tr>
<tr>
<td>Web Server CPU</td>
<td>32-Bit RISC CPU</td>
</tr>
<tr>
<td>Supported browser</td>
<td>IE and Java</td>
</tr>
<tr>
<td>Supported Network Protocols</td>
<td>HTTP, TCP/IP, UDP, SMTP, Dynamic DNS, DNS Client, SNTP, BOOTP, DHCP.</td>
</tr>
<tr>
<td>Network Access</td>
<td>10/100 Base-T, RJ45 (Cat. 5)</td>
</tr>
<tr>
<td>Operating Environment</td>
<td>0°C to 60°C at 10% to 90% relative humidity. For indoor use only.</td>
</tr>
<tr>
<td>Package</td>
<td>White Box</td>
</tr>
</tbody>
</table>
1.3. Network Diagram

The following Network diagrams applies to all IP Switch models.

Fig.1 IP Switch setup to perform auto reset of router and modem

Fig.2 IP Switch setup to keep Internet device alive.
1.4. **LED Indicators Explained**

<table>
<thead>
<tr>
<th>LED</th>
<th>LED status</th>
<th>Condition description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet</td>
<td>Solid Green</td>
<td>Internet connection available and UIS (Uninterruptable Internet System) mode has been activated.</td>
</tr>
<tr>
<td>Internet</td>
<td>Blinking Green</td>
<td>There is internet connection. UIS mode button has not been activated. With UIS enabled however, this means that at least one of the target sites is not responsive (regardless of being assigned or not)</td>
</tr>
<tr>
<td>Internet</td>
<td>OFF</td>
<td>There is no internet connection.</td>
</tr>
<tr>
<td>Outlet</td>
<td>Solid Orange</td>
<td>Outlet is powered ON</td>
</tr>
<tr>
<td>Outlet</td>
<td>OFF</td>
<td>Outlet is powered OFF</td>
</tr>
</tbody>
</table>

**Fig.4 LED Indicator**

<table>
<thead>
<tr>
<th>Light color</th>
<th>Condition description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>When On: Internet speed is at 100M</td>
</tr>
<tr>
<td></td>
<td>When flashing: Data transmitting / receiving</td>
</tr>
<tr>
<td>Yellow</td>
<td>On: Internet correspond speed is 10M</td>
</tr>
<tr>
<td></td>
<td>Flash: Data transmitting / receiving</td>
</tr>
</tbody>
</table>

**Fig.5 LAN LED Indicators**
Chapter 2: Hardware Setup

IP Switch hardware installation procedure:

**Step 1:**
Connect the power cord to device and wall outlet. The two orange LED will light up, indicating that the individual Outlet is ON.

Press the Orange LED for 2 seconds to turn the Outlet On / Off.

**Step 2:**
Connect the power plug to IP Switch outlet.

*Note:*
In order for IP Switch to maintain continuous Internet connection or reset your xDSL modem / Router, the router power input must be connected here.
**Step 3:**
Connect LAN cable from your router.

**Step 4:**
Make sure the Internet LED light is **blinking** to show that the internet connection is ready.

Press and hold the “UIS On/Off” button (about 2 seconds) to activate internet protection, which will allow the switch to auto reset upon loss of connection to the Target sites (i.e web site addresses or local IP addresses). This completes the basic setup.

---

**Chapter 3: Software & Web Setup (For Advanced User)**

### 3.1. Introduction

IP Switch is designed to work without having to install any software (see hardware setup above). However, for the advanced user, the unit can be customized and configured for remote access. This gives the user further control over the power ports.

There are two ways to remotely control the outlets (access from WAN);

a. Using DDNS and Port forwarding, see Section 3.3 or;

b. Using Google Talk/ Hangouts instant messaging tool, see Section 3.4.

*Note:* For models UIS-311 and UIS-315, only Outlets 1 and 2 can be remotely controlled. The third outlet is fixed for local use only.

### 3.2. How to Locate & Access IP Switch in LAN

IP Switch comes with a built-in Web User Interface (Web UI) that allows for more advanced control over the unit. There are two ways of accessing the Web UI in LAN (i.e. when both IP Switch and PC is connected to the same router).

1. Utility program.
2. Use a fixed IP (when there’s no DHCP server).

*Note*—You can also use any LAN program to locate the WebUI URL for example
Windows: Wireshark or Angry IP Scanner

3.2.1 Locate IP Switch in LAN using Utility program.

Step 1:
Download the Utility program from http://3gstore.com/ipswitchupdates and install.
Once installed Utility will locate and list the IP Switch units.

Note:
- Utility can only discover IP Switch units that are located within the same LAN or network.
- Utility will show LAN IP if units are connected to a Router. Else, user will have to manually assign an IP address.

Step 2:
Click “Launch Web User Interface” to run Internet Explorer (or your default browser) and access the IP address of the unit.

A password dialog box will appear.

By default; Username/ password is: admin/ admin. Press “OK” to proceed.

Step 3:
You will be logged into the IP Switch.

3.2.2 Locate IP Switch in LAN using fixed IP.

By default, the IP Switch should obtain an IP address automatically from your router using DHCP. If for some reason it does not, press and hold the UIS button for 10 seconds and it will revert to a fixed LAN IP of 192.168.0.100.

