
ATTACHMENT E.**- USER MANUAL -**

HCT CO., LTD.

SAN 136-1, AML-RI, BUBAL-EUP, ICHEON-SI, KYOUNGKI-DO, 467-701, KOREA
TEL:+82 31 639 8517 FAX:+82 31 639 8525 www.hct.co.kr



WiMAX Indoor Repeater

INSTALLATION GUIDE

Version 1.0

(GSR-2630D-SPR)

GS Teletech Inc.

Contents of Box

Contents	Picture	Quantity
Repeater		1EA
Installation Guide Book ver 1.0		1EA
CD which Contains User Manual Ver 1.0 And Installation Guide Ver 1.0		1EA
Ethernet Cable 6.6ft(2m)		1EA
Power Cord 10ft (3m)		1EA
Ground Cable 10ft (3m)		1EA

Contents	Picture	Quantity
Ground Cable 6.6ft (2m)		1EA
Ground Sems Screw M4 x 0.31" (M4 x 8mm)		4EA
Bracket Sems Screw M6 x 0.63" (M6 x 16mm)		4EA
Lag Screw Size: 1/2" x 2"		4EA
Anchor Bolt Set 1/2" x 2"		4EA

This publication provides instruction for installing WiMAX 24dBm, 30dBm, and 33dBm repeaters.

The images for the User Interface in this publication may vary from the repeater's depending on its S/W version.

Copyright

© 2008, GS Teletech, Inc.
All Rights Reserved
Printed in the Republic of Korea

Version Revision History:

Date	Version	Changes
07/2008	Draft	

Certification

UL/FCC: This equipment complies with UL and FCC

Warnings and Hazards

WARNING! ELECTRIC SHOCK

Opening the BDA (bi-directional amplifier) could result in electric shock and may cause severe injury.



WARNING! EXPOSURE TO RF

Working with the repeater while in operation, may expose the technician to RF electromagnetic fields that exceed FCC rules for human exposure. Visit the FCC website at <http://www.fcc.gov/oet/rfsafety> to learn more about the effects of exposure to RF electromagnetic fields.

WARNING! DAMAGE TO EQUIPMENT

Operating the BDA with antennas in very close proximity facing each other could lead to severe damage to the repeater.

RF EXPOSURE & ANTENNA PLACEMENT

Actual separation distance is determined upon gain of antenna used.

Please maintain a minimum safe distance of at least 8inch while operating near the donor and the server antennas. Also, the donor antenna needs to be mounted outdoors on a permanent structure.

WARRANTY

Opening or tampering the BDA will void all warranties.



CAUTION: REPEATER SHOULD BE INSTALLED AS CLOSE AS POSSIBLE TO POWER SOURCE.



CAUTION: THIS REPEATER IS FOR INDOOR USE ONLY AND SHOULD BE LOCATED INSIDE OF BUILDING.

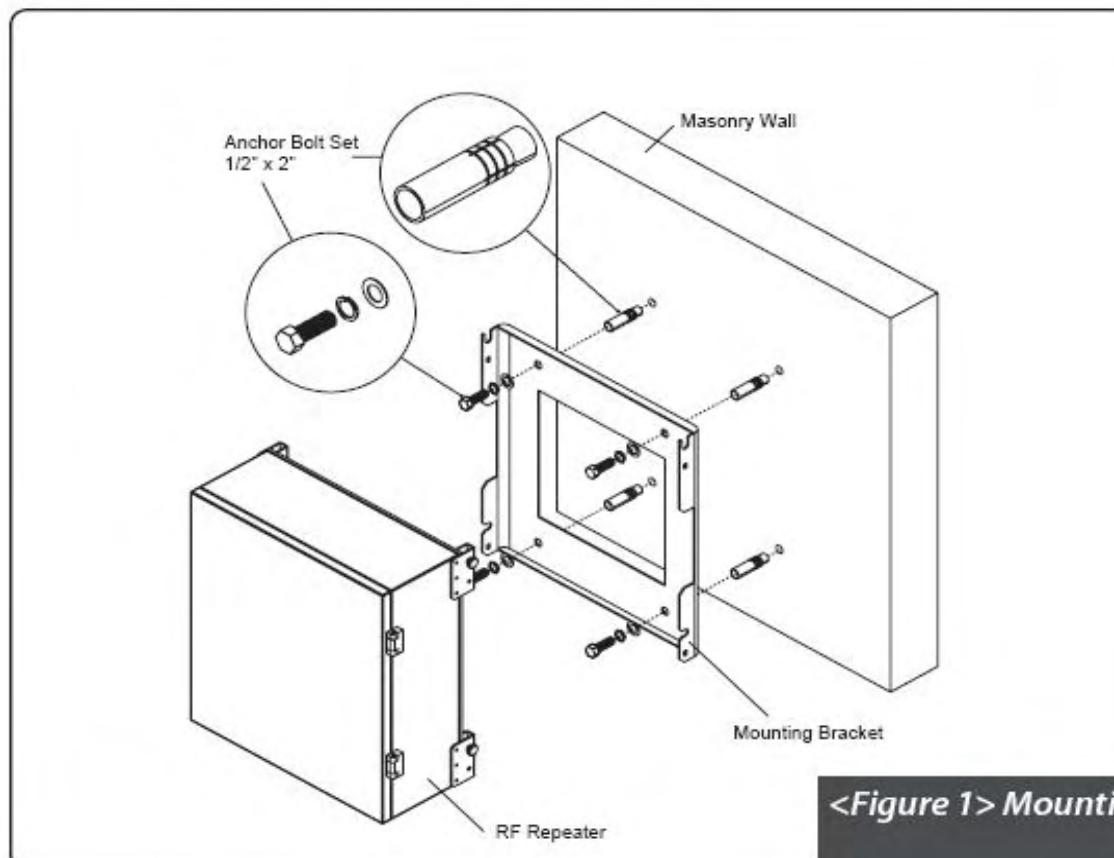


CAUTION: RISK OF EXPLOSION IF BATTERY ON CONTROLLER BOARD IS REPLACED WITH AN INCORRECT TYPE.

Mounting Repeater

Masonry Wall

1. Using a pencil, mark the location of each of the mounting bracket's four mounting holes on the wall.
2. Drill holes in the wall at the locations marked in step 1.
3. Set the anchors in the wall using a hammer.
4. Locate the four mounting bolts and place a lock washer and flat washer on each bolt.
5. Place the mounting bracket over the four holes with anchors, making sure that the washers are on the repeater side of the mounting bracket. Tighten bolts until secure.

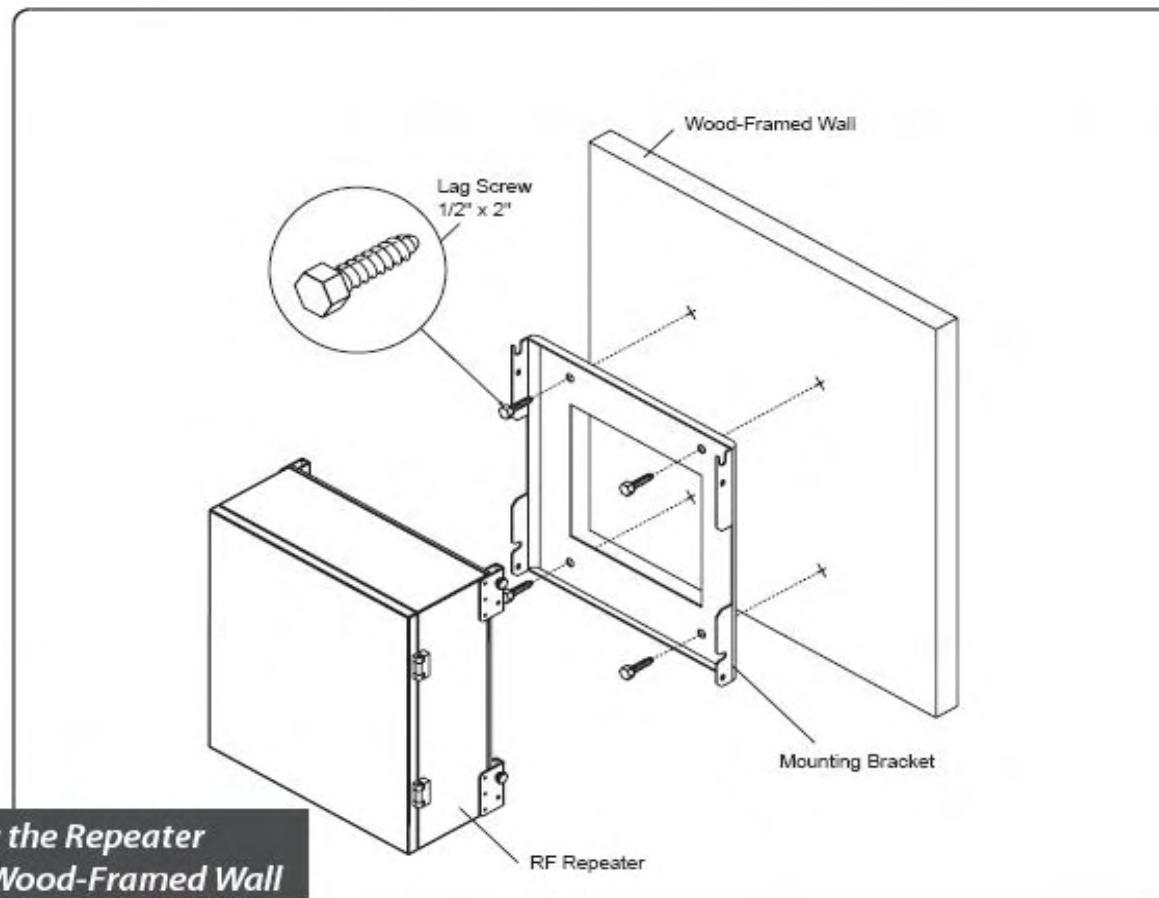


*<Figure 1> Mounting the Repeater
on a Masonry Wall*

Mounting Repeater

Wood-Framed Wall

1. It is recommended to first attach a sheet of plywood to the wall. The sheet of plywood should be anchored to the studs in the wall.
2. Using a pencil, mark the location for each of the mounting bracket's four mounting holes on the plywood.
3. Place the mounting bracket over the four lag screws heads.
4. Thread a lag screw at the positions marked in step 1.



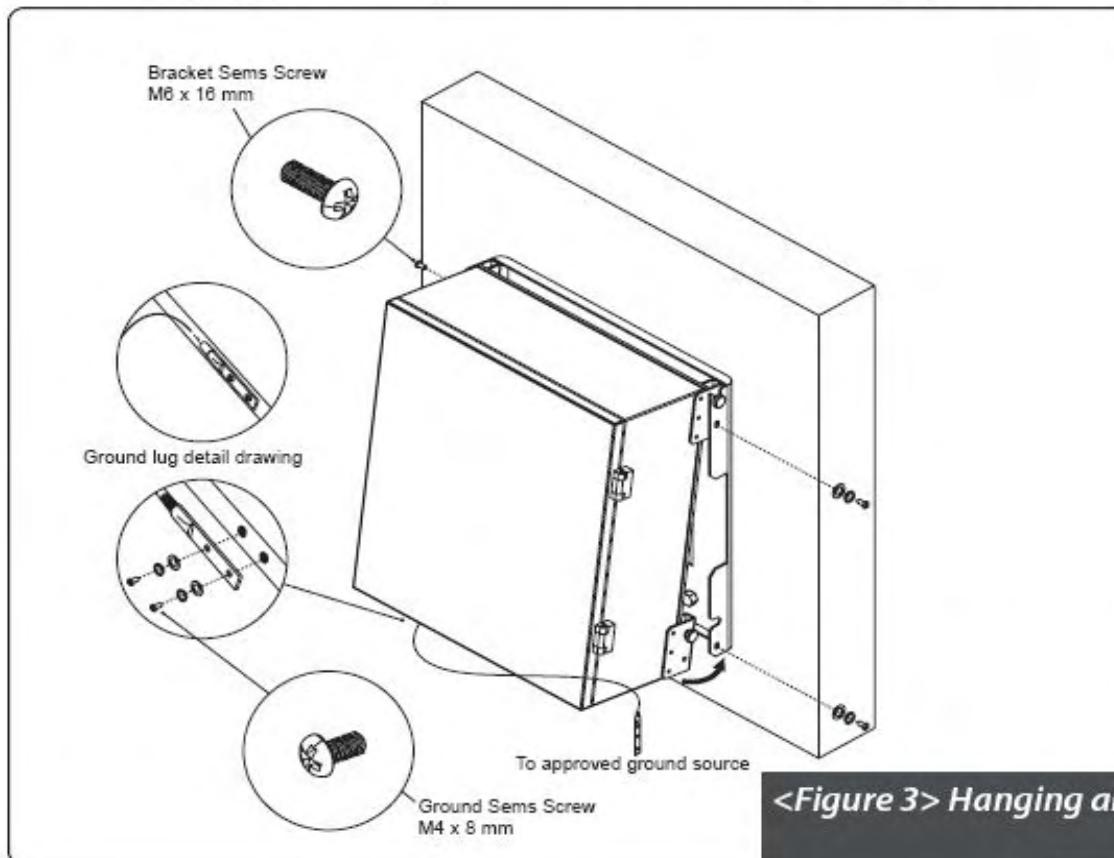
Hanging and Grounding

1. Hang the Repeater from the mounting bracket.
2. Locate the four Bracket Sems Screws with installed washers. Tighten bolts until secure.
3. Locate the ground lug on the underside(or side) of the repeater.
4. Crimp the ground cable to the ground lug.
5. Route the free end of the ground cable to an approved(per local code or practice) ground source.



CAUTION

Ground cable must be properly grounded to provide both EMI and voltage surge protection for the repeater.



<Figure 3> Hanging and Grounding the Repeater

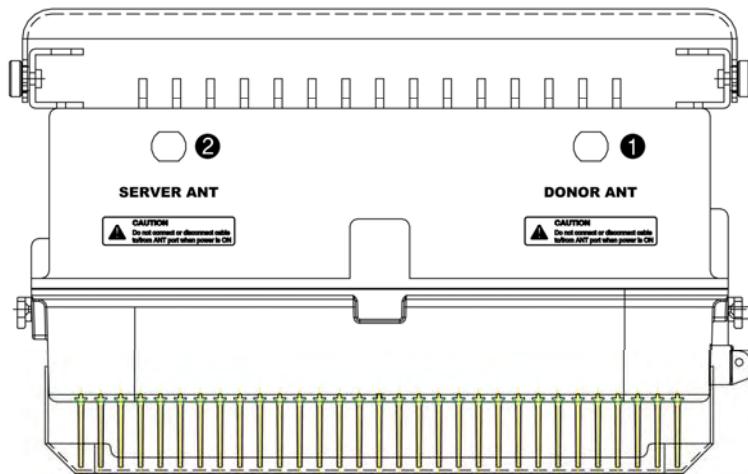
Position Antenna

- Customer specifications should be followed for positioning the antennas properly.

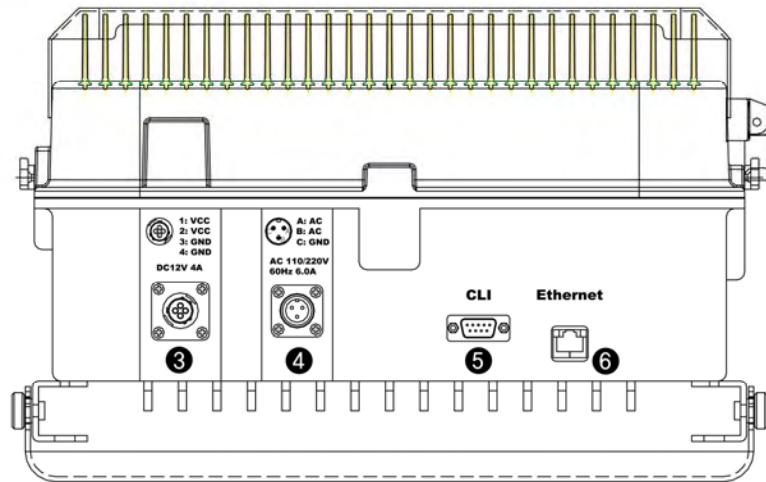


<Figure 4> An installer is directing Donor Antenna to nearby BTS to receive strong input signal.