To access IP Switch Web interface in this mode:

Step 1:
Connect the LAN cable from IP Switch to your PC’s Ethernet port
Step 2:
Assign a fixed IP within the same subnet to your PC. **Example**: IP address - 192.168.0.20; Subnet Mask - 255.255.255.0; Gateway: 192.168.0.1

Step 3:
On your PC, launch a web browser and enter the IP: 192.168.0.100 - **Login username/ password: admin/ admin**. You can now change this fixed IP address to one that you prefer by going to **Configuration Settings -> Network**.
3.3. How to Access IP Switch from WAN – using DDNS

The IP Switch Web User Interface (Web UI) can be accessed remotely from Wide Area Network (WAN). To do so, you must have a public dynamic IP address from your ISP (Internet Service Provider) - if you’re unsure about this, please contact your ISP. Once you’ve confirmed that, proceed as follows;

i. Setup port forwarding at your router.
   a. Log into your router setup / configuration page.
   b. Most routers will have these settings under the Firewall / Port Forwarding / Virtual server section. You will need to open (allow): WAN Port 80; Type/Protocol: TCP. (NOTE: You may need to forward port 80 to a different port if you have other devices on the network using that port)

   and,

ii. Setup a Domain Name for your Dynamic WAN IP. Use 3rd Party DDNS providers. To do so;
   a. The following 3rd party DDNS providers below are supported;
      • 3322.org
      • DynDNS (Dynamic)
      • DynDNS (Custom)
      • myDDNS.com
      • No-IP
   b. Create a new user account and password.
   c. Register a Domain Name for your current Dynamic WAN IP.
   d. Log into your outlet via its local IP Address and navigate to → Configuration Settings → Network → Dynamic DNS. Select the service provider; enter the registered domain name, user account, and password. Click Apply.

The IP Switch is now accessible remotely using the newly registered Domain Name.

For a description of Network → Dynamic DNS functions see section 4.2.3.

3.4. How to Access IP Switch from WAN - using Google Talk/ Hangouts

IP Switch supports Google Talk/ Hangouts, an instant messaging tool. Once setup, user can get notifications and issue commands to check the status, as well as turn on/off power or power-cycle certain ports using Google Talk/ Hangouts.

Before starting, you will need firmware version MNT.NBU.5326, 2.40.MNS.NBU.6311, or newer, as well as 2 Gmail accounts - 1 designated as the IP Switch & 1 as the Control account.

3.4.1. How to Setup Google Talk/ Hangouts for the IP Switch

Step 1:
From the Utility application, select
'Launch Web User Interface' - when prompted, log in with the default user name & password:

User Name: admin
Password: admin

Step 2:
Below the ‘Configuration Settings’ button on the left, select ‘Google Talk’ or ‘Hangouts’ (depending on your firmware version)

a. Towards the top left corner you’ll notice ‘Status’ - *by default this is set to ‘Offline’* - You will need to change this to ‘Online’
b. For the ‘Login ID’ enter the Gmail Account associated for the Switch *(Example: IPswitch@gmail.com)*.
c. Now, enter the Password for the same Gmail account in the ‘Password Field’
d. Under the ‘Add Contact Accounts’ enter your control Gmail account that will be used to control the switch *(Example: control@gmail.com)*
e. Click ‘Apply’

Step 3:
Allow a few moments for IP Switch to connect and Sign in. The connection status will be shown on the heading.

Step 4:
Once connected, you’ll want to log into your control Gmail account. The users listed in your Contact List will receive a notification to add the IP Switch as a ‘contact’.

Once added, you can control the IP Switch by chatting with it.
3.4.2. How to Control IP Switch using Google Talk/ Hangouts

After setting up and getting connected as above. Bring up the IP Switch chat window by inviting it to chat.

*Typing in anything other than the Keywords will invoke IP Switch to respond with “Please type HELP to list available commands.”

Available commands are (non case sensitive):

**SET [ON/OFF/RESET] [0/1/2]** (where 0=both outlets, 1/2=Outlets)

**UIS [ON/OFF]**

**GET [IP/STATUS]**

**SET ON / OFF / RESET** command will return a “Done!” once IP Switch has completed the action.

**GET IP** command will return the WAN IP and the unit’s LAN IP address.

*If port forwarding is set, but not the domain name, user can still use WAN IP to access the IP Switch Web User Interface from internet.*
GET STATUS command will return the following information.

For [Outlet Status] the Outlet1 and Outlet2 name can be assigned. This is done via the local IP address of the IP Switch → Configuration → Outlet Setup.

*Allow time for the system to respond.

*NOTE: There is also a mobile application called “Hangouts” that can be used in this same manner. It is available for Android and iOS.

3.5. How to Upgrade/Re-Flash Firmware

When issues occur with your IP switch, it is best to upgrade firmware (if available) or re-flash the current version of firmware. This can be done with the Utility application OR via the local web interface page. It can be accomplished with a computer that is connected to the same network as the IP switch or, in certain cases when the IP Switch is unreachable, you may connect it directly to your computer via the Ethernet cable.

Upgrade Using Utility

Step 1: Launch the ‘Utility’ Windows Application and let it detect IP switch.

Step 2: Click on the ‘Firmware Upgrade’ button.

Note: Before performing the upgrade, it is recommended that you save your settings, though the upgrade should NOT reset your settings. See section 4.4.1 for instructions on the Save / Restore settings.
Step 3: In the dialog box that opens, select the ‘...’ button to the right of ‘File Name.’

Step 4: Locate the firmware file and open it.

Step 5: The file name should now appear in the appropriate field. Now, select the ‘Download’ button

Upgrade Using Local Web Interface

Step 1: Log into the web user interface of your IP Switch

Step 2: Navigate to the Save/Upgrade section (on the left)

Step 3: Under the 'Upgrade Firmware' section, click on the 'Browse' / 'Choose File' button beside 'Location'

Step 4: A window will open to view your computer files. The firmware typically saves to your downloads folder. Select the .bin file named and click Open

Step 5: You'll now see the file appear next to 'Location' -> Click Apply to begin the upgrade

Note: The firmware process takes about 2-5 minutes.
Chapter 4: IP Switch Web User Interface

4.1. Information
The Information tab contains the following subsections:

4.1.1 Current Status
This section displays the current status of the outlets.

![Current Status page](image)

**Fig.7 Current Status page**

i. **Connection Status**
   Assign: This shows the outlets that are assigned to the target sites
   Site Label: A name for the target site
   Target Site: This is the default target site as listed under Configuration page
   IP Address: The IP address of the Target Site
   Response Time: based on UDP / TCP protocol sets in Configuration page
   Timeout: Number of timeouts as a percentage of total tries since reset.