WiMAX Repeater External Port Design



<Figure 5> ANT Port Display



<Figure 6> Port Display (Bottom side)

NO	PORT	NO	PORT
①	DONOR ANT PORT	④	AC POWER PORT
②	SERVER ANT PORT	⑤	CLI PORT
③	DC POWER PORT	⑥	ETHERNET PORT

<Figure 7> WIMAX_33dBm External Port Title

Cable Connections

- Connect Donor and Server Antennas



CAUTION

Do not connect or disconnect cable from ANT port when power is ON



<Figure 8> Donor ANT Port Connection



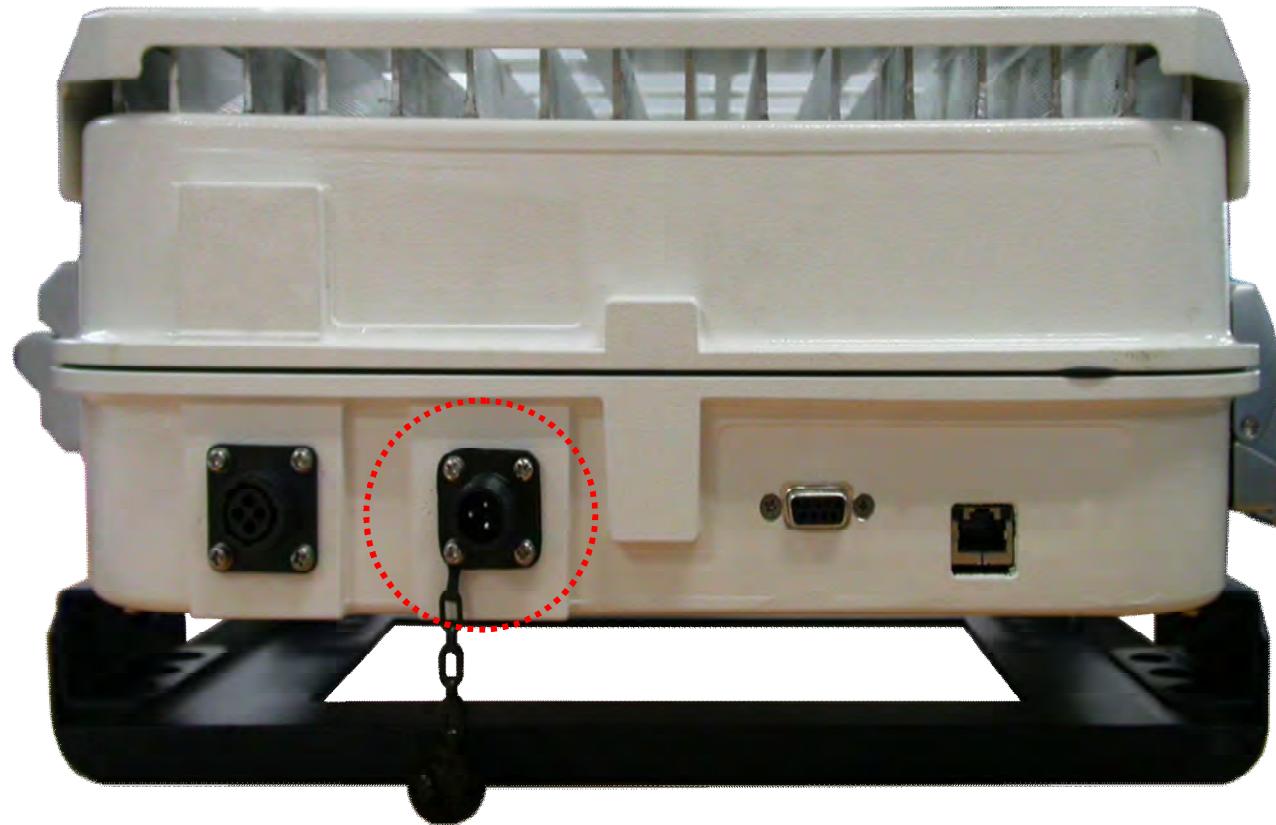
<Figure 9> Server ANT Port Connection

WiMAX Repeater External Design



<Figure 10> WiMAX Repeater External Design

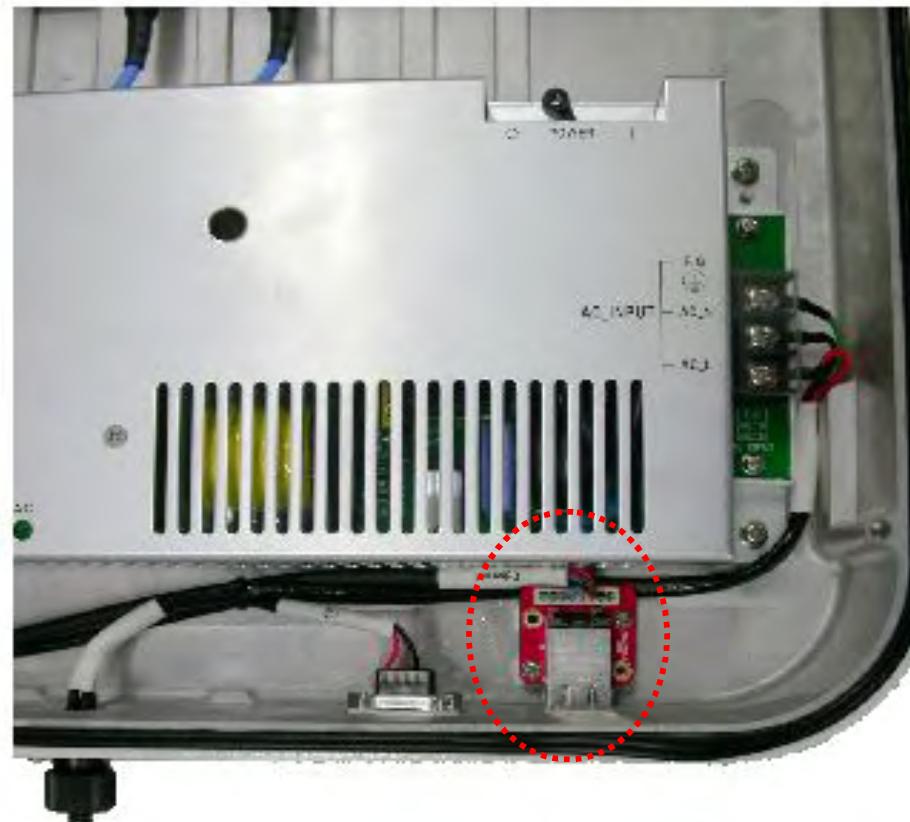
Connecting Power Cable



<Figure 11> AC Power Port Connection

Web UI

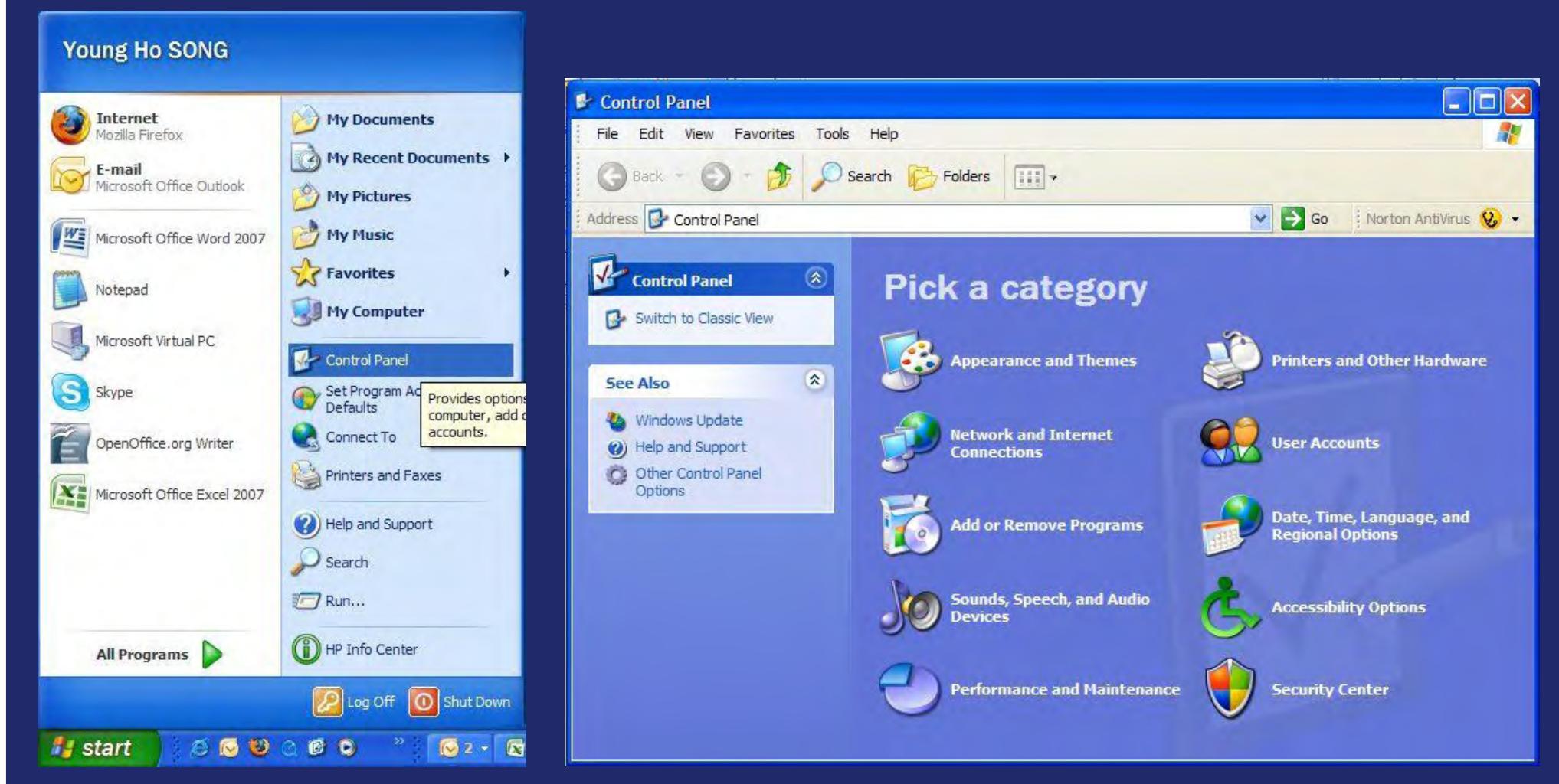
- Before connecting to repeater, disable wireless networking functions and remove wireless broadband card.
- Connect Ethernet Crossover cable from repeater to laptop.



<Figure 12> Ethernet Port

Connecting to Web UI

1. Start->Control Panel->Network and Internet Connections

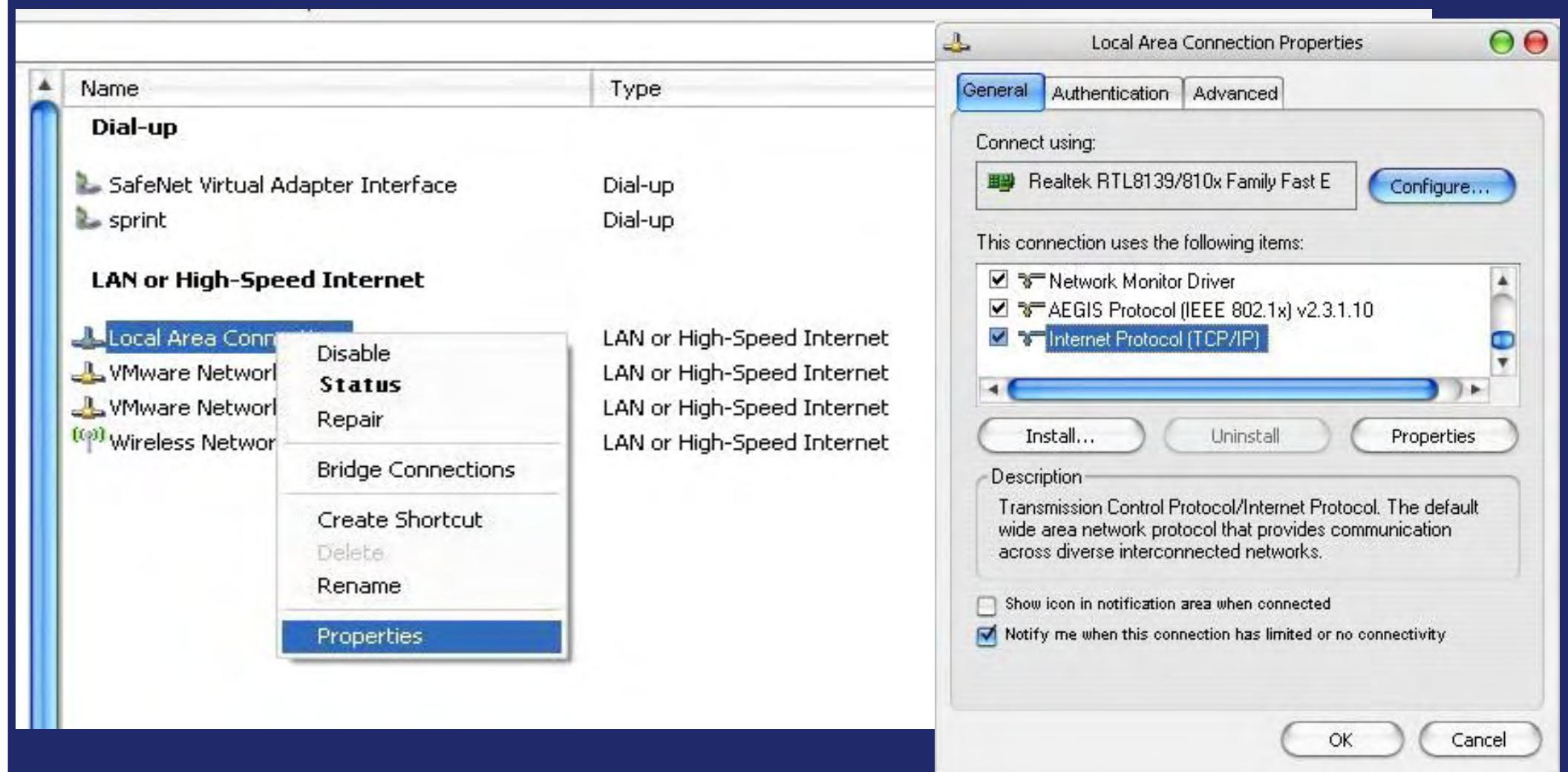


CAUTION

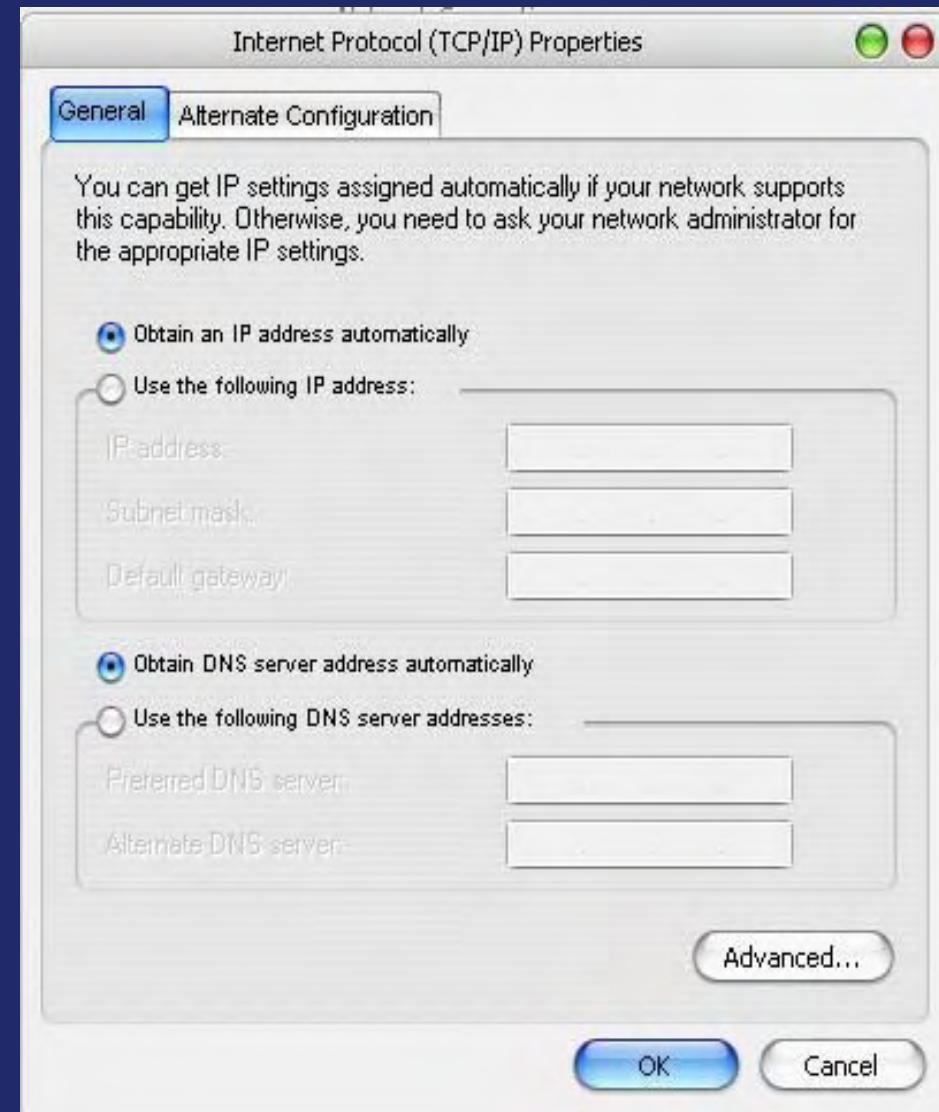
Disable wireless connections and remove wireless broadband card.

Connecting to Web UI

2. Right click Local Area Connections and choose Properties
3. Click Internet Protocol (TCP/IP) on General tab and click Properties