   **Note:** This page will auto refresh every 5 seconds

ii. **Status and Control**
   This section shows the current status of the UIS Function and Outlet. User can click to control the Outlets or UIS function from here.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Image" /></td>
<td>The UIS Function is Off. IP Switch will not perform auto outlet reset when connection loss is detected.</td>
</tr>
</tbody>
</table>
The **UIS Function** is On. IP Switch will perform auto outlet reset when connection loss is detected.

The Outlet is Off

The Outlet is On

The Outlet is On, but **UIS Function** is Off. The outlet will not auto reset.

### 4.2 Configuration

The following option allows the user to configure the IP Switch.

#### 4.2.1 Configuration

#### 4.2.2 Schedule

#### 4.2.3 Network

#### 4.2.4 E-mail

#### 4.2.5 Account

#### 4.2.6 Google Talk/ Hangouts

#### 4.2.7 System Time

#### 4.2.8 Language

#### 4.2.9 SMS

#### 4.2.1 Configuration

Use this section to configure how IP Switch checks websites. Advance users can use this to customize IP Switch to check network devices.
i. **Website / IP Address**

<table>
<thead>
<tr>
<th>Assign</th>
<th>Site Label</th>
<th>Website / IP Address</th>
<th>Response Time</th>
<th>Protocol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both</td>
<td>Yahoo.com</td>
<td><a href="http://www.yahoo.com">www.yahoo.com</a></td>
<td>33 ms</td>
<td>UDP TCP</td>
</tr>
<tr>
<td>Both</td>
<td>Google.com</td>
<td><a href="http://www.google.com">www.google.com</a></td>
<td>10 ms</td>
<td>UDP TCP</td>
</tr>
<tr>
<td>Both</td>
<td>Bing.com</td>
<td><a href="http://www.bing.com">www.bing.com</a></td>
<td>10 ms</td>
<td>UDP TCP</td>
</tr>
<tr>
<td>Both</td>
<td>Ask.com</td>
<td><a href="http://www.ask.com">www.ask.com</a></td>
<td>10 ms</td>
<td>UDP TCP</td>
</tr>
<tr>
<td>None</td>
<td>Router</td>
<td>10.0.0.1</td>
<td>2 ms</td>
<td>UDP TCP</td>
</tr>
</tbody>
</table>

**Assign:**
Assign either one or both outlets to the website / IP address. Outlet assigned to a group of websites will auto reset, when all sites within that group timeout.

**Note:**
Assignment cannot be for a combination of both and single outlets.

**Site Label:**
Give the IP address a short and easy to remember nickname. Max 16 characters.

**Website / IP Address:**
Enter a reliable website / IP address to ping.

**Response Time:**
The time it takes for a website to respond.

**Protocol:**
Select a suitable ping method for the website. Either a ping (UDP protocol) or a web request (TCP protocol).

**Note:**
The target site can be a Domain Name, IP address or even LAN IP address. Example: the Router's IP or local device on the router such as an IP Camera.

---

ii. **Outlet Setup**

**Outlet 1/2 Name:**
Give each outlet a name to easily identify the connected device (eg. router, modem, etc).

**Power-on Delay for Outlet 1:**
Apply a delay (Power Off > Delay > Power On) to outlet #1's power-cycle sequence. Default is 3 seconds.
Power-on Delay for Outlet 2:
Apply delay to Outlet 2, which takes place after Outlet 1 is reset. In default configuration, Outlet 1 resets within 3 seconds and 13 seconds later, Outlet 2 resets. Default 10 seconds or set 0 to disable.

NOTE: Power Reset feature applies not only to the Reset here (Off > Delay > On), but also to scheduled or manual resets. An off outlet will not power cycle upon an auto reset.

iii. Time-out Settings

<table>
<thead>
<tr>
<th>Timeout Settings</th>
<th>Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timeout for Each Website / IP Address</td>
<td>5 seconds</td>
</tr>
<tr>
<td>Number of Continuous Timeout</td>
<td>4 times</td>
</tr>
<tr>
<td>Set Ping Frequency</td>
<td>10 seconds(s)</td>
</tr>
<tr>
<td>Ping Delay After UIS Reset</td>
<td>5 minutes(s)</td>
</tr>
<tr>
<td>Number of UIS Resets</td>
<td>Limited 1 times</td>
</tr>
<tr>
<td>Force UIS Reset after initial power-on</td>
<td>Enable</td>
</tr>
</tbody>
</table>

Timeout for Each Website / IP Address
Assigned websites must respond within this time else, it timeout. Set a larger value to allow for occasional internet lags. Default is 5 seconds.

**Note:**
A larger time-out will allow for instances of delay or lag from target sites.

Number of Continuous Timeout
Number of continuous failed responses from assigned websites before the UIS reset is triggered. Default is 4 times.

Set Ping Frequency:
Administrator can set the website ping or connect interval (i.e. how frequently the Switch pings the target sites). Default is 10 seconds.

Ping Delay After UIS Reset:
Set how long the Switch waits after a UIS reset BEFORE it starts checking for a connection again.

Number of UIS Resets:
Set the number of UIS reset attempts when Internet connection is lost (e.g. If set to 5 times - if connection is not restored after the 5th attempt, Switch will wait in idle state until connection comes back).

Force UIS Reset after Initial power-on:
Force the outlets to reset if all target sites are unreachable after power-on (e.g. Router boot failure after a power outage/ black-out. Resets only outlets that were ON (before power off). UIS function MUST be enabled for this to work).
4.2.2 Schedule
This option allows the user to schedule the power on / off / reset for each of the two outlets.

i. New Schedule Event
   Item
   Select to schedule an event for either Outlet 1 or Outlet 2, Both, or UIS Reset.
   Action
   Select action to apply to above Outlets. To turn ON, OFF or RESET.
   Date (yyyy/mm/dd)
   Select the event frequency for the above outlet;
   a. Once (the current date is automatically entered) or;
   b. Reoccurring on a particular day, or a daily event.
   Time (hh:mm)
   Enter the time in 24hr format.

   Note:
   A total of 20 schedules can be assigned. The scheduled events can be edited, disabled or deleted.
4.2.3 Network
This option allows the user to configure the IP address, port number and DDNS functions.

![Network Configuration](image)

i. **IP Address**

![IP Address Configuration](image)

**Hostname**
By default the hostname *(LAN Domain Name)* is set to **Outlet**. This should allow the unit to be located on your router's client list when determining the LAN IP address.

**Note:** If you have multiple IP Switch units, you should assign different Hostnames to each unit.

**IP Address**
This determines/dispalyes the IP Switch's IP address. By default, the LAN IP address assignment method is set to DHCP (IP address assigned by router).

**Tip:** We suggest changing this to a Fixed/Static IP, for ease of management. You may do this by selecting *Manually* rather than *Using DHCP.* OR, you can leave as DHCP and simply set a DHCP reservation on your router so that the IP address does not change.
Subnet Mask
Displays IP Switch Subnet Mask.

Default Gateway
This sets the IP Switch Gateway IP address (this is the IP address of the router the IP Switch is connected to).

Obtain an IP address
This allows the user to either manually set or use DHCP (default) function to obtain the IP address from the router. Click Apply to save settings.

DNS Server IP

<table>
<thead>
<tr>
<th>DNS Server IP</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary DNS Server IP</td>
<td>208.67.222.222</td>
</tr>
<tr>
<td>Secondary DNS Server IP</td>
<td>208.67.220.220</td>
</tr>
<tr>
<td>Obtain DNS Server</td>
<td>Manually</td>
</tr>
</tbody>
</table>

Primary DNS Server IP
The default IP Switch Primary DNS Server IP is 208.67.222.222. User can set their preferred DNS server / one that is assigned by ISP.

Secondary DNS Server IP
Use this to set IP Switch Secondary DNS Server IP address. IP Switch will use the Secondary DNS Server IP address if the Primary DNS Server IP address is not working. Secondary DNS Server default IP is 208.67.220.220.

Obtain DNS Server
This allows the user to either manually set (default) or use AUTO function to obtain the DNS servers from the router. Click Apply to save settings.

Advanced Options

<table>
<thead>
<tr>
<th>Advanced Options [help]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HTTP Port Number</td>
<td>80</td>
</tr>
<tr>
<td>STUN Server</td>
<td>stun.l.google.com:19302</td>
</tr>
</tbody>
</table>

HTTP Port Number
This determines IP Switch user interface port. By default the LAN port number is 80. If the port is changed, you will also need to change the manner in which
you access the switch via a web browser – i.e. If the port is changed to 82, then to access IP Switch user interface, the user must type: http://x.x.x.x:82 (where x.x.x.x is the IP Switch’s LAN IP address as shown in Utility).

Note: Remote Power IP Switch will reboot when these settings are changed.

STUN Server
STUN is a standardized network protocol to allow the device to discover its public IP address when it is located behind a NAT. Disabling STUN will do the following:

a. Prevent Google Talk “GET IP” command from returning the **WAN IP**
b. Email notification cannot show the current **WAN IP**
c. Dynamic DNS server cannot acquire **WAN IP**

*Default is stun.l.google.com:19302*

iv. Dynamic DNS

*Dynamic DNS* (“DDNS”) is a third party service – some providers offer free service, others require a fee. It allows the user to alias a dynamic WAN IP address to a WAN hostname. So no matter how many times your ISP changes the IP address, you will be able to locate your unit over WAN using your DDNS hostname.

**DDNS providers include:**

- 3322.org
- dhs.org
- DynDNS (Dynamic)
- DynDNS (Custom)
- myDDNS.com
- Zive.org

In general, to register a Domain Name with one of these sites;

a. Go to the DDNS provider website listed above.
b. Register a new user account and password with the DDNS provider.
c. Choose a Domain Name to point to your current Dynamic IP
d. Enter information obtained in (b) and (c) into the corresponding DDNS fields in IP Switch.

**Domain Name**
This is the Domain Name you have created from the above selected DDNS provider.
Name
This is the Login / Account name that you have created with the selected DDNS provider.

Password
Enter the Password you have assigned to your DDNS Account.

4.2.4 E-mail
This function will send event notifications to email accounts listed in the ‘E-mail Address Book’. Events are also logged in “Event Log” section.

i. E-mail Settings

E-mail Notification
When ‘Enabled’ and settings are applied, user can receive notifications from the Switch. 2 additional sections will appear that also must be configured – ‘Test E-mail’ and ‘E-mail Address Book’

E-mail Server
Only SMTP servers are supported. IMAP & HTTP mail servers are not supported. Example: smtp.gmail.com

E-mail Port
Default is port 25. User can specify a different port if necessary. *Port 465 and 587 is frequently used.
**Sender's E-mail Address**
Enter the full E-mail address assigned by your e-mail server.

**User Name / Password**
Enter your full E-mail Address and the password associated with it.

*Note:* If you are using Google 2 Step Verification see Page 38 for additional configuration steps

**ii. Test E-mail**

*Send a test E-mail*

Enter a valid e-mail address to send the test email to. Example of email received:

From: ___@test.com
Date: Wed, Feb 22, 2012 at 5:15 PM
Subject: This is a test email
To: ___@test.com

If you received this test mail, it means that your mail settings are correct.

**iii. E-mail Address Book**

*E-mail Address Book*

List the users who shall receive an e-mail notification, as they appear in the Event Log section.

**4.2.5 Account**
This webpage allows you to set an administrator password. You may also set up a ‘viewer’ account. A viewer account may view the settings, but cannot make changes. A maximum of 5 user accounts can be configured.
i. **Account Settings**

<table>
<thead>
<tr>
<th>Permission</th>
<th>Login</th>
<th>Password</th>
<th>Confirm Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>admin</td>
<td>*****</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Permission**

Administrator account is set up by default. Viewer account can be configured if users want to allow others to view the settings *without* being able to make any changes.