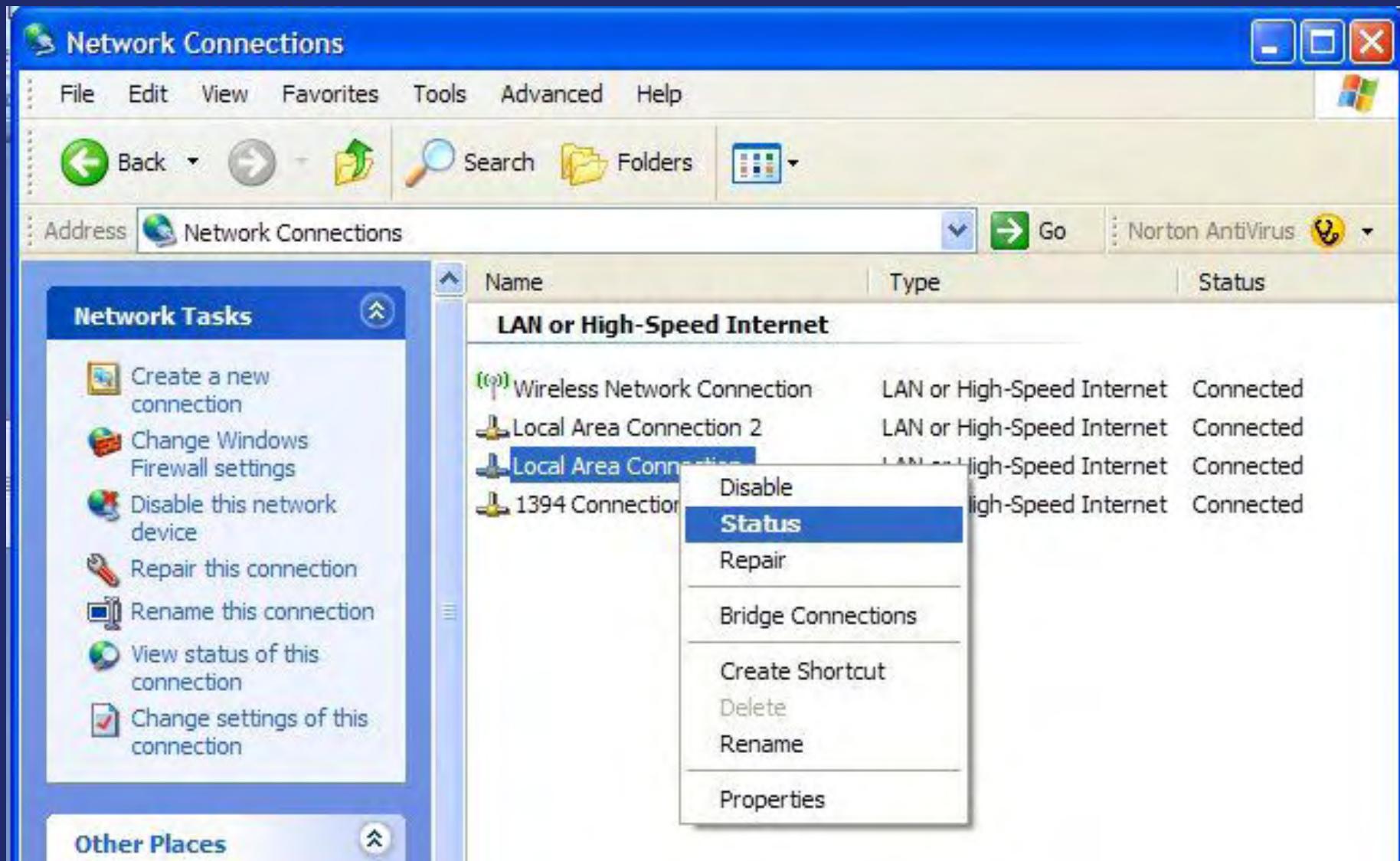
On General Tab



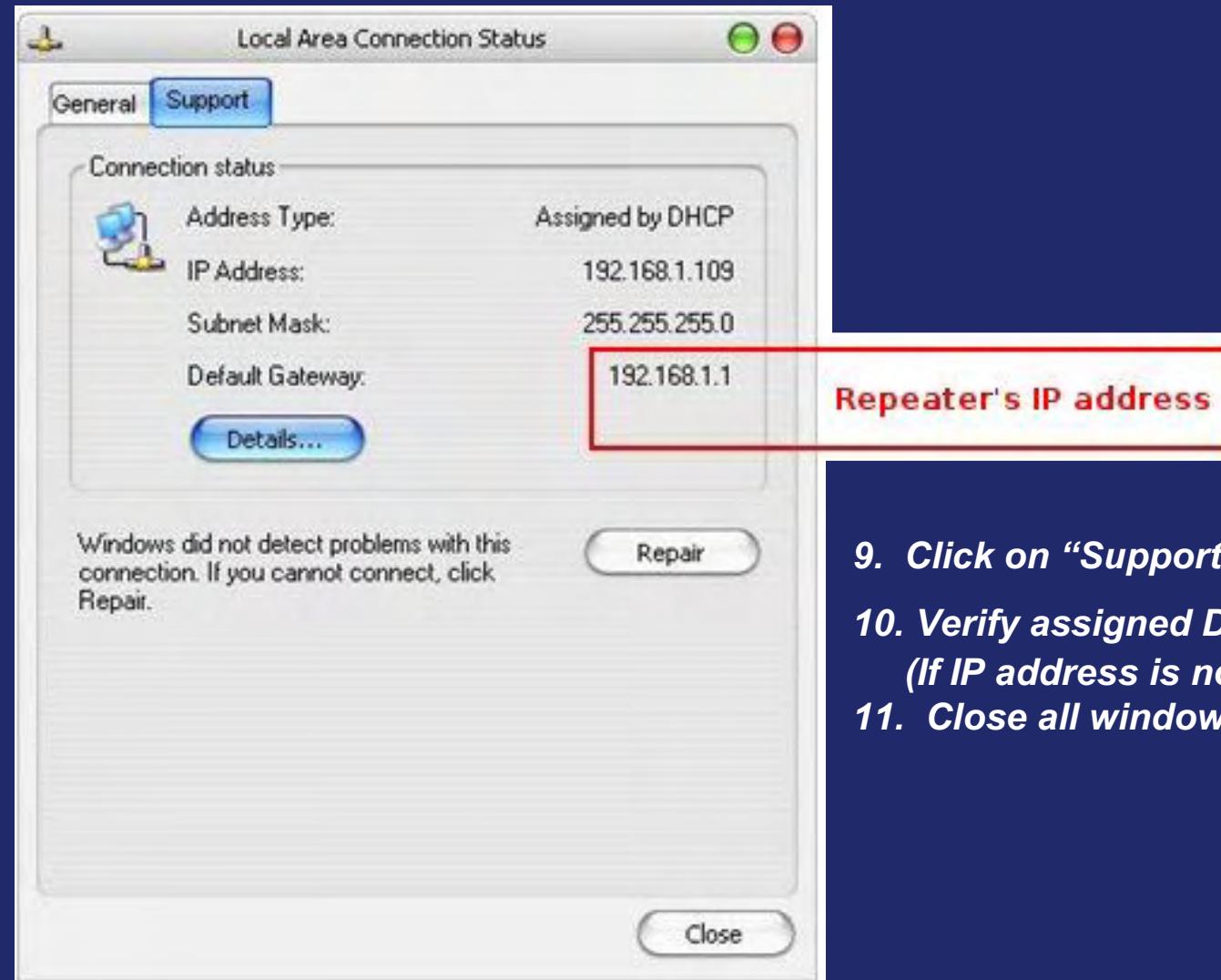
4. ***Choose “Obtain an IP address automatically”***
5. ***Choose “Obtain DNS server address automatically”***
6. ***Click “OK” to close Properties***
7. ***Click “OK” to close Properties***

Connecting to Web UI

8. Right click Local Area Connections and choose Status



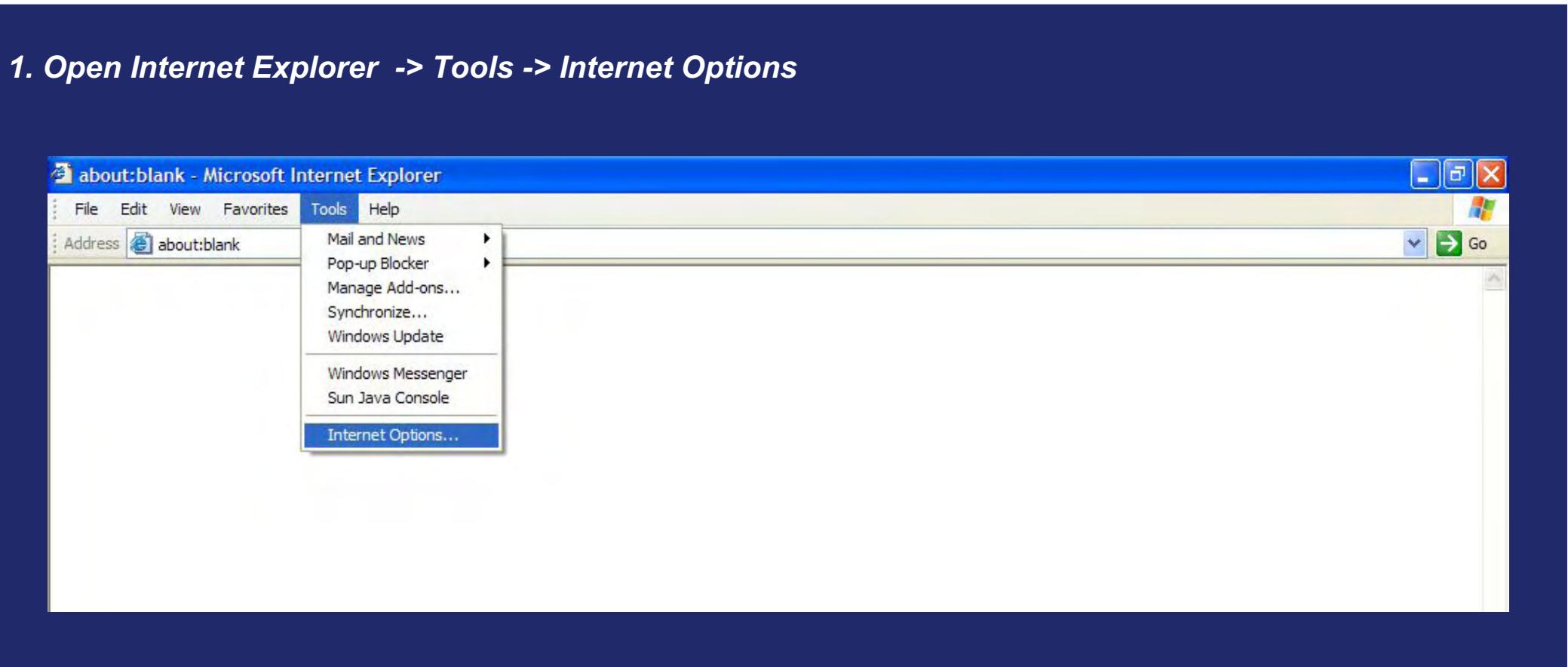
Verify Assigned IP Address



9. Click on “Support” tab.
10. Verify assigned Default Gateway at local connection.
(If IP address is not assigned, click repair)
11. Close all windows when finished.

Internet Explorer Option Settings

- Proceed step by step as indicated in the following slides to delete all temporary internet files and records.



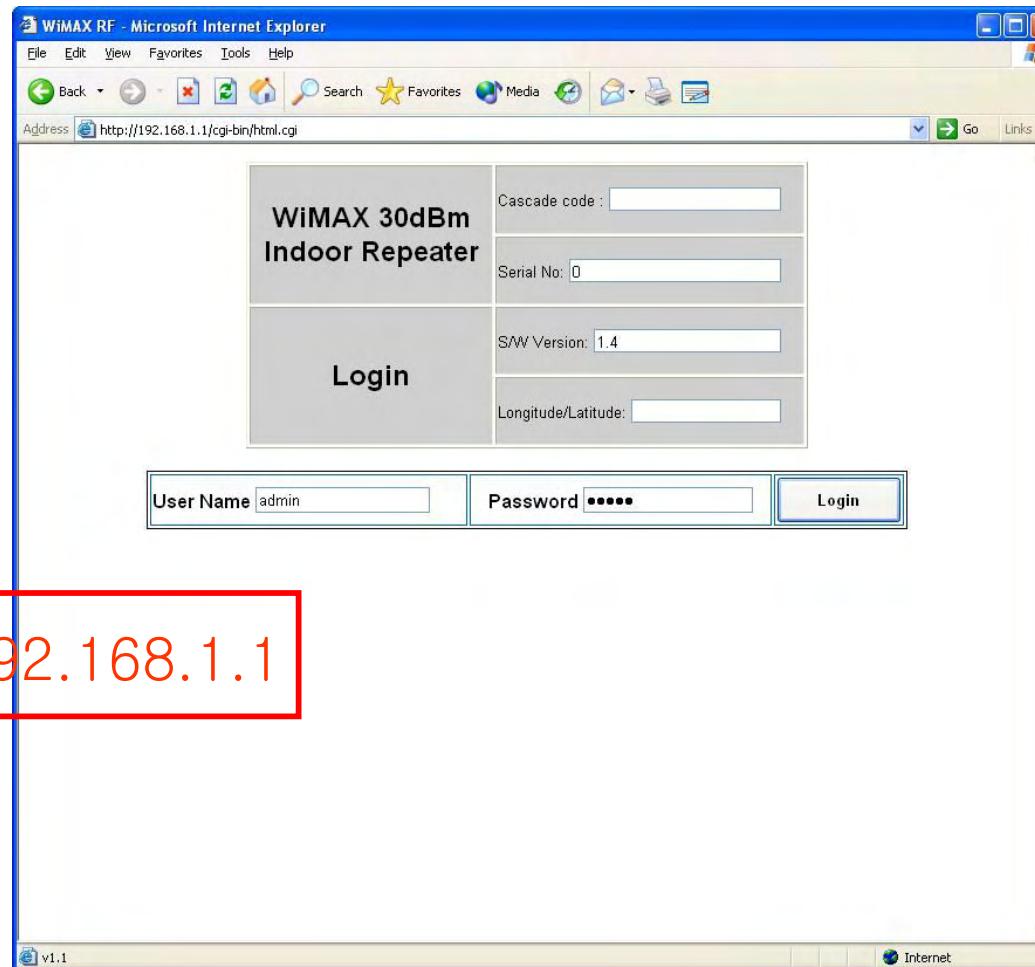
Browser History Options



*On the “General” tab,
In the “Temporary Internet Files” section:*

- 2. Click “Delete Cookies” → “OK”**
- 3. Click “Delete Files” → “OK”**
- 4. Click “OK”**

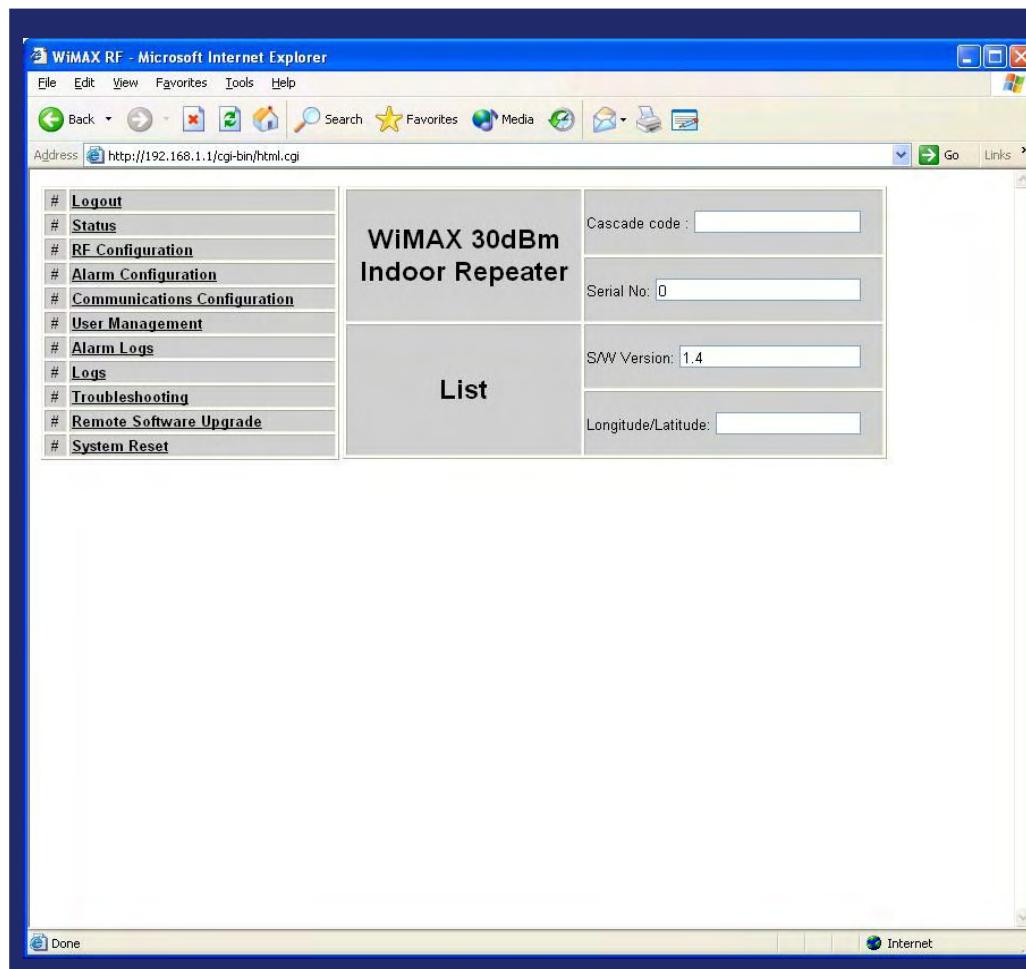
Login Screen



Enter Default Gateway's IP address into address bar as previously described, you will be redirected to Login. Default User Name is 'admin', and default Password is 'admin'. You may need to change password as described in the User Management section. Cascade Code and Longitude/Latitude will initially be blank, you can input Cascade Code and Longitude/Latitude as described in the Communications Configuration section.

List Menu

- After you log in, you can see various menu page links related to the equipment.



Status Page

- Default D/L and U/L are set at minimum Gain.
- The default values in various fields will differ with different models of WiMAX Repeaters.
- In order to view other pages, you can click the desired menu on the top-left corner of all pages.
- Changes can be made on the Status Page. This page is for checking the repeater's conditions and settings.

WiMAX RF - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address: http://192.168.1.1/cgi-bin/html.cgi?function=status

Logout
Status
RF Configuration
Alarm Configuration
Communications Configuration
User Management
Alarm Logs
Logs
Troubleshooting
Remote Software Upgrade
System Reset

WiMAX 30dBm Indoor Repeater

Cascade code:
Serial No:
S/W Version: 1.4
Longitude/Latitude:

RF Status Indoor 30dBm

Downlink Output Power	-10.0	dBm	Uplink Output Power	-10.0	dBm
Downlink Upper Limit	50.0	dBm	Uplink Upper Limit	50.0	dBm
Downlink Lower Limit	20.0	dBm	Uplink Lower Limit	20.0	dBm
Downlink ATT	0.0	dB	Uplink ATT	0.0	dB
Downlink ALC Limit	42.0	dBm	Uplink ALC Limit	42.0	dBm
Downlink RSSI Level	-1.1	dBm	RSSI Lower Limit	20.0	dBm
Downlink ALC Control	ON		Uplink ALC Control	ON	
HPA ON/OFF	OFF				
Gain Balance	OFF		Shutdown ON/OFF	ON	
AGS Control ON/OFF	OFF		Delay Alarm Reporting Minutes	5	
Temperature	77.0	°F	Temperature Limit	122.0	°F

Done Internet

Status Page

WiMAX RF - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.1.1/cgi-bin/html.cgi?function=status

Downlink Output Power	-10.0	dBm	Uplink Output Power	-10.0	dBm
Downlink Upper Limit	50.0	dBm	Uplink Upper Limit	50.0	dBm
Downlink Lower Limit	20.0	dBm	Uplink Lower Limit	20.0	dBm
Downlink ATT	0.0	dB	Uplink ATT	0.0	dB
Downlink ALC Limit	42.0	dBm	Uplink ALC Limit	42.0	dBm
Downlink RSSI Level	-1.1	dBm	RSSI Lower Limit	20.0	dBm
Downlink ALC Control	ON		Uplink ALC Control	ON	
HPA ON/OFF	OFF				
Gain Balance	OFF		Shutdown ON/OFF	ON	
AGS Control ON/OFF	OFF		Delay Alarm Reporting Minutes	5	
Temperature	77.0	°F	Temperature Limit	122.0	°F

Band Select Status

Bandwidth	10	MHz	Band Blocks Used	AB	2518.50
-----------	----	-----	------------------	----	---------

Time Sync Mode Status

D/L Symbol	255	Pilot Number	255		
TDD Mode	Auto Mode				
FO Quantity	0	dB	FO Threshold	81	dB