**Login**

The administrator can set a name consisting up to 32 case sensitive characters. By default the Administrator Login and Password are both admin / admin.

**Password / Confirm Password**

Assign a password to the account. The administrator can set up to a 32 case sensitive password. Enter it a 2nd time to confirm password.

### 4.2.6 Hangouts (Previously called Google Talk)

Setup IP Switch to be controllable via Google Hangouts.

![Hangouts Settings page](image)

**Fig.8 Hangouts Settings page**

i. **Hangouts**

![Hangouts - Signed In / Online](image)
Status
This determines the status of the IP Switch’s Gmail account. Select either ‘Offline’ or ‘Online’ - See the tab labeled “Hangouts” above.

<table>
<thead>
<tr>
<th>Status</th>
<th>Login ID</th>
<th>Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online</td>
<td><a href="mailto:IPSwitch@gmail.com">IPSwitch@gmail.com</a></td>
<td>*********</td>
</tr>
</tbody>
</table>

Show a Personal Message for Account
Enter a message here. This message will be visible to anyone that is in the IP Switch’s Hangouts contact list.

Add Contact Accounts (to access / control the above account)
The administrator can assign up to 8 Gmail users who can receive notification, control AND receive IP Switch feedback from their Gmail account. Once assigned, the respective user must then ‘add/invite’ the IP Switch to their Contact list - this chat invitation is generated once the Administrator clicks ‘Send Test Message’. Failing to accept the chat invitation will result in the user not being able to communicate with the IP Switch. Once the contact is added, just type a random character and IP Switch will respond with instructions. Refer to section 3.4.2 above on how to use Hangouts.

4.2.7 System Time
Use to set the time zone, apply daylight savings start/end, and configure the system for automatic restarts.

Fig.9 System Time Settings page
i. **System Time**

**System Time (yyyy/mm/dd hh:mm:ss)**
This section is to manually set the IP Switch System Time. The format is pre-determined to: yyyy/mm/dd hh:mm:ss (in 24hr format). Click **Apply** to save the changes.

**Time Between Automatic Updates**
The user can set an interval for time synchronization. Select from either; none, 1, 3, 12 hours or 1, 10 & 30 days. **Default is 1 Hour.**

**Time Server**
Choose the nearest **Time Server** to your location. The user can choose from the list of a maximum of 30 Time Servers. To add a new **Time Server**, click **Edit**, delete an existing **Time Servers** from the list, then, the **Add** dialog box will appear. Click **Back** to return to the System Time Settings webpage.

**Time Zone (Relative to GMT)**
Select the appropriate time zone. Click **Apply** to save changes.

ii. **Daylight Saving Time**

**Using Daylight Saving Time**
Disabled by default. Administrator can configure it to **AUTO** obtain Daylight Saving Time info OR **Manually** enter the DST begin and DST end dates.

iii. **Auto Restart System**

**Auto Restart System every XX minutes/ hours... (0 = Disabled)**
Set the IP Switch server to automatically restart after a pre-set interval. This will reset the server. The power supply to each individual outlet is not disrupted during the server restart process. Use this to guard against system freeze.

**Manually restart the system**
Click **Apply** to manually restart the system immediately.
4.2.8 Language
Use this section is to set the language interface.

<table>
<thead>
<tr>
<th>Language</th>
<th>Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>English</td>
</tr>
<tr>
<td>Spanish</td>
<td>Spanish</td>
</tr>
</tbody>
</table>

Note: Setting preferences will not work if you have disabled cookies in your browser.

i. Language
Choose the language for the Web UI and E-mails.

4.2.9 SMS
*This feature is NOT supported at this time.

4.3 Log Information

4.3.1 Event Log
This section will log events that occurred on the IP Switch and categorize them.

Event Log Type
Select which type of log to show:

a. All (both Status and Notifications are shown)

b. Status

Examples of Status logs:
- UIS On/Off, Outlet Manual On/Off, Outlet Auto On/Off, UIS 1/2 resets

c. Notification

Examples of Notification logs:
- Server address ‘xxx’ is unresolvable, Test email sent, Connection to Email server failed

Note: If the **System Time** is not set up correctly, the event log may display a generic ‘2001/01/01’ in the Date/Time area. Once the System Time is synchronized, it will update all the Event Log times.
4.4 Help

4.4.1 System Status
This webpage displays System Status Information.

i. System Information
This section shows general hardware information such as the Hardware and Firmware Version, the serial number, Uptime, System Time and when the system last reset.

ii. Network Status
This section shows all information relating to the Network environment.

Hostname
This is the default hostname. User can rename this by browsing to Configuration → Network page.

4.4.2 Save / Upgrade
The administrator can use this section to check firmware information, save/restore settings, and see manufacturer’s details.

Fig.11 About page
i. **Save / Restore Settings**
   **Settings**
   Click **Save** to save the configuration to your PC. The text file will have a default format of **SettingsYYYYMMDD.cfg**.

   **Restore**
   Use this function to restore a *.cfg configuration that has been saved earlier. Click **Browse**… and locate the file you saved. Click **Restore**.

   **Reset to factory default**
   This function will reset all settings to its default configuration.

ii. **Upgrade Firmware**
   **Firmware Version**
   Displays the current firmware version running on the Switch.

   **Location**
   This is where you would select a firmware file to upgrade/ flash to the Switch.
Chapter 5: Troubleshooting Tips

1. Assign a static IP (manual) address to the Power Switch rather than using DHCP.
   a. Like with most LAN connected, remote devices this is a more stable/reliable way of connecting the Switch to your network
   b. To configure this, we recommend using the Utility program:
      i. Open Utility and search for the Switch (click ‘refresh list’ if not appearing)
      ii. Once found, select the ‘Network Settings’ button. A window will open.
      iii. In the IP address tab select ‘Use the Following Static IP address.’ Enter an IP address within the same subnet to your PC. Example: If your router’s default LAN/gateway IP is 192.168.0.1, you can use an IP address of: 192.168.0.10 (or something outside the DHCP range) and subnet mask of 255.255.255.0. Gateway will then be 192.168.0.1
   iv. Click OK to apply.

2. Ensure the UIS function is enabled and Internet light is illuminated. Without UIS enabled, the Switch will not know to monitor the connection. You also need to make sure the Switch is receiving an Internet connection, or else it won’t be able to ping web addresses to monitor the connection.

3. Check your Configuration settings. Specifically, the ‘Timeout Settings’ & ‘Outlet Setup.’ For users who have a separate modem and router plugged into each port: Typically, you want the modem to power up completely and connect to the Internet prior to the router powering on. We normally recommend at least 1 minute in between these. SEE: ‘Ping Delay After UIS reset’ AND ‘Power-on delay for Outlet 1/ Outlet 2.’
   a. Also, to avoid too many timeouts due to a slow Internet connection, you may want to adjust Timeout Settings to a higher interval than default. In most cases, you’ll need to experiment with settings to see what works best.

4. Check your router for a setting such as: ‘Block ICMP Ping’ OR ‘Block WAN ICMP Ping’ (see example screenshot below). Most routers from ISPs have built in firewalls, meant to protect from malicious activity and outside intrusion, but these built in firewalls can also block devices from functioning properly when connected to the network. A common feature, “Block ICMP Ping”, is typically set to ‘Enable,’ meaning the router will block the response back to the IP Switch. This means the switch can never properly manage your Internet connection. Depending on your router, this feature can be found in different places, and take a variety of different names. 3Gstore doesn’t provide support for 3rd party routers, however you can contact the ISP or manufacturer for this setting. For most users, the IP Switch works just fine with no extra configuration required.
5. **Check the Fuse**: If your IP Switch is not powering ON, it’s possible the fuse may be bad. Follow the steps below to change out the fuse with the back up

   a. Remove the Power Cord and Ethernet Cable from your IP Switch before proceeding. Locate the Fuse Door just under where the power cord attaches.

   b. With a flat tipped screwdriver, carefully remove the fuse door by pulling away from the IP Switch.
c. With the Fuse Door removed, swap the main fuse with the backup.

(Left - Backup, Right - Main)

d. Return the Fuse Door to the IP Switch, making sure it sits flush with the surrounding surface. Reconnect the Power Cord and Ethernet Cable.

6. FOR TESTING: In order to simulate an outage [to make sure the Switch is resetting properly], unplug the Ethernet cable from the WAN port of your router. OR, if you have an all-in-one modem/router, unplug the cable that’s connecting your cable or DSL line to the modem/router. If you simply remove the LAN cable from the Switch itself, it will loose LAN connectivity and without that, the Switch has nothing to monitor and therefore will do nothing.
Appendix A: Router Configuration

The following section describes the initial configuration of the router and port forwarding for your router. If your router is not listed here, please refer to the manufacturer’s website for assistance with configuring your router to work with IP Switch.

Port Forwarding for IP Switch
IP Switch requires certain ports to be open on your router to allow other computers on the Internet to view it on your internal network. Normally, your router will have the less common ports disabled or blocked by the router’s built-in firewall. In order for IP Switch applications to work properly and not be blocked, the firewall settings need to be configured. In each instance there will be a trigger port and incoming port(s), where traffic on the trigger port tells the Firewall to open the incoming ports. IP Switch requires that TCP Port 80 (default settings) be opened to the Internet. TCP Port 80 is used for accessing the IP Switch homepage.

Change to other port if your Internet service Provider blocks port 80.

Below are some examples of setups, you should refer to your Router’s User manual or contact your router manufacturer for assistance in configuring the router.

D-Link (http://www.dlink.com)

DI-604/DI – 614+/DI-624

1. Log into your router using your router IP.

2. On the main page, click on Advanced at the top of the page.

3. On the left side of the page, click on Virtual Server. Note: Make sure DMZ host is disabled. If DMZ is enabled, it will disable all Virtual Server entries.

4. Enter the following information on the page:
   Enable/Disable: Enabled
   Name: IP Switch - Webpage
   Private IP: Type in the UIS LAN IP address, for example: 192.168.0.5
   Protocol Type: TCP
   Private Port: 80
   Public Port: 80
   Schedule: Always

5. Click Apply to save the settings. IP Switch should now be configured to work with your router and be accessible from the Internet.
1. Log into your router using your router IP.

2. On the main page, click on Advanced at the top of the page.

3. On the Virtual Server page, enter the following information:
   For ID#1:
   Service Port: 80
   Service IP: Type in the IP Switch IP address, for example: 192.168.0.5
   Enabled/Disabled: Enabled

4. Save your settings. IP Switch should now be configured to work with your router and be accessible from the Internet.

**Dell (http://www.dell.com)**

**TrueMobile 2300 Wireless Broadband Router**

1. Log into your router using your router IP.

2. On the main page, click on Advanced Settings at the top of the page.

3. Go to the Port Forwarding section and select Custom Port Forwarding Settings.

4. Check the Enable box.

5. Enter the desired name or description in the Service Name field such as IP Switch Web.

6. In the Incoming Ports field, specify port 80 in both boxes.

7. In the Destination IP Address field, enter IP Switch LAN IP address.

8. In the Destination MAC Address field, enter IP Switch MAC address. You can find the camera’s MAC address by either looking at the MAC address sticker on the bottom of the camera or by utilizing setup utility to display the MAC address.

**Microsoft (http://www.microsoft.com/hardware/broadbandnetworking)**
MN-100 – Wired Base Station
MN-500 – Wireless Base Station

1. Log into your router using your router IP.

2. Open the Bass Station Management Tool, and then click Security.

3. On the Security menu, click Port Forwarding, and then click Set up persistent port forwarding.

4. In the Enable checkbox, check in the checkbox.

5. In the Description box, type a description of the server field such as: IP Switch Web.

6. In the Inbound port boxes, type in: 80 – 80. (i.e. from Port 80 to Port 80)

7. In the Type box, select the protocol as TCP.

8. In the Private IP address box, type in the IP Address of IP Switch network. For example, type in: 192.168.0.5.

9. In the Private port boxes, these values are automatically filled in from Step 6 and should already show 80 – 80.

11. Click Apply to save the changes you have made. IP Switch should now be configured to work with your router and be accessible from the internet.