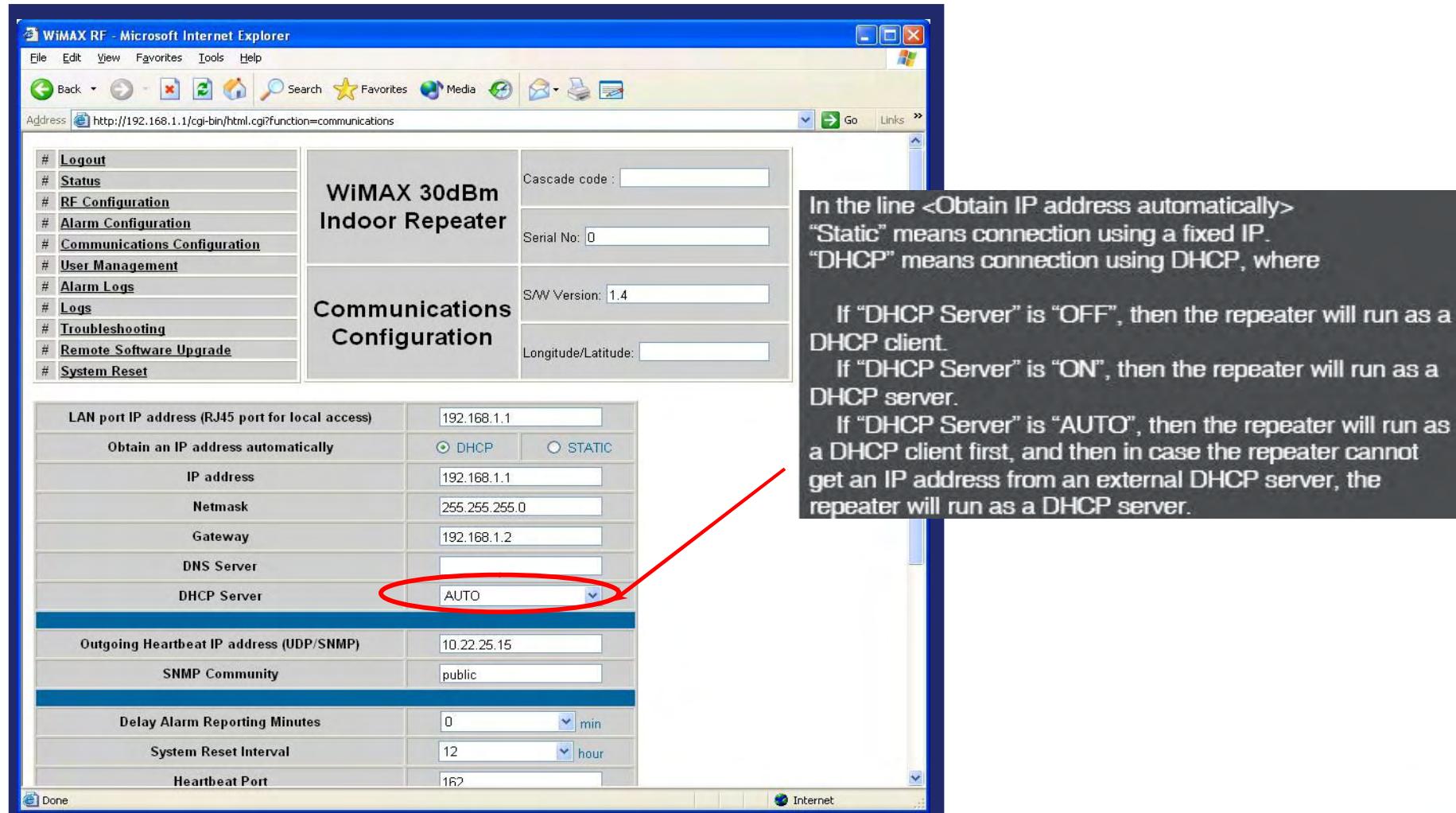
Alarm Status

Status	Name	Status	Name
Green	RF Power alarm	Green	RSSI alarm
Green	Undercurrent alarm	Green	Overtemp alarm
Green	VSWR alarm		

Done Internet

Communications Configuration

- Click on the Communications Configuration link.
- On this page you can change various values related to IP network. Because Web UI is based on IP network, incorrect configuration may make it impossible to connect to Web UI



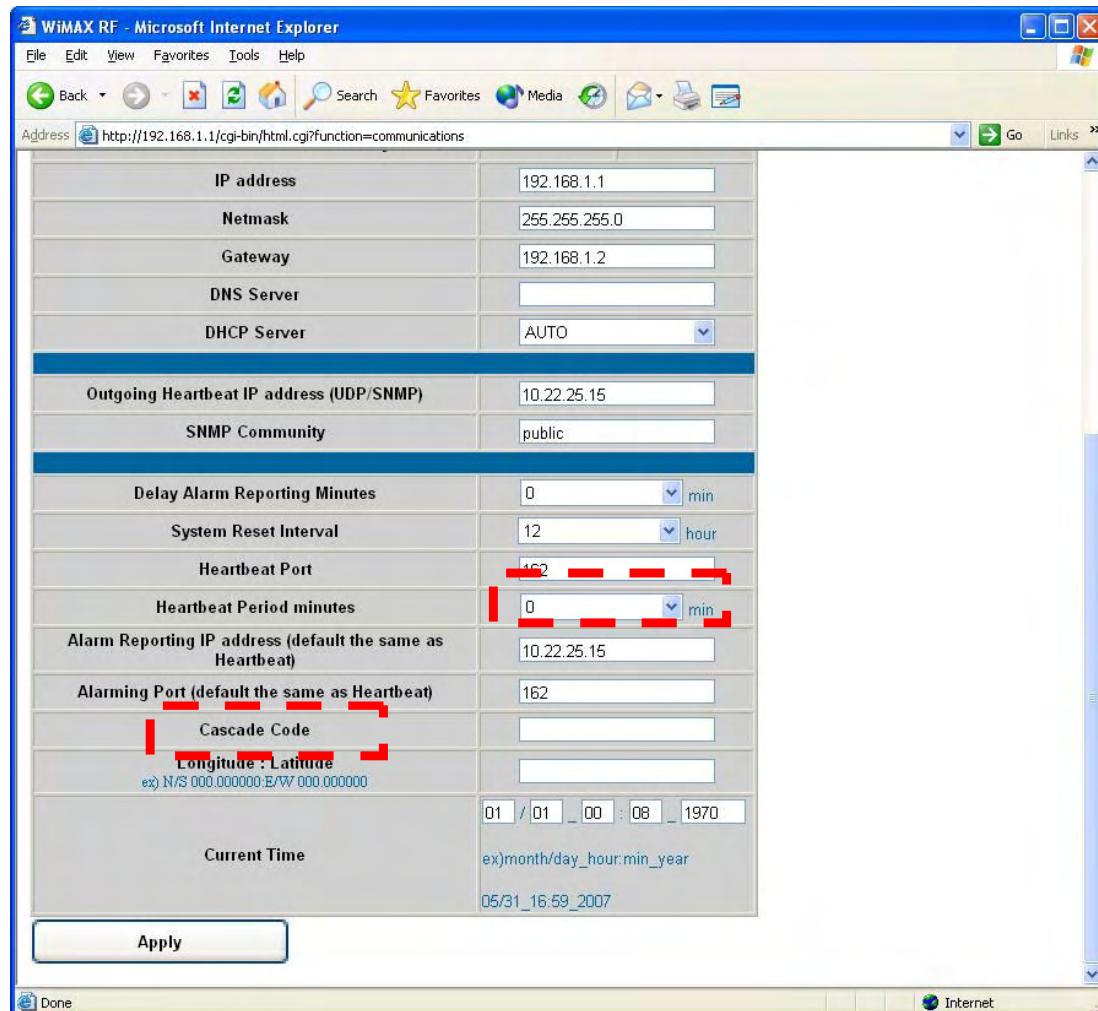
The screenshot shows the 'Communications Configuration' page for a 'WiMAX 30dBm Indoor Repeater'. The 'DHCP Server' dropdown menu is circled in red and set to 'AUTO'. A callout box to the right provides the following information:

In the line <Obtain IP address automatically>
 "Static" means connection using a fixed IP.
 "DHCP" means connection using DHCP, where

If "DHCP Server" is "OFF", then the repeater will run as a DHCP client.
 If "DHCP Server" is "ON", then the repeater will run as a DHCP server.
 If "DHCP Server" is "AUTO", then the repeater will run as a DHCP client first, and then in case the repeater cannot get an IP address from an external DHCP server, the repeater will run as a DHCP server.

Communications Configuration

- In case that screen resolution is 1024 x 768, you may need to use scroll bars to view all. The installer can input Cascade Code into Repeater ID field, and change current time (see last 2 fields). Changes will not be take effect until you click “Apply” button.



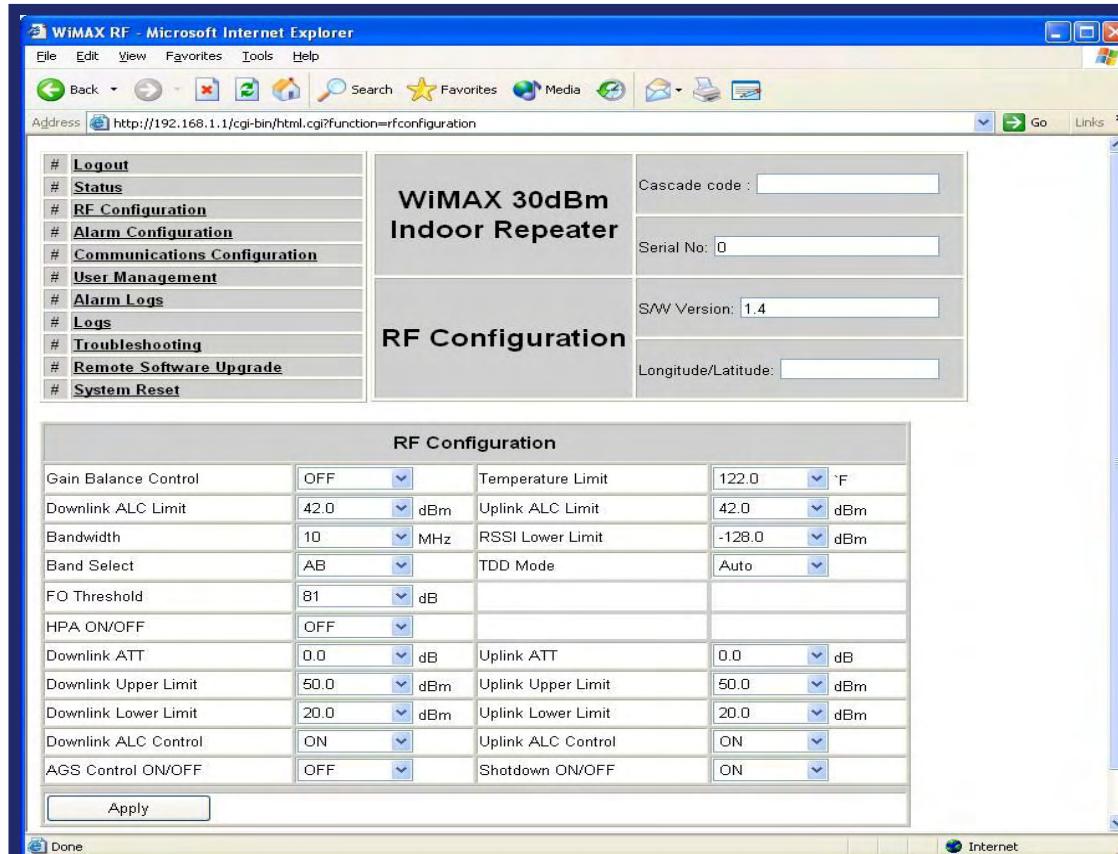
- Caution : Please, follow the example

When heartbeat period minutes is 2
 -> User should input Cascade Code, Longitude, and Latitude information of the site to turn HPA on

When heartbeat period minutes is 0
 -> User does not have to input Cascade Code, Longitude, and Latitude information of the site to turn HPA on. (HPA is automatically ON)

RF Configuration

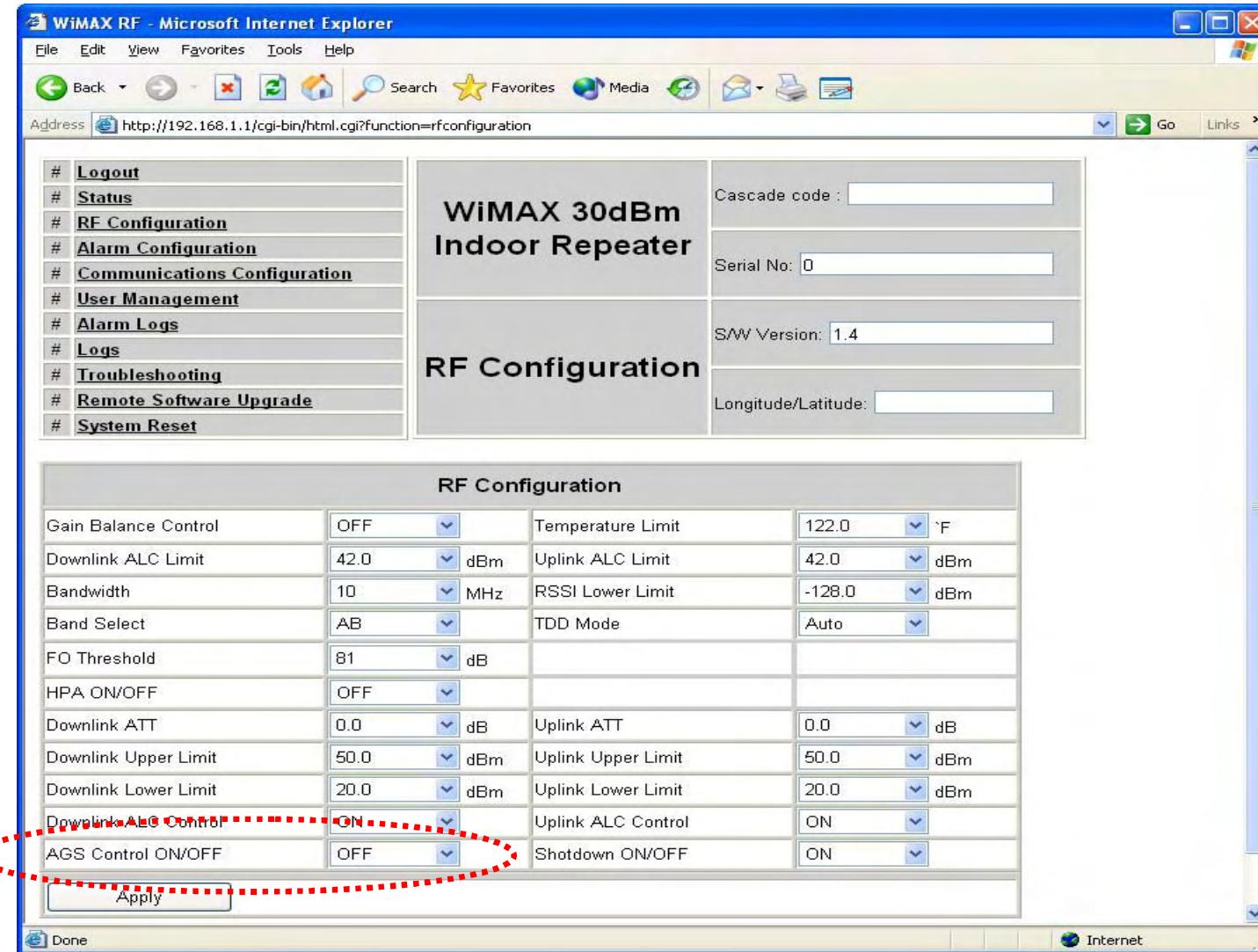
- Click the RF Configuration link.
- This menu is where installer will actually configure the Repeater.
- You can change various RF values of the equipment on this page.
- In case that screen resolution is 1024 x 768, you may need to use scroll bars to view all.
- Changes will not take effect until you click “Apply” button.
- The default values in various fields will differ with different models of WiMAX RF Repeaters.



RF Configuration			
Gain Balance Control	OFF	Temperature Limit	122.0 °F
Downlink ALC Limit	42.0 dBm	Uplink ALC Limit	42.0 dBm
Bandwidth	10 MHz	RSSI Lower Limit	-128.0 dBm
Band Select	AB	TDD Mode	Auto
FO Threshold	81 dB		
HPA ON/OFF	OFF		
Downlink ATT	0.0 dB	Uplink ATT	0.0 dB
Downlink Upper Limit	50.0 dBm	Uplink Upper Limit	50.0 dBm
Downlink Lower Limit	20.0 dBm	Uplink Lower Limit	20.0 dBm
Downlink ALC Control	ON	Uplink ALC Control	ON
AGS Control ON/OFF	OFF	Shutdown ON/OFF	ON

Automatic Setup Using AGS Function

Set AGS Control to 'ON' and click Apply



WiMAX RF - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.1.1/cgi-bin/html.cgi?function=rfconfiguration

Logout
Status
RF Configuration
Alarm Configuration
Communications Configuration
User Management
Alarm Logs
Logs
Troubleshooting
Remote Software Upgrade
System Reset

WiMAX 30dBm Indoor Repeater

RF Configuration

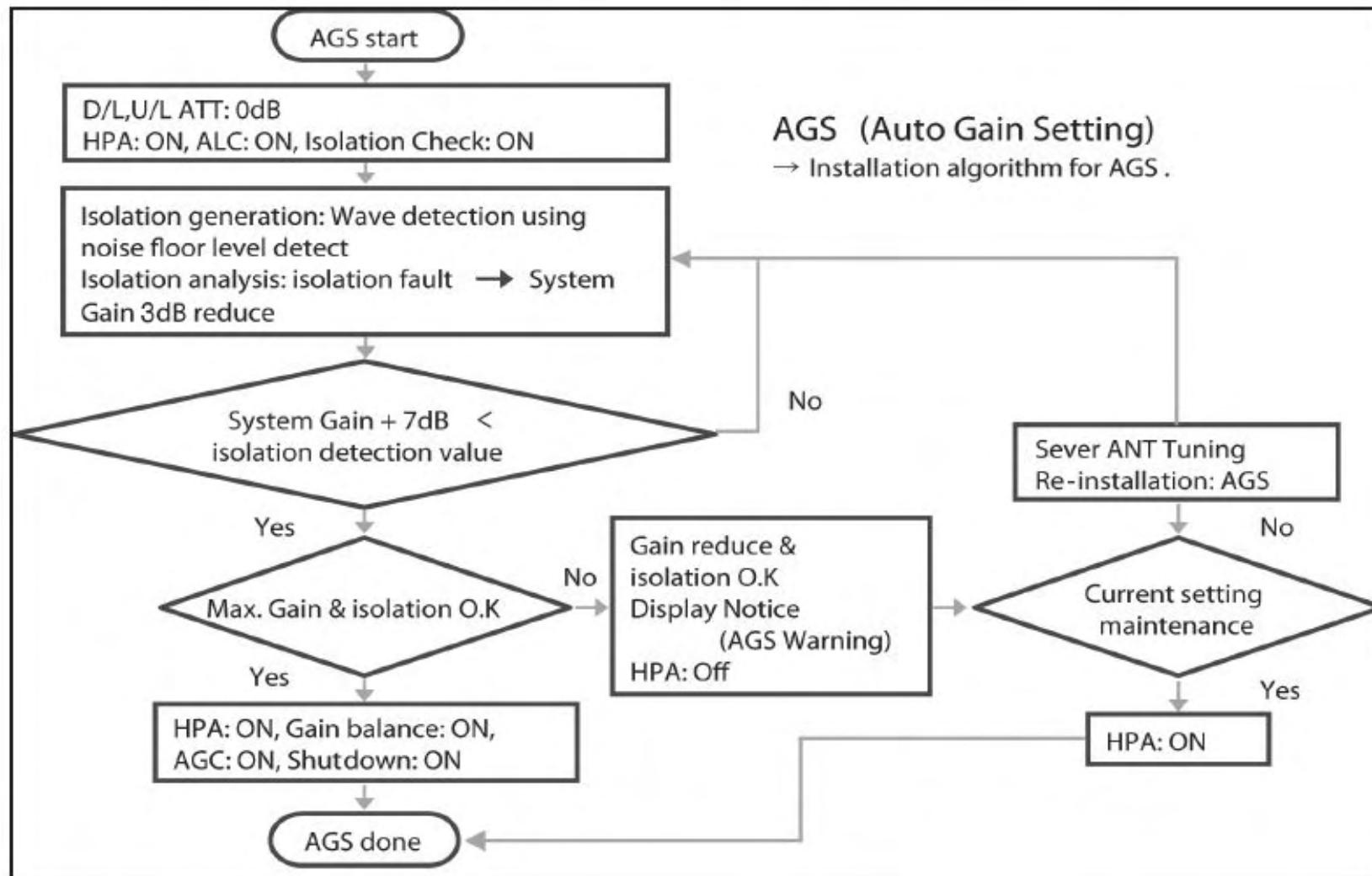
Cascade code :
Serial No: 0
S/W Version: 1.4
Longitude/Latitude:

RF Configuration

Gain Balance Control	OFF	Temperature Limit	122.0 °F
Downlink ALC Limit	42.0 dBm	Uplink ALC Limit	42.0 dBm
Bandwidth	10 MHz	RSSI Lower Limit	-128.0 dBm
Band Select	AB	TDD Mode	Auto
FO Threshold	81 dB		
HPA ON/OFF	OFF		
Downlink ATT	0.0 dB	Uplink ATT	0.0 dB
Downlink Upper Limit	50.0 dBm	Uplink Upper Limit	50.0 dBm
Downlink Lower Limit	20.0 dBm	Uplink Lower Limit	20.0 dBm
Downlink ALC Control	ON	Uplink ALC Control	ON
AGS Control ON/OFF	OFF	Shutdown ON/OFF	ON

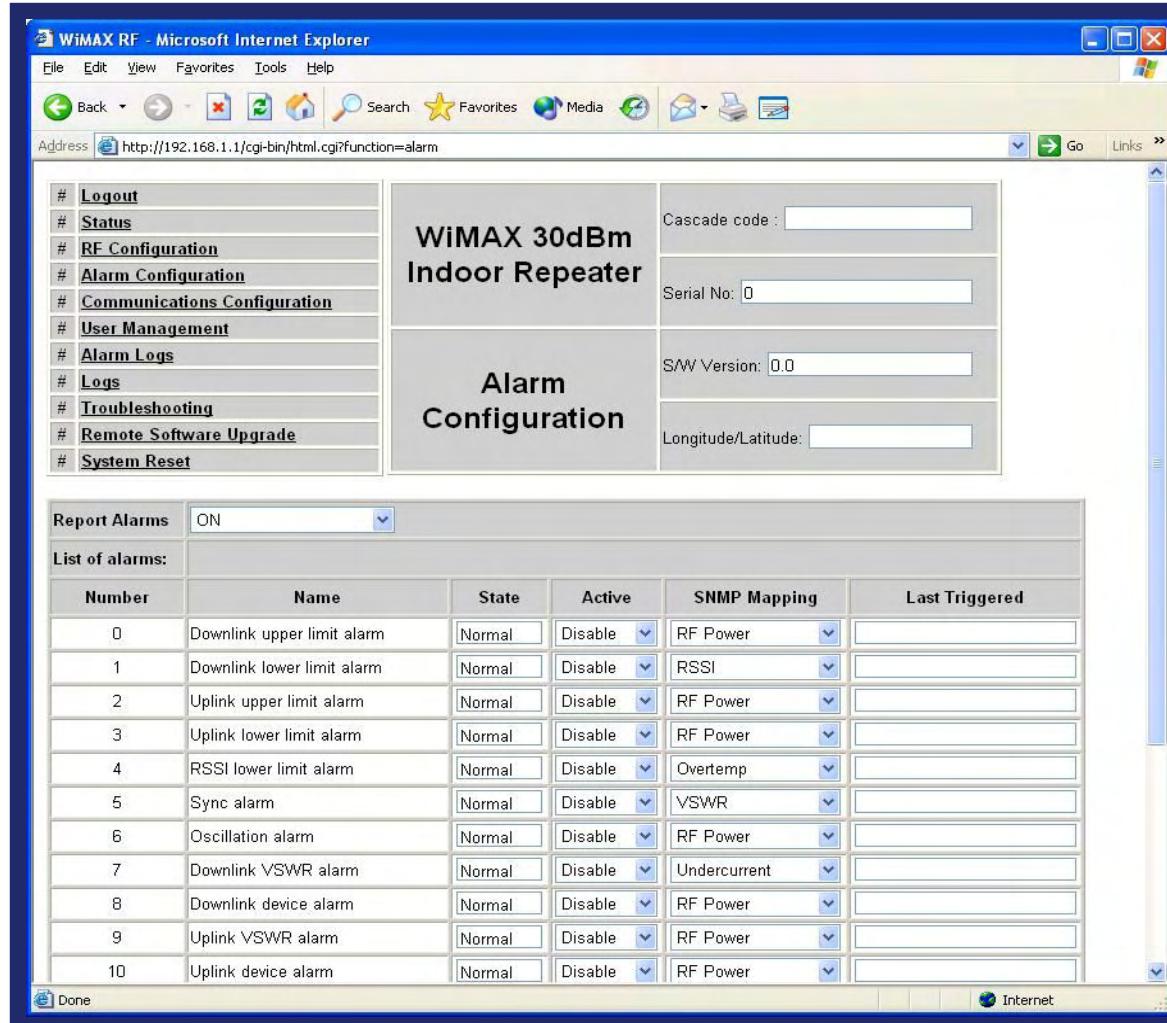
Apply

AGS Flow Chart



Alarm Configuration

- Click Alarm Configuration link.
- In case that Report Alarms is OFF, all alarms will be disabled. In case that Report Alarm is ON, you can enable and disable individual alarms.



The screenshot shows the 'WiMAX RF - Microsoft Internet Explorer' window. The address bar shows the URL: <http://192.168.1.1/cgi-bin/html.cgi?function=alarm>. The left sidebar contains a navigation menu with the following items:

- # Logout
- # Status
- # RF Configuration
- # Alarm Configuration** (highlighted in blue)
- # Communications Configuration
- # User Management
- # Alarm Logs
- # Logs
- # Troubleshooting
- # Remote Software Upgrade
- # System Reset

The main content area is titled 'WiMAX 30dBm Indoor Repeater' and 'Alarm Configuration'. It contains the following fields:

- Cascade code: [Text input field]
- Serial No: [Text input field] (value: 0)
- S/W Version: [Text input field] (value: 0.0)
- Longitude/Latitude: [Text input field]

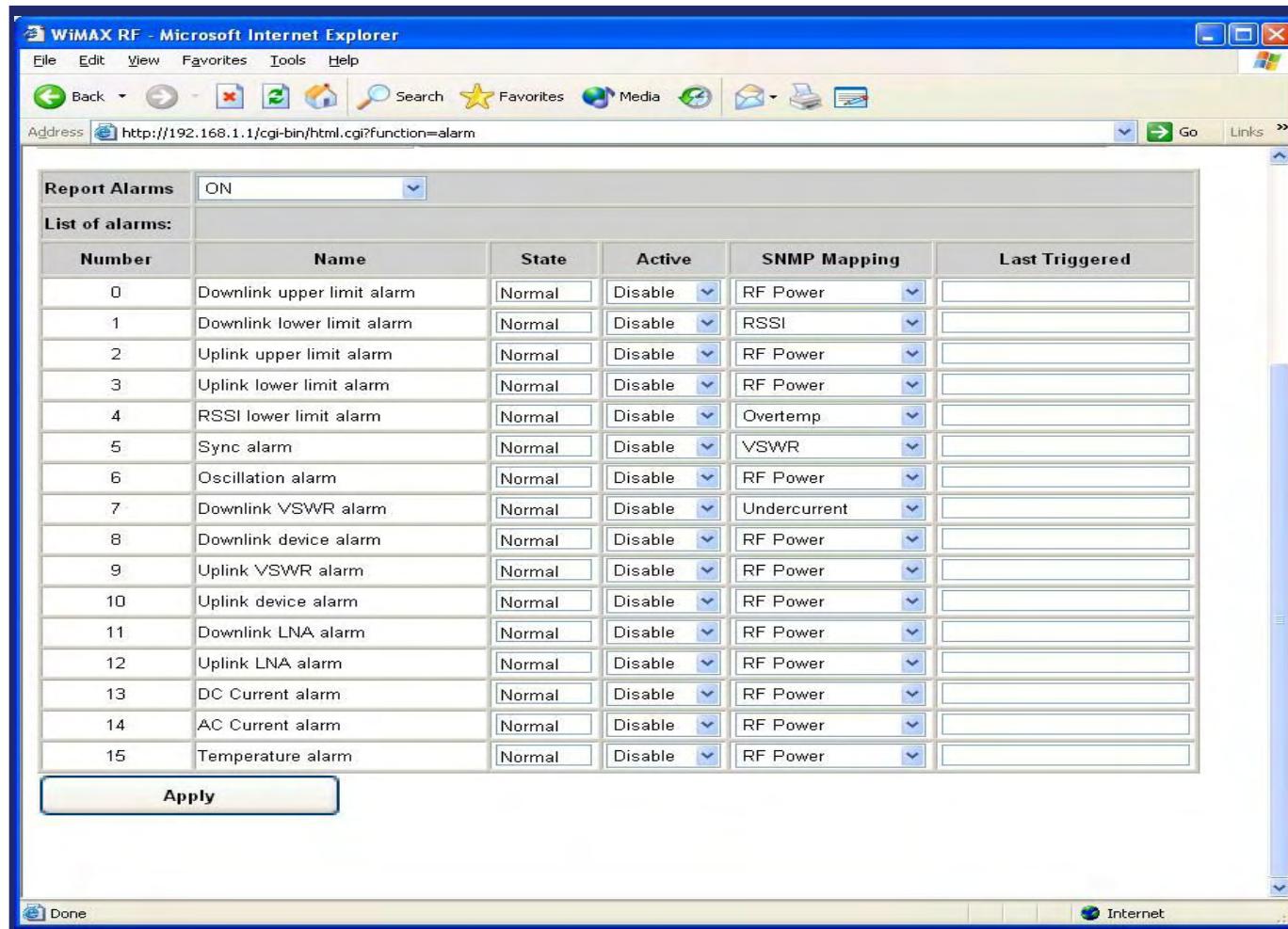
Below these fields is a table titled 'List of alarms:' with the following data:

Number	Name	State	Active	SNMP Mapping	Last Triggered
0	Downlink upper limit alarm	Normal	Disable	RF Power	
1	Downlink lower limit alarm	Normal	Disable	RSSI	
2	Uplink upper limit alarm	Normal	Disable	RF Power	
3	Uplink lower limit alarm	Normal	Disable	RF Power	
4	RSSI lower limit alarm	Normal	Disable	Overtemp	
5	Sync alarm	Normal	Disable	VSWR	
6	Oscillation alarm	Normal	Disable	RF Power	
7	Downlink VSWR alarm	Normal	Disable	Undercurrent	
8	Downlink device alarm	Normal	Disable	RF Power	
9	Uplink VSWR alarm	Normal	Disable	RF Power	
10	Uplink device alarm	Normal	Disable	RF Power	

At the bottom left of the table, there is a dropdown menu labeled 'Report Alarms' with the value 'ON'.

Alarm Configuration

- In case that screen resolution is 1024 x 768, you may need to use scroll bars to view all. Changes will not be made effective until you click “Apply” button.



WiMAX RF - Microsoft Internet Explorer

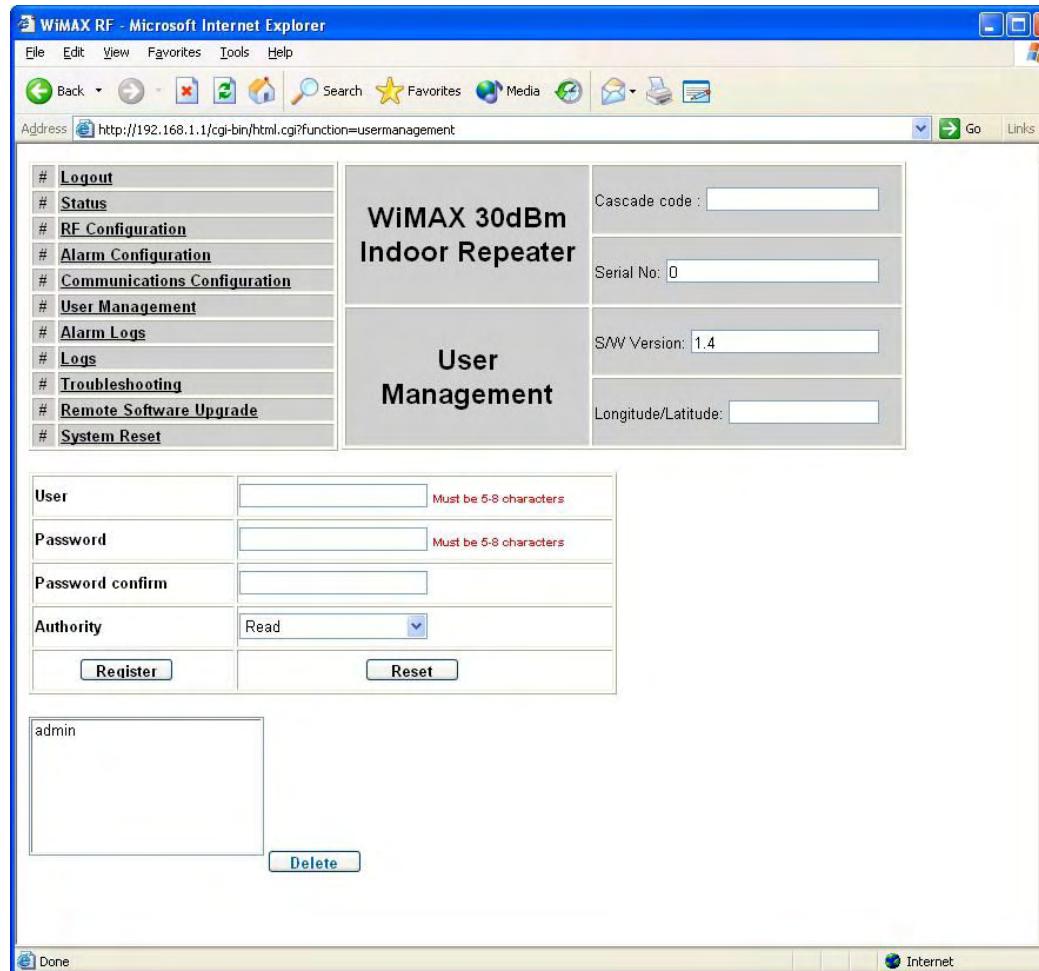
Report Alarms: ON

Number	Name	State	Active	SNMP Mapping	Last Triggered
0	Downlink upper limit alarm	Normal	Disable	RF Power	
1	Downlink lower limit alarm	Normal	Disable	RSSI	
2	Uplink upper limit alarm	Normal	Disable	RF Power	
3	Uplink lower limit alarm	Normal	Disable	RF Power	
4	RSSI lower limit alarm	Normal	Disable	Overtemp	
5	Sync alarm	Normal	Disable	VSWR	
6	Oscillation alarm	Normal	Disable	RF Power	
7	Downlink VSWR alarm	Normal	Disable	Undercurrent	
8	Downlink device alarm	Normal	Disable	RF Power	
9	Uplink VSWR alarm	Normal	Disable	RF Power	
10	Uplink device alarm	Normal	Disable	RF Power	
11	Downlink LNA alarm	Normal	Disable	RF Power	
12	Uplink LNA alarm	Normal	Disable	RF Power	
13	DC Current alarm	Normal	Disable	RF Power	
14	AC Current alarm	Normal	Disable	RF Power	
15	Temperature alarm	Normal	Disable	RF Power	

Apply

User Management

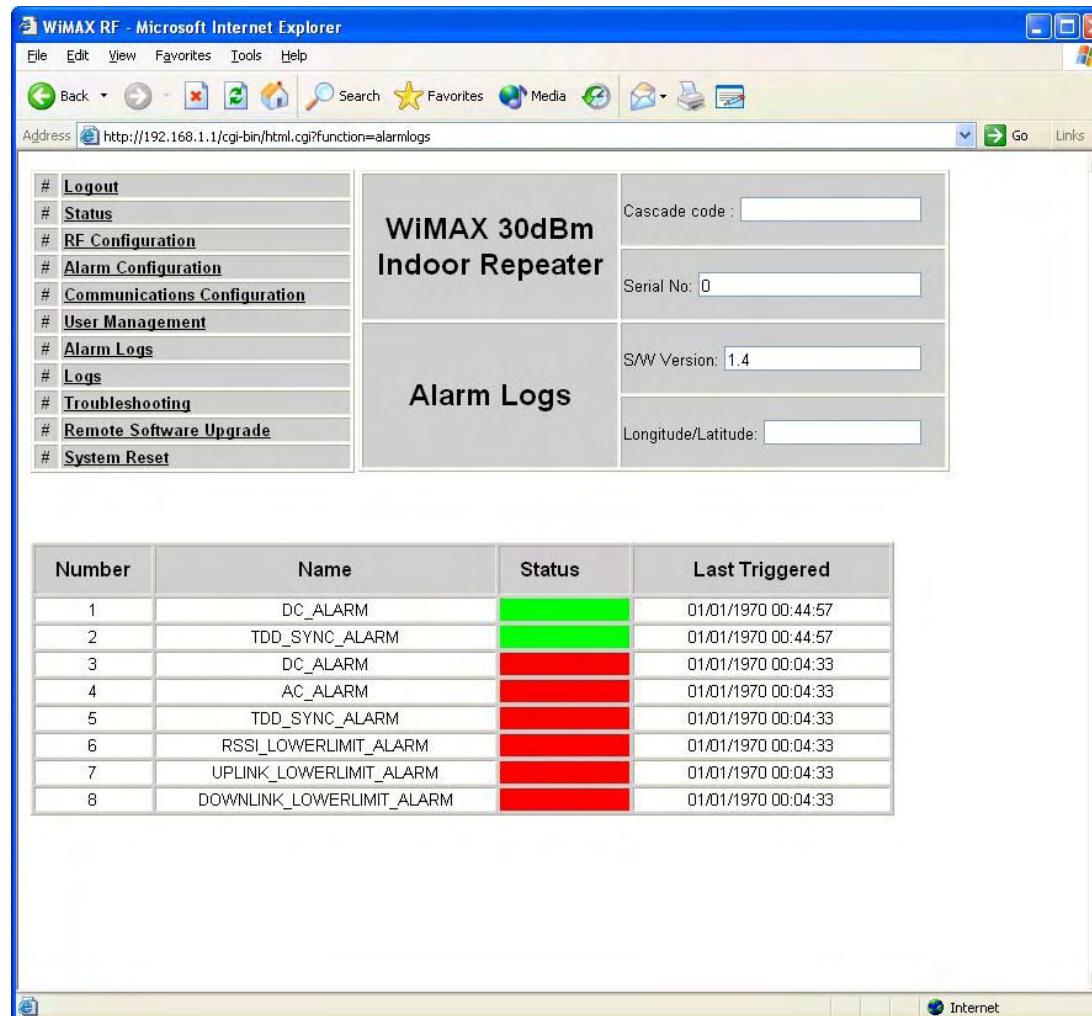
- Click on the User Management link.
- On this page you can create and delete users, change passwords, and assign authorities to individual users.
- Read/Write Authority means that the user can change various values.
- Super User is very similar to an Administrator account.
- **Caution: DO NOT DELETE 'admin'.**



The screenshot shows the 'User Management' page of a WiMAX RF device. The page is titled 'WiMAX 30dBm Indoor Repeater' and 'User Management'. It includes fields for 'Cascade code', 'Serial No.', 'S/W Version', and 'Longitude/Latitude'. Below this, there is a form for creating a new user, with fields for 'User' (containing 'admin'), 'Password', 'Password confirm', and 'Authority' (set to 'Read'). Buttons for 'Register' and 'Reset' are present. A list of existing users is shown in a table, with 'admin' listed and a 'Delete' button next to it. The browser title bar reads 'WiMAX RF - Microsoft Internet Explorer'.