Appendix B: IP Address, Subnet and Gateway

This section discusses Gateways, IP Addresses and Subnet masking

Gateways
Gateway, also referred to as a router, is any computer with two or more network adapters connecting to different physical networks. Gateways allow for transmission of IP packets among networks on an Internet.

IP Addresses
Every device on an Internet must be assigned a unique IP (Internet Protocol) address. An IP address is a 32-bit value comprised of a network ID and a host ID. The network ID identifies the logical network to which a particular device belongs. The host ID identifies the particular device within the logical network. IP addresses
distinguish devices on an Internet from one another so that IP packets are properly transmitted.

IP addresses appear in dotted decimal (rather than in binary) notation. Dotted decimal notation divides the 32-bit value into four 8-bit groups, or octets, and separates each octet with a period. For example, 199.217.132.1 is an IP address in dotted decimal notation.

To accommodate networks of different sizes, the IP address has three divisions – Classes A for large, B for medium and C for small. The difference among the network classes is the number of octets reserved for the network ID and the number of octets reserved for the host ID.

<table>
<thead>
<tr>
<th>Class</th>
<th>Value of First Octet</th>
<th>Network ID</th>
<th>Host ID</th>
<th>Number of Hosts</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1-126</td>
<td>First octet</td>
<td>Last three octets</td>
<td>16,387,064</td>
</tr>
<tr>
<td>B</td>
<td>128-191</td>
<td>First two octets</td>
<td>Last two octets</td>
<td>64,516</td>
</tr>
<tr>
<td>C</td>
<td>192-223</td>
<td>First tree octets</td>
<td>Last octet</td>
<td>254</td>
</tr>
</tbody>
</table>

Any value between 0 and 255 is valid as a host ID octet except for those values the InterNIC reserves for other purposes:

<table>
<thead>
<tr>
<th>Value</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>0, 255</td>
<td>Subnet masking</td>
</tr>
<tr>
<td>127</td>
<td>Loopback testing and interprocess communication on local devices</td>
</tr>
<tr>
<td>224-254</td>
<td>IGMP multicast and other special protocols.</td>
</tr>
</tbody>
</table>

Subnetting and Subnet Masks

Subnetting divides a network address into sub-network addresses to accommodate more than one physical network on a logical network.

For example:

A Class B company has 100 LANs (Local Area Networks) with 100 to 200 nodes on each LAN. To classify the nodes by its LANs on one main network, this company segments the network address into 100 sub-network addresses. If the Class B network address is 150.1.x.x, the address can be segmented further from 150.1.1.x through 150.1.100.x.

A subnet mask is a 32-bit value that distinguishes the network ID from the host ID for different sub-networks on the same logical network. Like IP addresses, subnet masks consist of four octets in dotted decimal notation. You can use subnet masks to route and filter the transmission of IP packets among your sub-networks. The value “255” is assigned to octets that belong to the network ID, and the value “0” is assigned to octets that belong to the host ID.

For the example above, if you want all the devices on the sub-networks to receive each other’s IP packets, set the subnet mask to 255.255.0.0. If you want the devices on a single sub-network only to receive IP packets from other devices on its own sub-network, set the subnet mask to 255.255.255.0 for the devices on the sub-network.
### Subnet Mask

<table>
<thead>
<tr>
<th>Subnet Mask</th>
<th>Routing and Filtering</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0.0.0</td>
<td>IP packets are transmitted to all devices.</td>
</tr>
<tr>
<td>255.0.0.0</td>
<td>IP packets are only transmitted to devices that are IP that’s first octet matches the sender’s IP address’s first octet.</td>
</tr>
<tr>
<td>255.255.0.0</td>
<td>IP packets are only transmitted to devices that are IP that’s first two octets match the sender’s IP address’s first two octets.</td>
</tr>
<tr>
<td>255.255.255.0</td>
<td>IP packets are only transmitted to devices that are IP that’s first three octets match the sender’s IP address’s first three octets.</td>
</tr>
</tbody>
</table>

### Appendix C: Glossary

The Glossary section defines the terms used in this User Manual

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet</td>
<td>Local Area Network technology, originally developed by Xerox Corporation, can link up to 1,024 nodes in a bus network. Ethernet provides raw data transfer in a rate of 10 megabits/sec. with actual throughputs in 2 to 3 megabits/sec. using a baseband (single-channel) communication technique. Ethernet uses carrier sense multiple access collision detection (CSMA/CD) that prevents network failures when two devices attempt to access the network at the same time. LAN hardware manufacturers use Ethernet protocol; their products may not be compatible.</td>
</tr>
<tr>
<td>Gateway</td>
<td>A computer that attaches to a number of networks and routes packets between them. The packets can be different protocols at the higher levels.</td>
</tr>
<tr>
<td>IP</td>
<td>Internet Protocol – The TCP/IP standard protocol defines the IP datagram as the unit of information passed across a network.</td>
</tr>
<tr>
<td>IP Address</td>
<td>Internet Protocol Address – A 32-bit address assigned to hosts participating in a TCP/IP network. The IP address consists of network and host portions. It is assigned to an interconnection of a host to a physical network.</td>
</tr>
<tr>
<td>MAC</td>
<td>Medium Access Control - The network layer between the physical and the data link layers. Specifically, the physical (hardware) address exists in this layer.</td>
</tr>
<tr>
<td>Router</td>
<td>A computer that manages traffic between different network segments or different network topologies. It directs the destination IP address. The network media can be different, but the higher-level protocols must be the same.</td>
</tr>
<tr>
<td>TCP/IP</td>
<td>Transmission Control Protocol/ Internet Protocol – A protocol suite used by more than 15 million users with a UNIX association and widely used to link computers of different kinds.</td>
</tr>
<tr>
<td>UIS</td>
<td>Uninterruptable Internet System - This is what controls the auto reset functionality of the Remote Power IP Switch. With this setting enabled, the Switch will monitor the Target Sites and automatically reset power to any outlets the user assigns when the connection is lost.</td>
</tr>
</tbody>
</table>
Google Talk 2 Step Authentication