Alarm Logs

- Click on the Alarm Logs link.
- You can see Alarm Logs regarding Web UI operation. Alarm Logs will maintain a history of up to 30 operations.

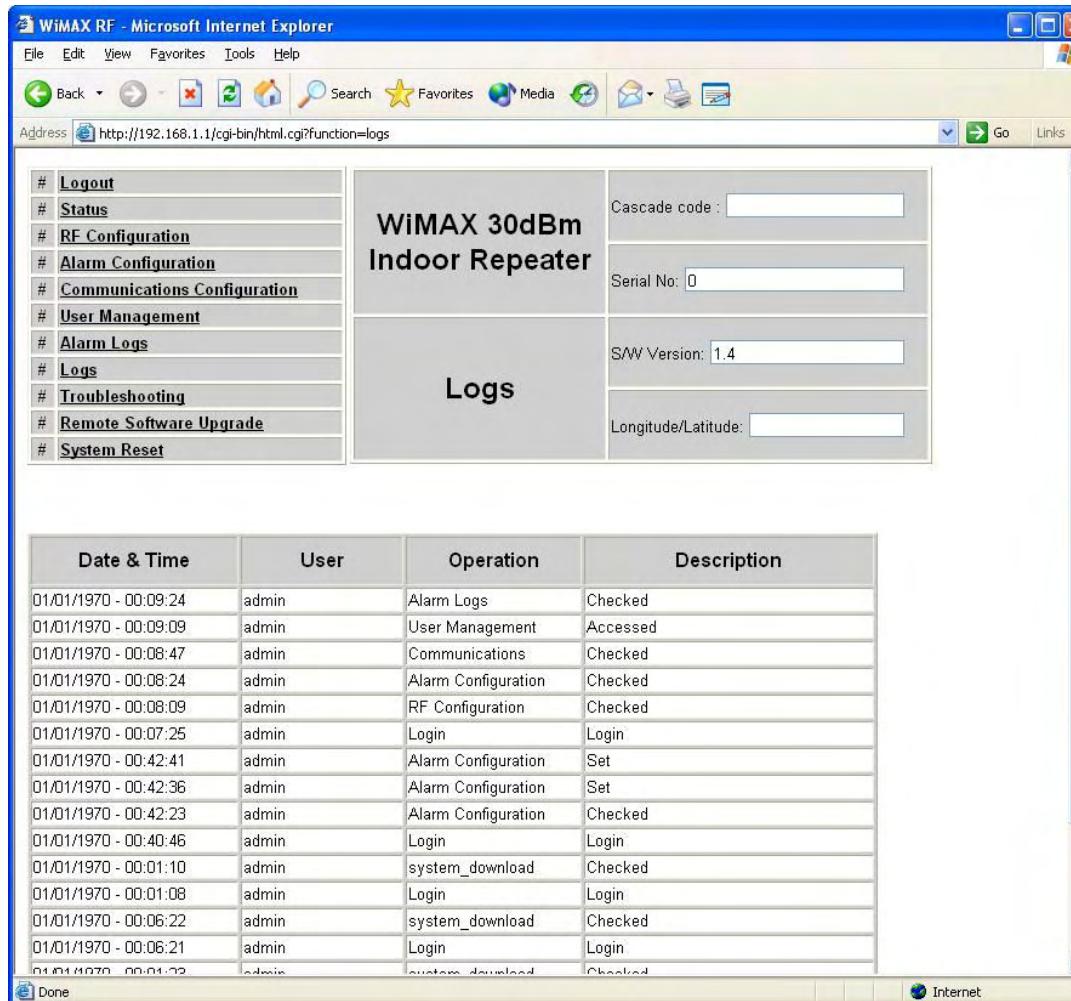


The screenshot shows a Microsoft Internet Explorer window with the title "WiMAX RF - Microsoft Internet Explorer". The address bar contains the URL "http://192.168.1.1/cgi-bin/html.cgi?function=alarmlogs". The left sidebar has a menu with the following items: Logout, Status, RF Configuration, Alarm Configuration, Communications Configuration, User Management, Alarm Logs (which is highlighted in blue), Logs, Troubleshooting, Remote Software Upgrade, and System Reset. The main content area is titled "WiMAX 30dBm Indoor Repeater". It contains four input fields: "Cascade code : [text box]", "Serial No: [text box] (value: 0)", "S/W Version: [text box] (value: 1.4)", and "Longitude/Latitude: [text box]". Below this is a section titled "Alarm Logs" which contains a table with 8 rows of alarm data. The table has columns: Number, Name, Status, and Last Triggered. The "Status" column uses color coding: green for rows 1 and 2, and red for rows 3 through 8. The "Last Triggered" column shows the date and time as "01/01/1970 00:44:57" for rows 1 and 2, and "01/01/1970 00:04:33" for rows 3 through 8.

Number	Name	Status	Last Triggered
1	DC_ALARM	Green	01/01/1970 00:44:57
2	TDD_SYNC_ALARM	Green	01/01/1970 00:44:57
3	DC_ALARM	Red	01/01/1970 00:04:33
4	AC_ALARM	Red	01/01/1970 00:04:33
5	TDD_SYNC_ALARM	Red	01/01/1970 00:04:33
6	RSSI_LOWERLIMIT_ALARM	Red	01/01/1970 00:04:33
7	UPLINK_LOWERLIMIT_ALARM	Red	01/01/1970 00:04:33
8	DOWNLINK_LOWERLIMIT_ALARM	Red	01/01/1970 00:04:33

Logs

- Click on the Logs link.
- You can see Logs regarding Web UI operation. Logs will maintain a history of up to 30 operations.



The screenshot shows a Microsoft Internet Explorer window with the title "WiMAX RF - Microsoft Internet Explorer". The address bar shows the URL <http://192.168.1.1/cgi-bin/html.cgi?function=logs>. On the left, there is a vertical menu with the following items:

- # Logout
- # Status
- # RF Configuration
- # Alarm Configuration
- # Communications Configuration
- # User Management
- # Alarm Logs
- # Logs**
- # Troubleshooting
- # Remote Software Upgrade
- # System Reset

The main content area is titled "WiMAX 30dBm Indoor Repeater" and contains the following fields:

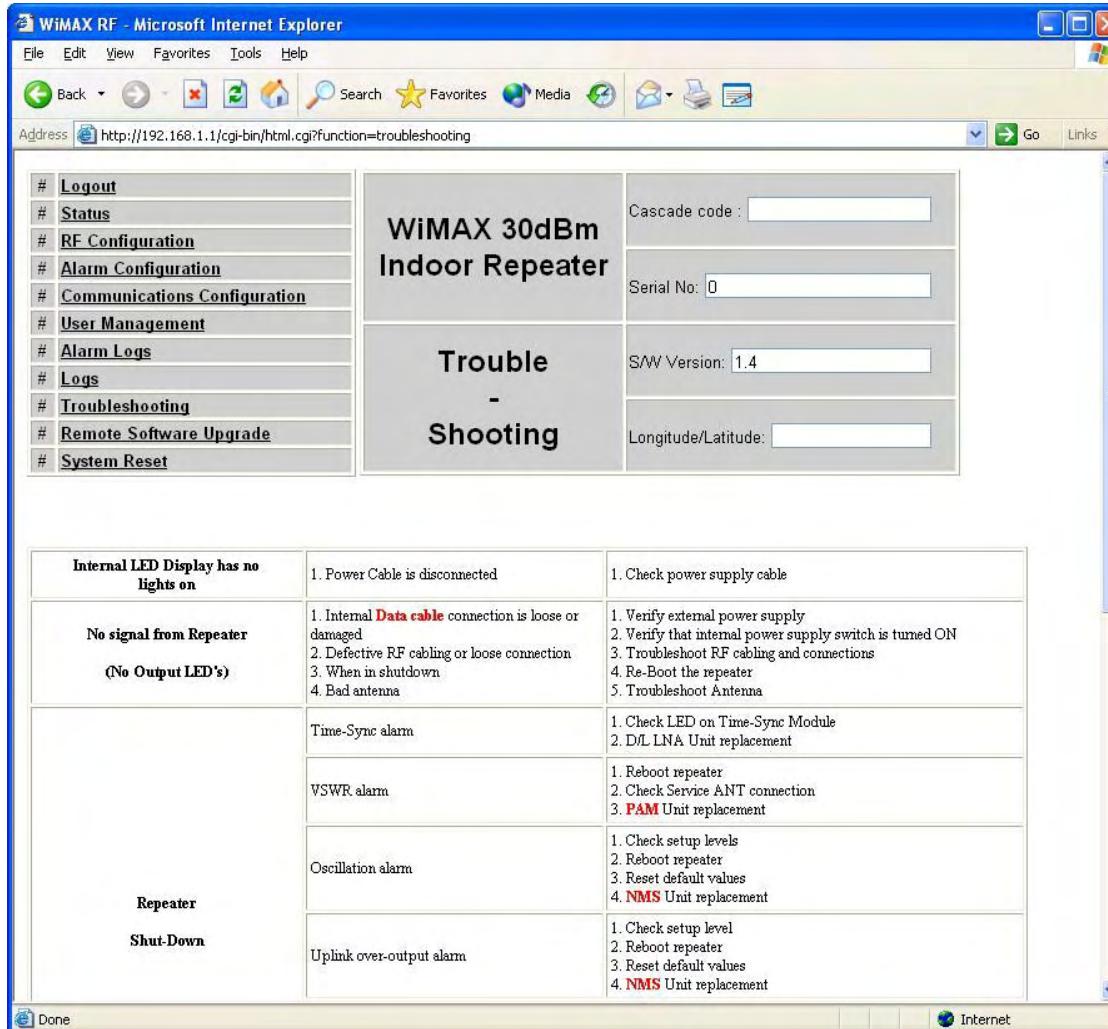
- Cascade code:
- Serial No: 0
- S/W Version: 1.4
- Longitude/Latitude:

A large button labeled "Logs" is centered in the main content area. Below the main content area is a table titled "Logs" showing a history of operations:

Date & Time	User	Operation	Description
01/01/1970 - 00:09:24	admin	Alarm Logs	Checked
01/01/1970 - 00:09:09	admin	User Management	Accessed
01/01/1970 - 00:08:47	admin	Communications	Checked
01/01/1970 - 00:08:24	admin	Alarm Configuration	Checked
01/01/1970 - 00:08:09	admin	RF Configuration	Checked
01/01/1970 - 00:07:25	admin	Login	Login
01/01/1970 - 00:42:41	admin	Alarm Configuration	Set
01/01/1970 - 00:42:36	admin	Alarm Configuration	Set
01/01/1970 - 00:42:23	admin	Alarm Configuration	Checked
01/01/1970 - 00:40:46	admin	Login	Login
01/01/1970 - 00:01:10	admin	system_download	Checked
01/01/1970 - 00:01:08	admin	Login	Login
01/01/1970 - 00:06:22	admin	system_download	Checked
01/01/1970 - 00:06:21	admin	Login	Login
01/01/1970 - 00:01:02	admin	system_download	Checked

Troubleshooting Guide

- Click on the Troubleshooting link.
- You can refer to this page for a general troubleshooting guide.
- In case that screen resolution is 1024 x 768, you may need to use scroll bars to view all.



The screenshot shows a Microsoft Internet Explorer window with the title "WiMAX RF - Microsoft Internet Explorer". The address bar contains the URL "http://192.168.1.1/cgi-bin/html.cgi?function=troubleshooting".

The left sidebar contains a navigation menu with the following items:

- # Logout
- # Status
- # RF Configuration
- # Alarm Configuration
- # Communications Configuration
- # User Management
- # Alarm Logs
- # Logs
- # Troubleshooting**
- # Remote Software Upgrade
- # System Reset

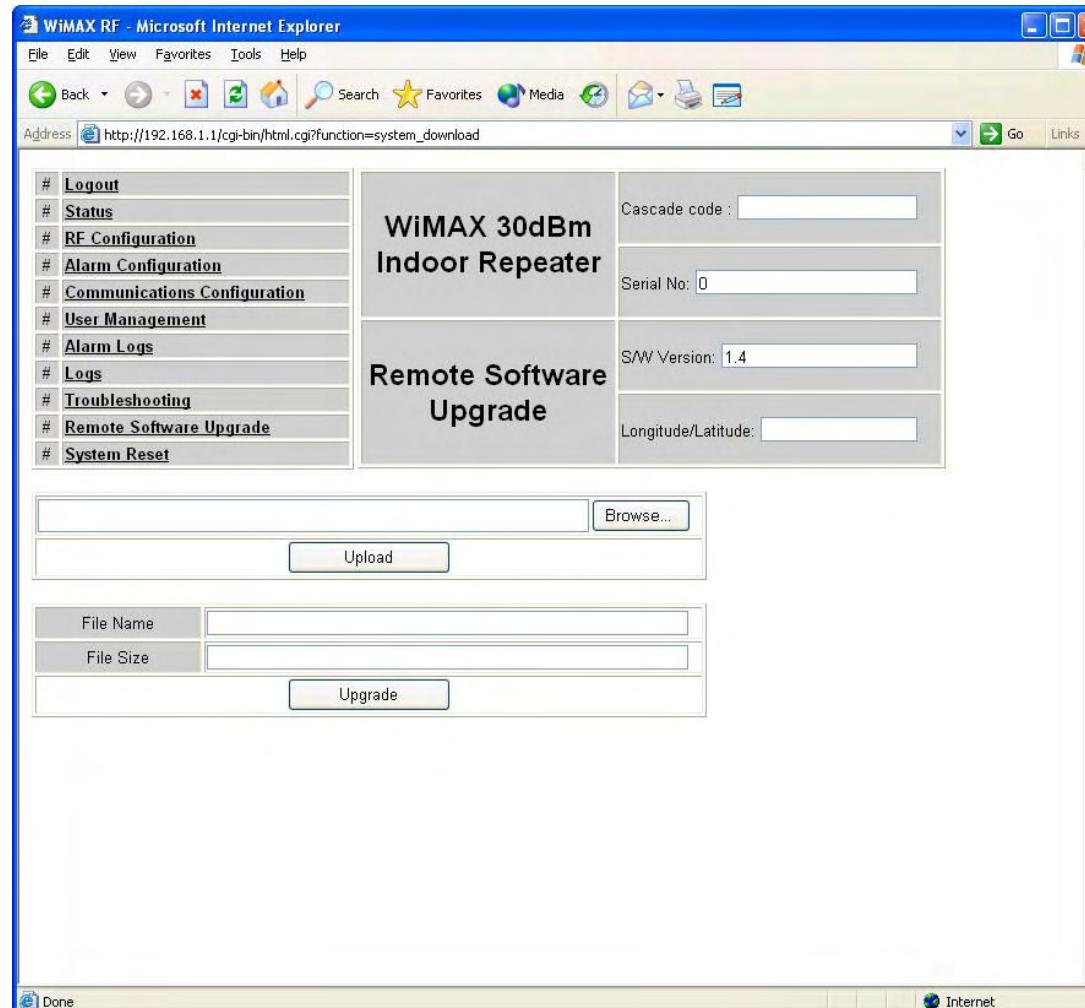
The main content area is titled "WiMAX 30dBm Indoor Repeater" and "Trouble - Shooting". It includes fields for "Cascade code", "Serial No.", "S/W Version", and "Longitude/Latitude".

Below this, there is a table listing troubleshooting steps for various alarms:

Alarm Description	1. Power Cable is disconnected	1. Check power supply cable
No signal from Repeater (No Output LED's)	1. Internal Data cable connection is loose or damaged 2. Defective RF cabling or loose connection 3. When in shutdown 4. Bad antenna	1. Verify external power supply 2. Verify that internal power supply switch is turned ON 3. Troubleshoot RF cabling and connections 4. Re-Boot the repeater 5. Troubleshoot Antenna
Repeater	Time-Sync alarm	1. Check LED on Time-Sync Module 2. D/L LNA Unit replacement
	VSWR alarm	1. Reboot repeater 2. Check Service ANT connection 3. PAM Unit replacement
	Oscillation alarm	1. Check setup levels 2. Reboot repeater 3. Reset default values 4. NMS Unit replacement
	Shut-Down	1. Check setup level 2. Reboot repeater 3. Reset default values 4. NMS Unit replacement
Uplink over-output alarm		

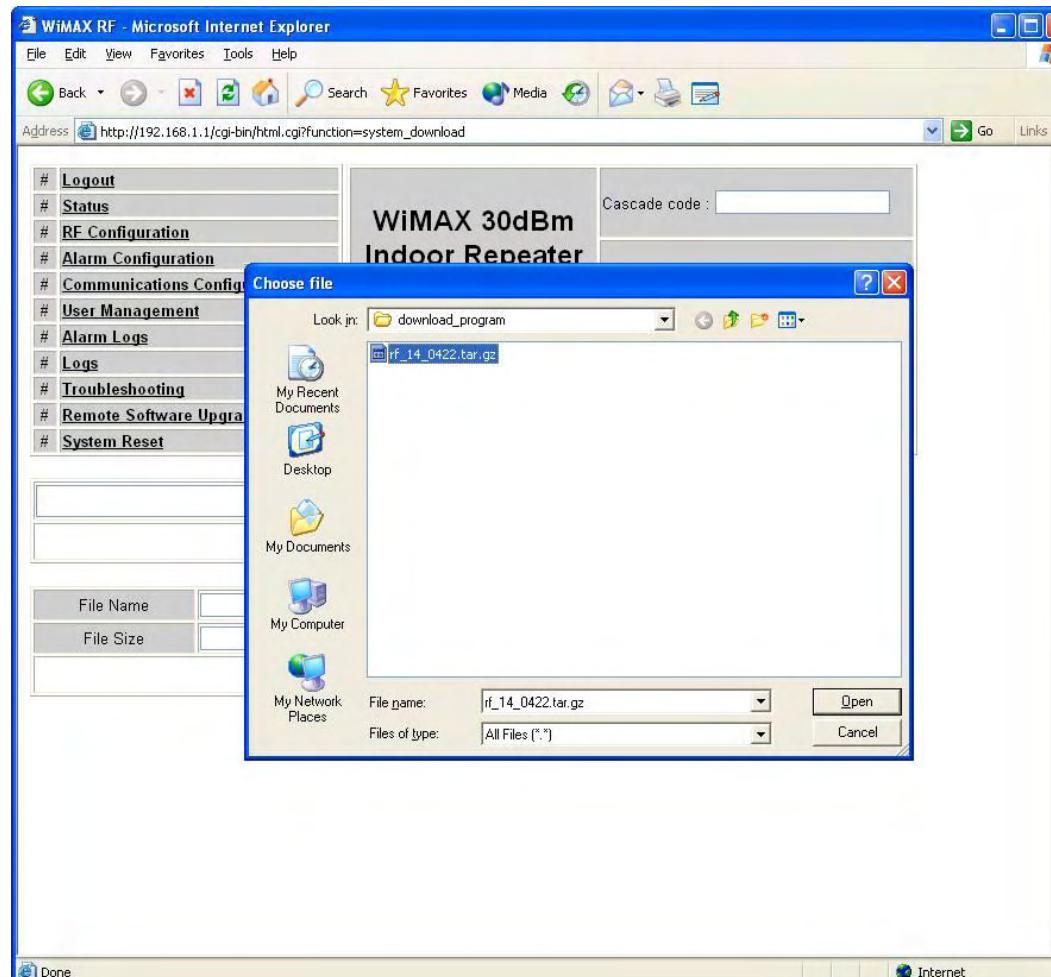
Software Upgrade

- Click on the Remote Software Upgrade link.
- In case that software upgrade is needed, you should use this page.
- Click Browse button to select the file to upgrade from the laptop.



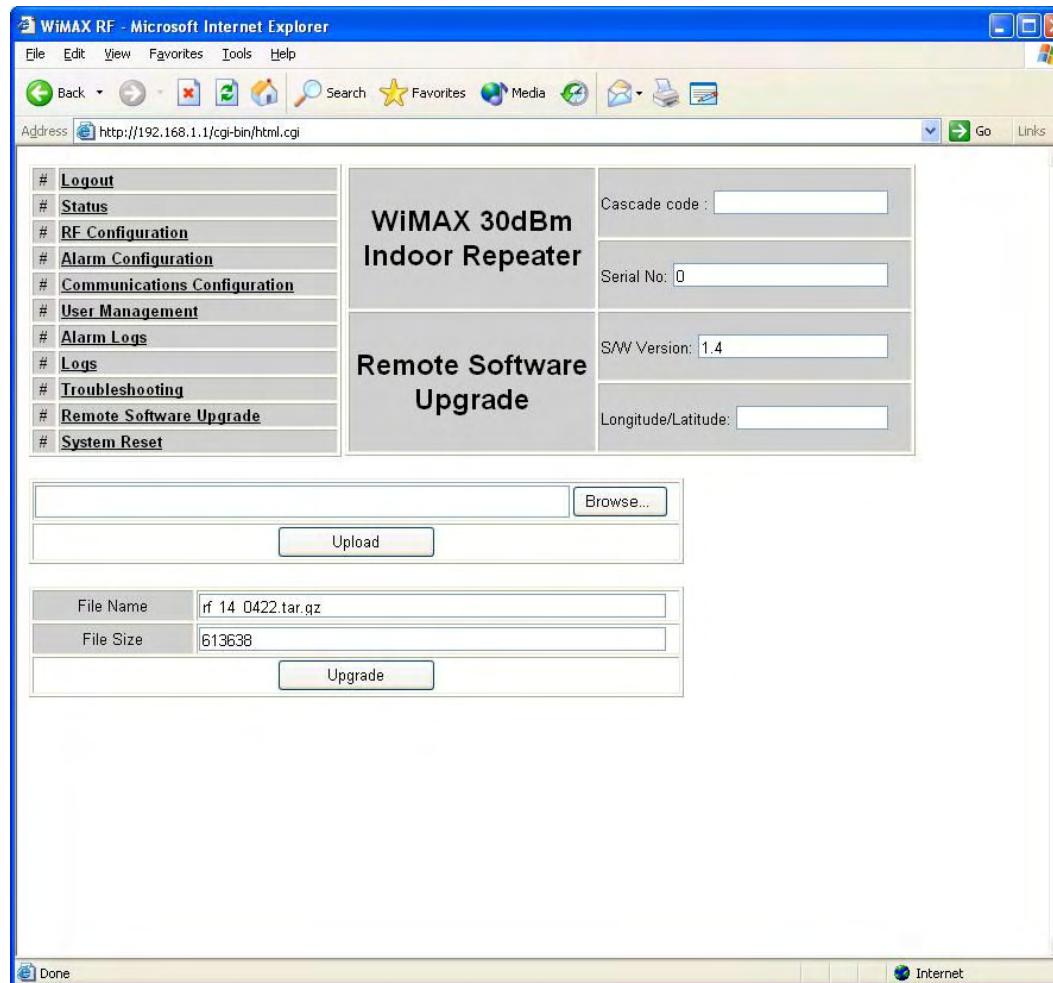
Software Upgrade

- Choose the file to upgrade provided by GST. After you choose the file, click “upload” to send the file from your laptop to the Repeater.
- Be careful not to unplug the crossover Ethernet cable during software upgrade.



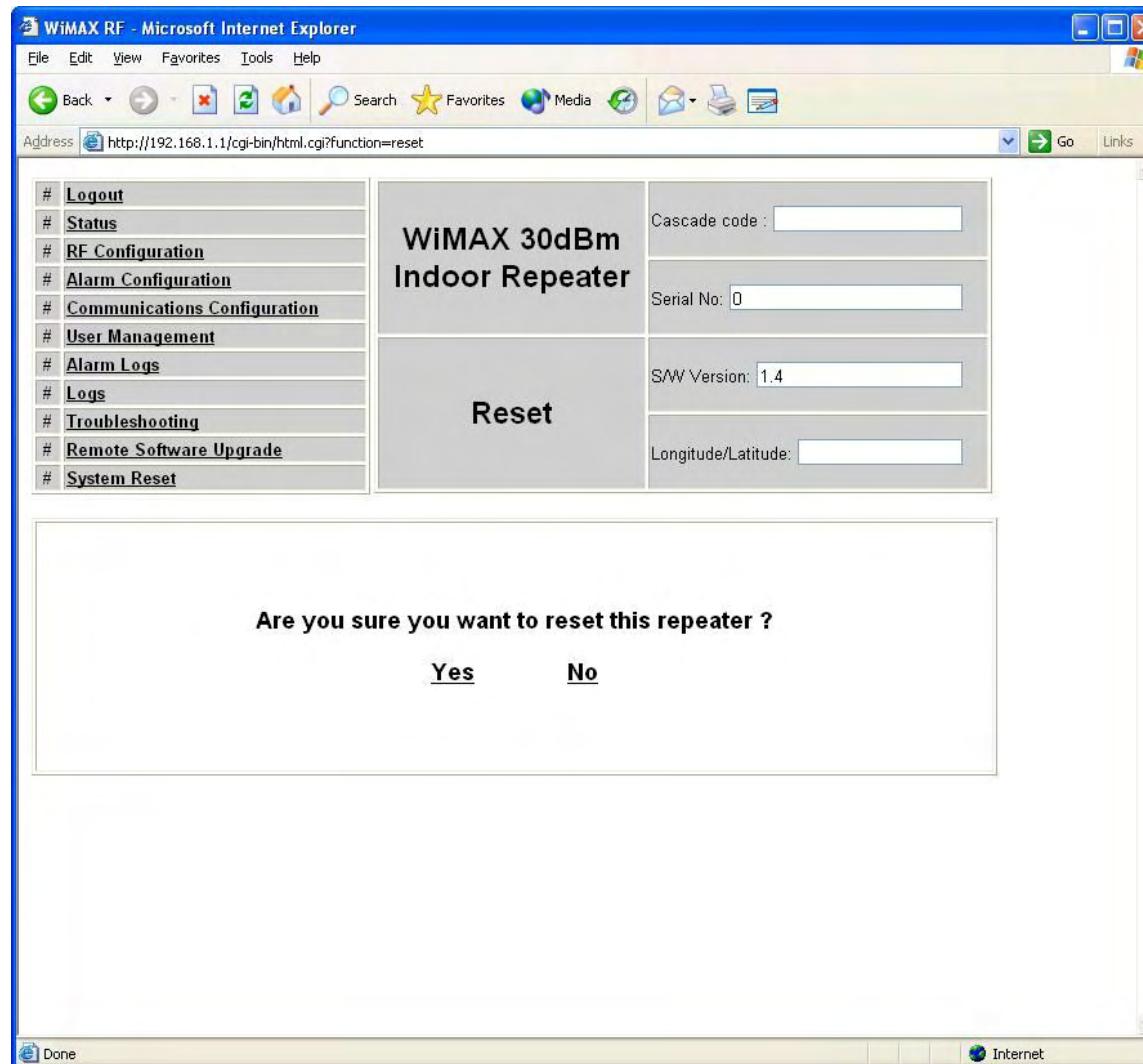
Software Upgrade

- After uploading is finished, verify that the File Name and the File Size is correct, click “Upgrade” button. Installer should wait about 2 minutes for upgrade to initialize.
- User may then be prompted to log back in to the Repeater.



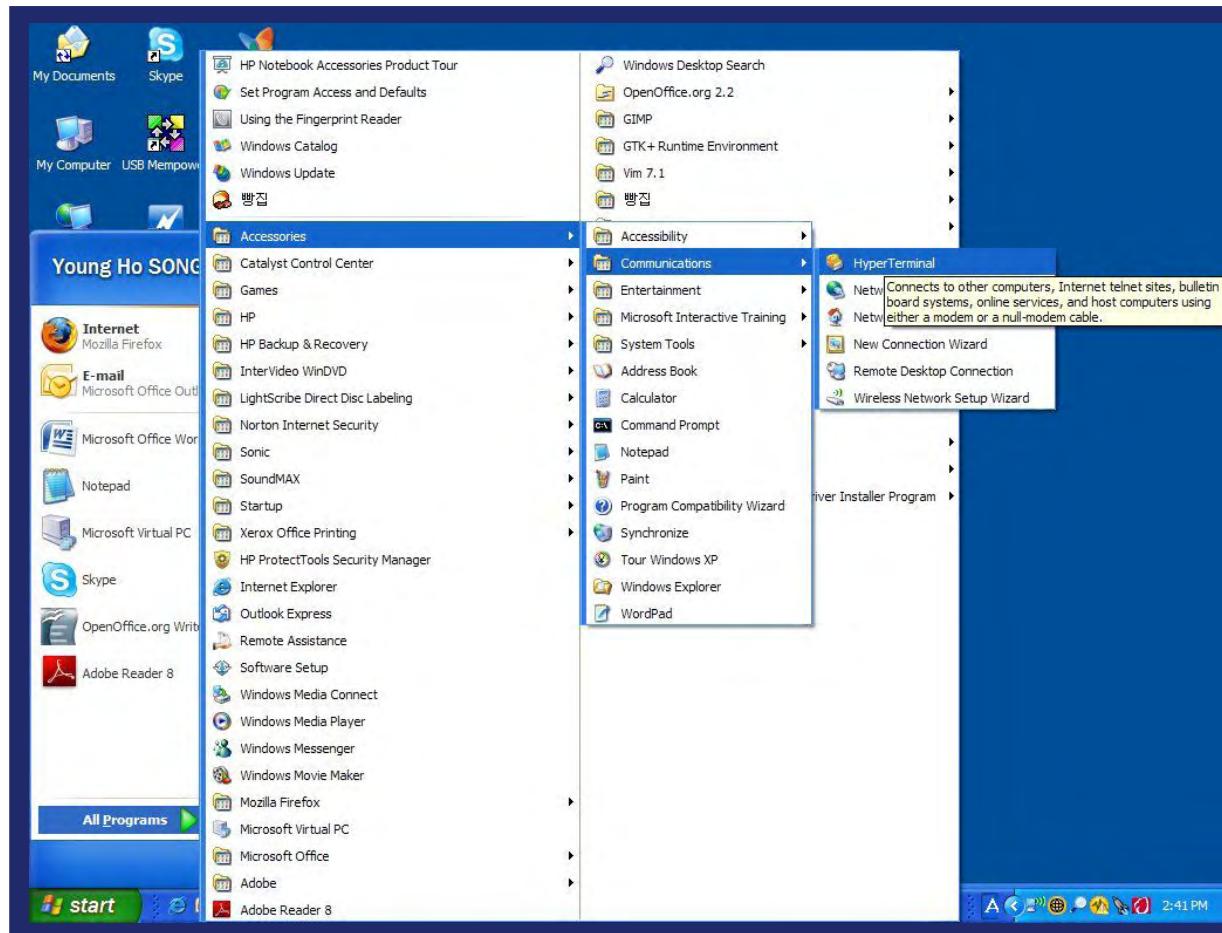
Software Reset

- A software reset is a “soft reboot” of the repeater. To reset the software, click on ‘Software Reset’ and then click ‘Yes’ to reset the software.
- Resetting the software is a good way to clear current alarms.



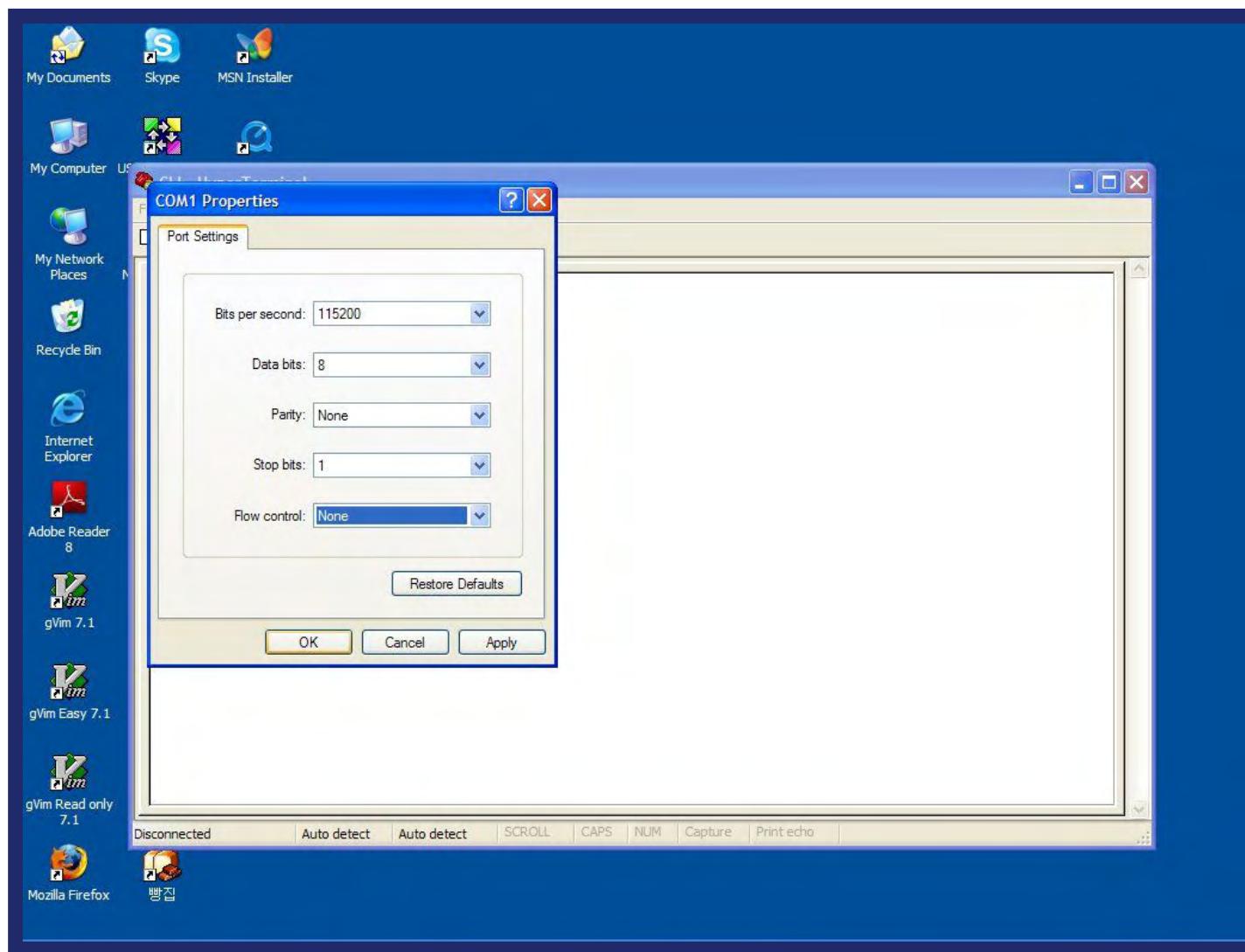
CLI (Command Line Interface)

- In case that you cannot reach Web UI, you should use CLI. Connect the Repeater's CLI port to your laptop's serial port using RS-232 cable. In case that your laptop does not have a serial port, you may need to use USB to Serial conversion cable. Caution: RS-232 cable or USB to Serial conversion cable is not provided with the equipment. After connection, you can access CLI using HyperTerminal.
- To open HyperTerminal, click "Start", then "Accessories", then "Communications", then "HyperTerminal".