Due to compatibility, we suggest ensuring your IP Switch is running firmware version 2.40.MNS.NBU.5106, or newer. This firmware, as well as the Utility software needed to upload it, can be downloaded at http://3gstore.com/ipswitchupdates or by logging into your 3Gstore account at http://3gstore.com/support, which is where you can also find our “IP Switch Firmware Upgrade Steps” tip sheet.

Step Procedures:
Creating a Gmail Account to be used by the IP Switch

1. Go to http://gmail.com and select Create Account
2. For this example we have created gtalk3g@gmail.com
3. Once you log into your new account, you'll need to confirm some settings
4. Click on the email account at the top right and a window will pop out
5. Click the "My Account" button
6. A new window will open showing your Account settings
7. Select “Sign-in & Security” on the left
8. Scroll down to the “Signing in to Google” section
9. Confirm that 2-step Verification is Off**
10. Click “Connected apps & sites” on the left
11. Scroll down to the “Allow less secure apps” section and turn it ON

12. You may now close the My Account window and sign out of on the Gmail Inbox page

Step Procedures with 2-Step Verification:
**If you prefer to have 2-step Verification turned ON, skip steps 9-11 above and continue with the additional steps below:
1. Scroll down to the “Password & Sign-In Method” section and select “2-step Verification”
2. Google will walk you through the steps to add a cell phone number for verification. It will send a code you will need to enter into the Gmail browser to verify. Once this is done, it should show 2-step Verification is ON.
3. Next, go back to the “My Account” -> “Password & Sign-In Method” section of Gmail
4. You’ll see a new field below 2-step Verification called “App Passwords”, click on this
5. Click “Select Device” and choose “Other (Custom Name)”
6. Give it a unique name to identify it, here we’ve used “IP Switch”
7. Click “Generate”
8. Copy/ write the App password down (pictured, below right), as you will need it to enter into the IP Switch later, then click “Done”
Applying settings to your IP Switch

**NOTE:** If configuring for the first time, steps must be done at the same location and on the same local network as the IP Switch.

1. Use the **Utility** software to locate your IP switch on the network, then click “Launch Web User Interface” on the left - OR - enter the local IP address for the IP Switch into your browser (this can be obtained via your router’s client list or a LAN scan application such as LANscan for MAC, or Angry IP Scanner for Windows)
2. Log in when prompted
3. Under the ‘Configuration Settings’ section on the left click ‘Hangouts’
4. Under ‘Status’ at the top left of this page, select ‘Online’
5. For the ‘Login ID’ enter the Gmail Account you just created (i.e. gtalk3g@gmail.com). This again will act as the IP Switch account.
6. Across from the Login ID is where you will enter the password/ APP password associated with this new account. (see step 8 in the 2-step Verification procedure above)
7. Next, provide a personal message for the Switch to use. Here, we’ve used IP Switch
8. Under the ‘Add Contact Accounts’ enter your personal Gmail address (or create a new one if necessary). This will be used to control the switch. In our example we’ll be using 3gstoretestemail@gmail.com
9. Click ‘Apply’ at the bottom right corner of the web page. A pop up should come up indicating that the settings have been applied - click OK
10. After a moment the Switch should indicate that it it has Signed In and is Online
11. Click “Send test message” - this will prompt the IP Switch account to send an Invitation to Chat/ test message to the control account

12. Log into the control Gmail account through a web browser
13. Once logged in, take a look at the bottom left corner - this is where your chat history, including your chat contacts, is located.
14. Select the IP Switch Account name and you should get a pop up window in the bottom right corner of the browser.
15. Click “Accept” to accept the chat invitation. Once accepted, you’ll be able to start sending commands* to your Switch.
*The Commands you will be able to send via Chat are:

Note: 0/1/2 = Variables are for specified power outlets 1, 2, or 0 for both ports

SET ON 0/1/2 - This turns On the Power to the specified port(s)

SET OFF 0/1/2 - This turns off the power to the specified port(s)

SET RESET 0/1/2 – This resets/power-cycles the specific port(s)

GET IP – Retrieves current public (WAN) IP address and local (LAN) IP Addresses

GET STATUS – Retrieves current status information. Includes current ping times to all target sites; indicates if port 1 or 2 are on/off

HELP - provides a list of available commands

**Hangouts Troubleshooting:**

If you receive an error when trying to get your IP Switch Gmail account to sign in (i.e. errors #501 or #20512), please try the following:

1. Log into the Gmail account through a web browser and confirm there is no 2-step verification set - OR, if it is, that you have the proper App Password entered. If you are NOT using 2-step verification, you will also need to confirm the “Allow Less Secure Apps” option is turned ON. These are both found under the “My Account” section of Gmail.
2. Wait at least 5 minutes while the Switch tries to Sign In. It will go back and forth between signing in and showing the connection error - sometimes we've seen this process take longer than a minute.

3. Turn the Status on the Google Talk Settings to Offline then click Apply. Log into the Gmail account through a web browser and turn the “Allow Less Secure Apps” option OFF, then sign out of the account. Next, sign right back in and turn the “Allow Less Secure Apps” option back ON. Sign out of the browser. Lastly, go back to the Google Talk settings on your Switch and change the Status to Online. Click Apply. Wait a few minutes while the Switch tries to connect.

4. If you’re still not getting the sign in or chats to work, some users have had success reloading the firmware, if current. You may download current firmware here: http://3gstore.com/ipswitchupdates