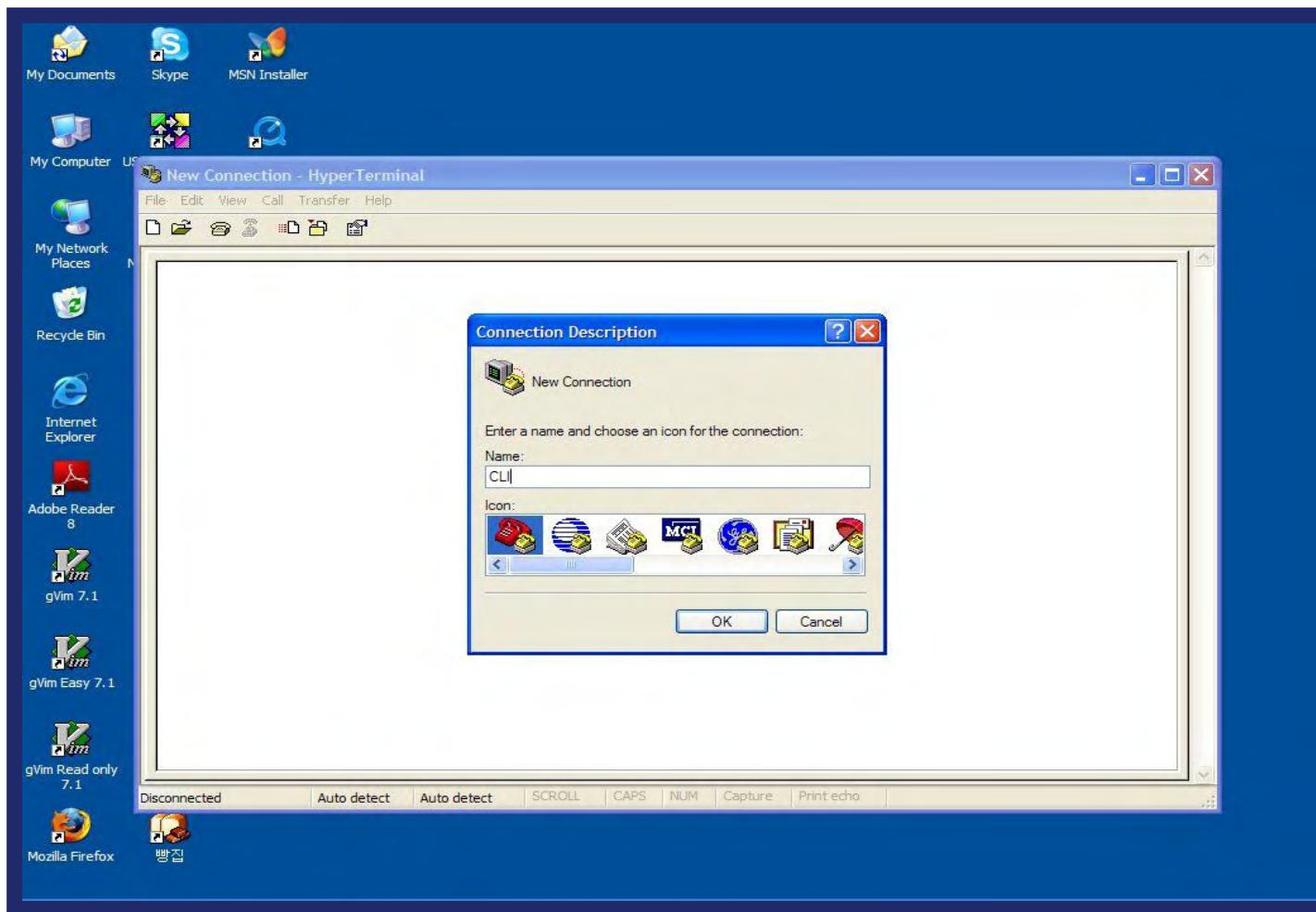
CLI

- “Bit per second” drop down menu, select “115200”.
- “Flow control” drop down menu, select “None”.
- Click “Apply”.
- Click “OK”.



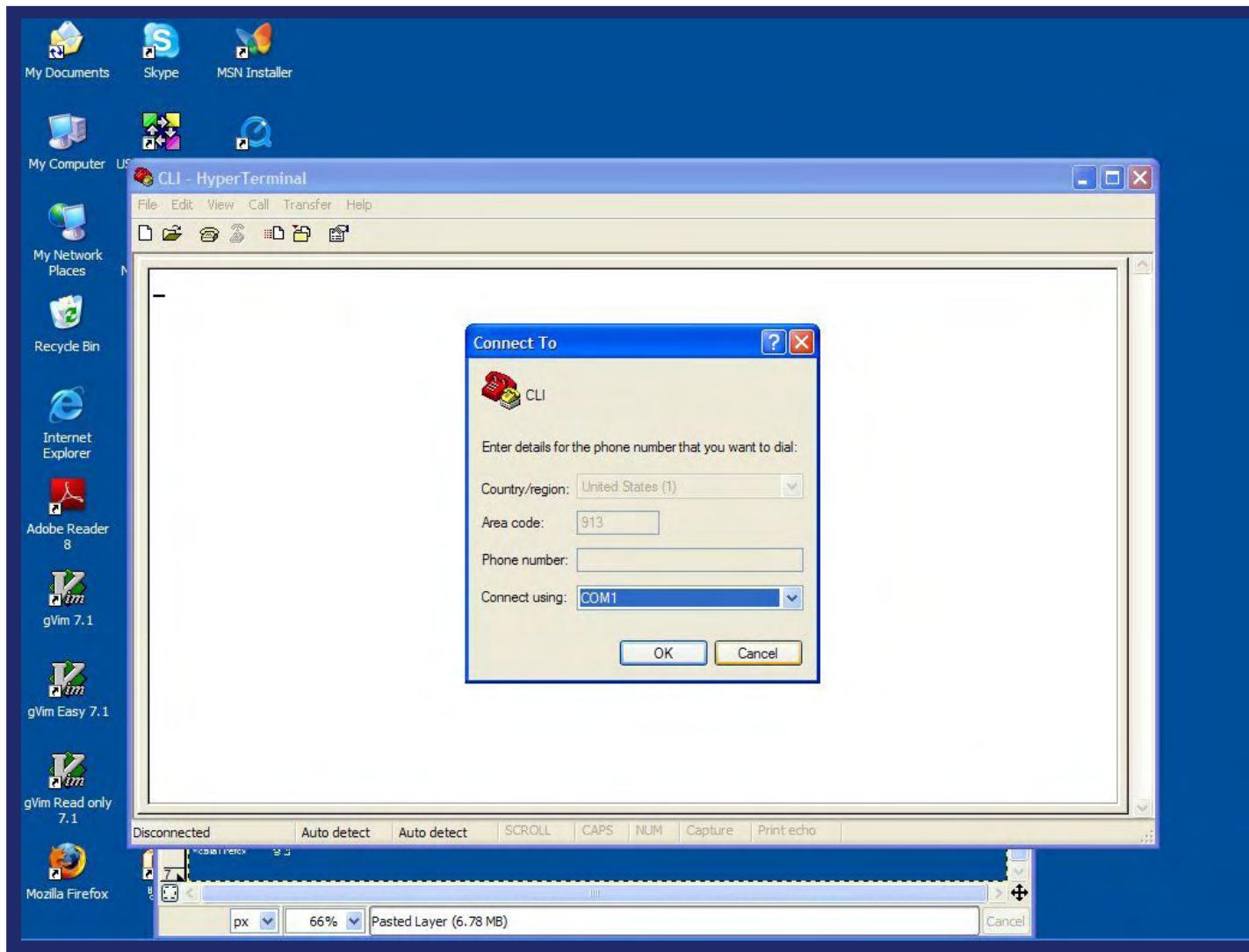
CLI

- To verify and/or change port number, open “Control Panel”, then “System”, then “Hardware Tab”, then “Device Manager”. Double click “Ports”, then double click “Serial Cable” then click “Port Settings” tab, click “Advanced”, in the COM Port drop down menu, select “COM 1”, click “OK”.
- After verification of port number, open HyperTerminal.
- Enter CLI.
- Click “OK”.



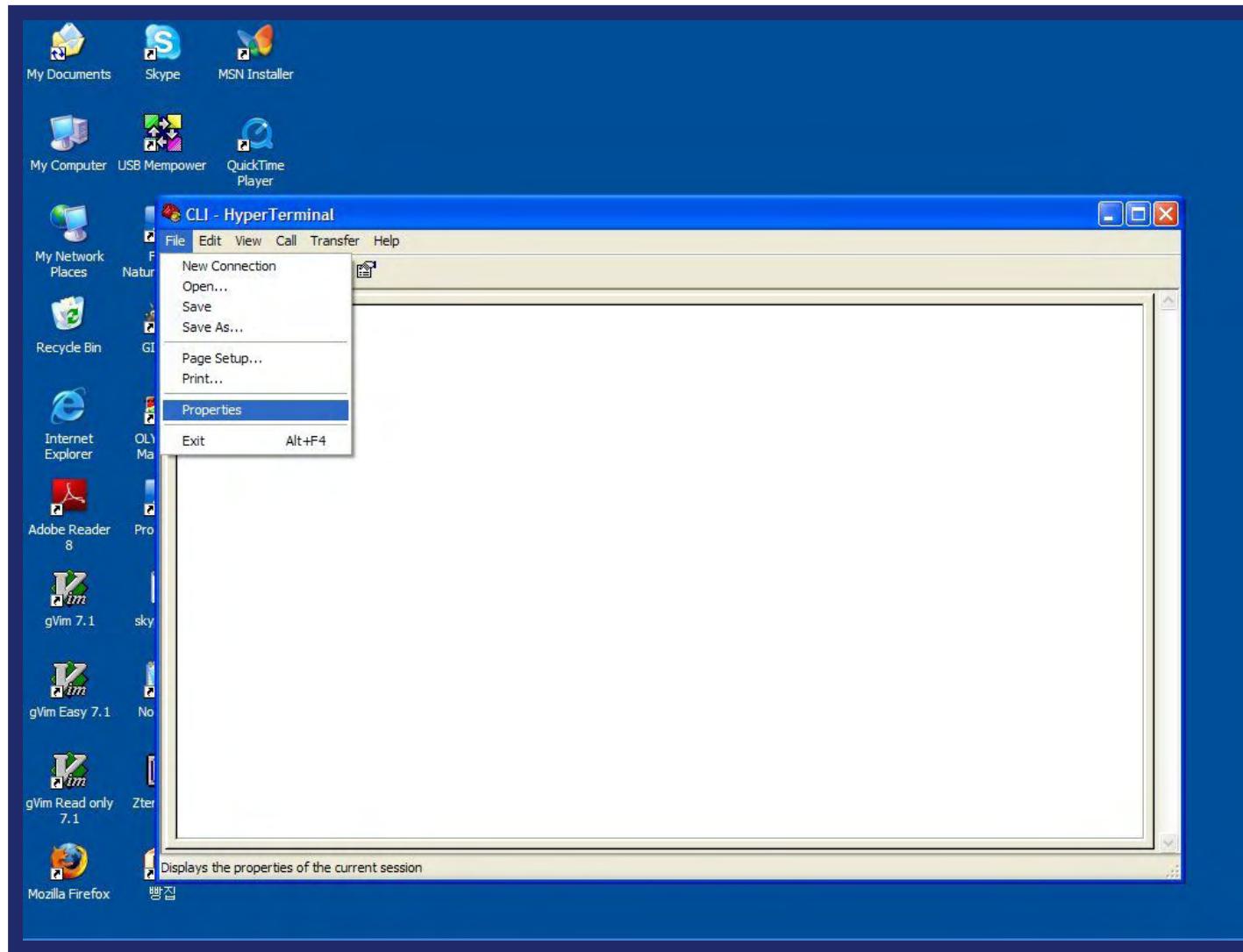
CLI

- In the “Connect using” drop-down menu, select “COM1”.
- Click “OK”.



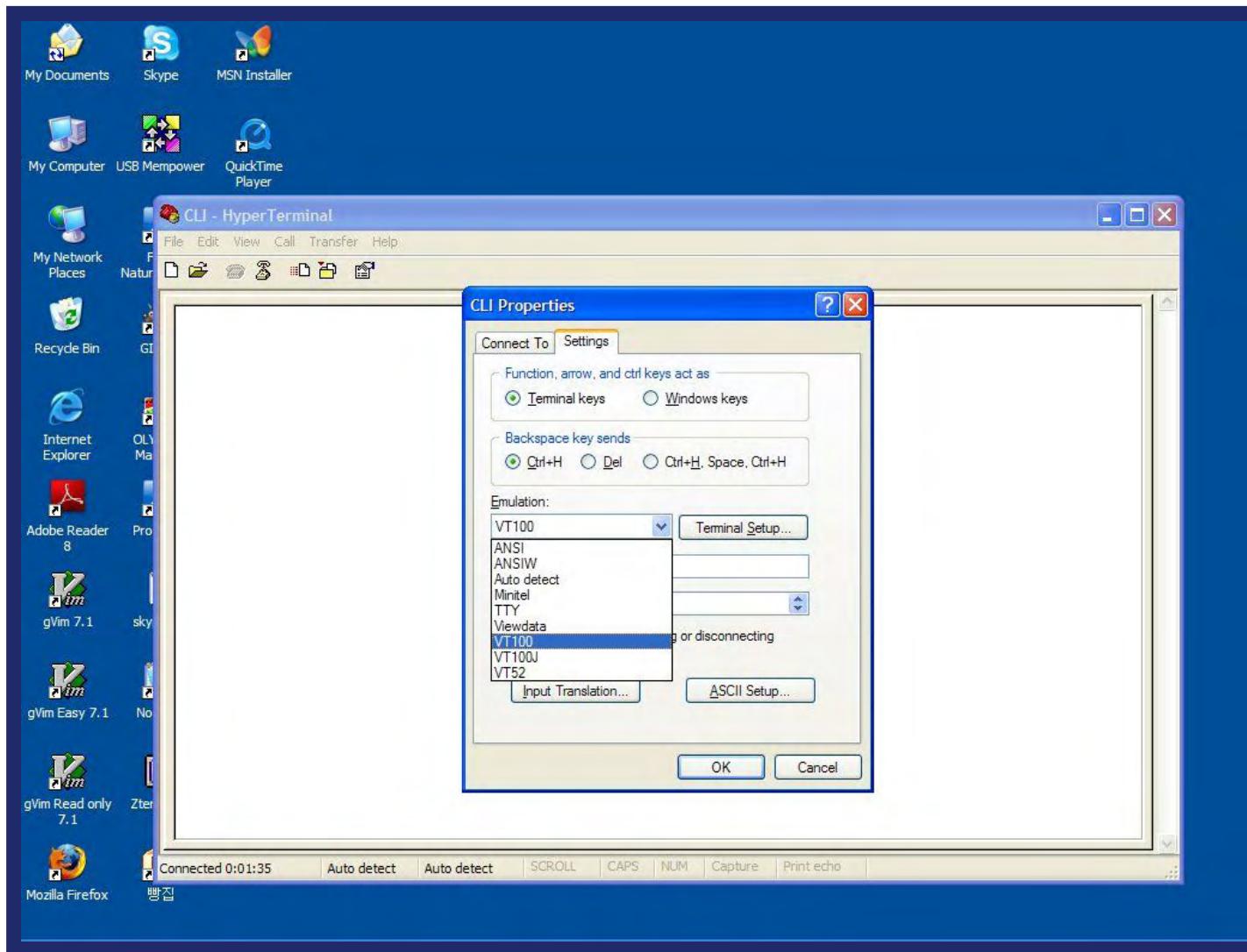
CLI

- Click “File”, choose “Properties”



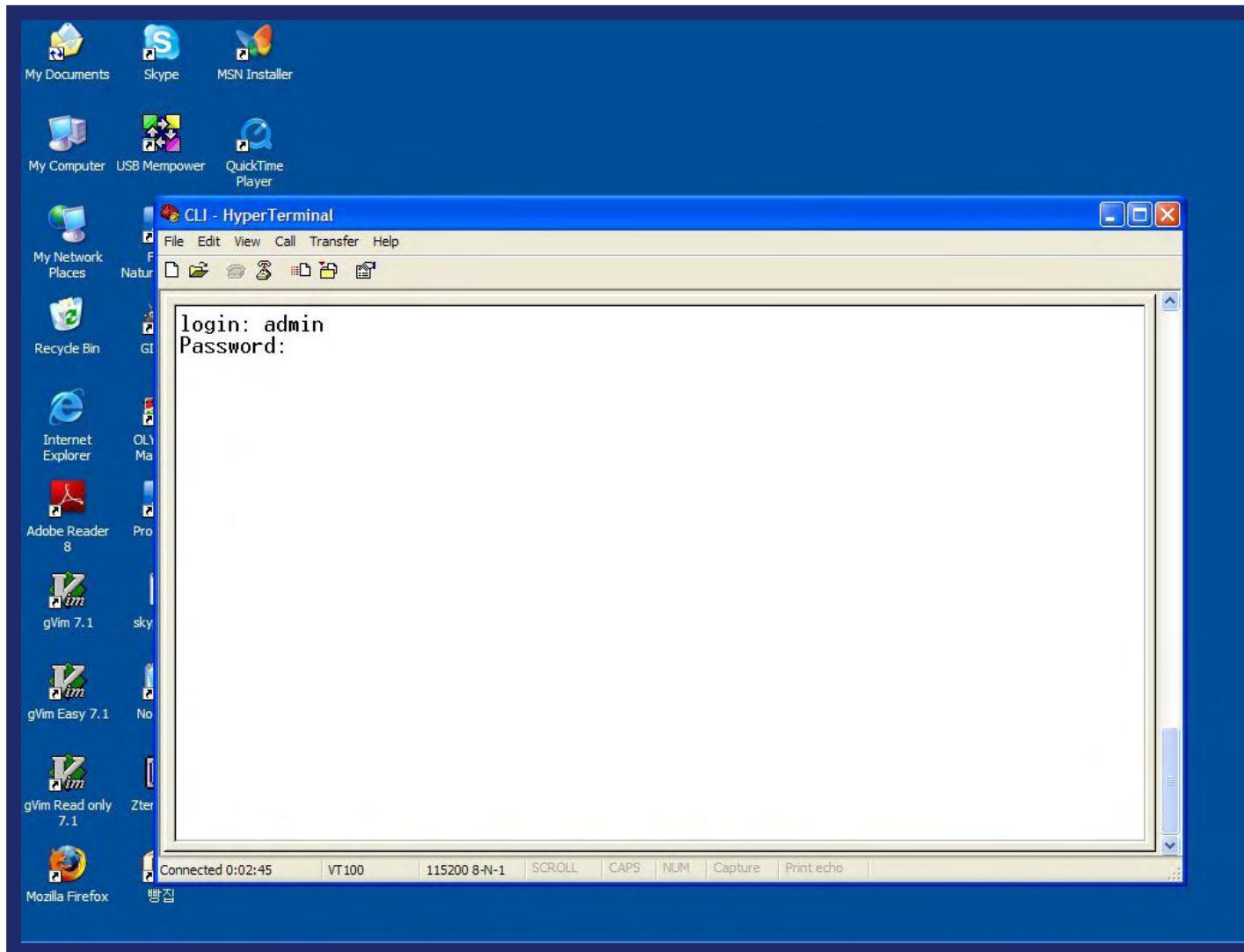
CLI

- On “Settings” tab
- “Emulation” drop down menu, select “VT100”
- Click “OK”



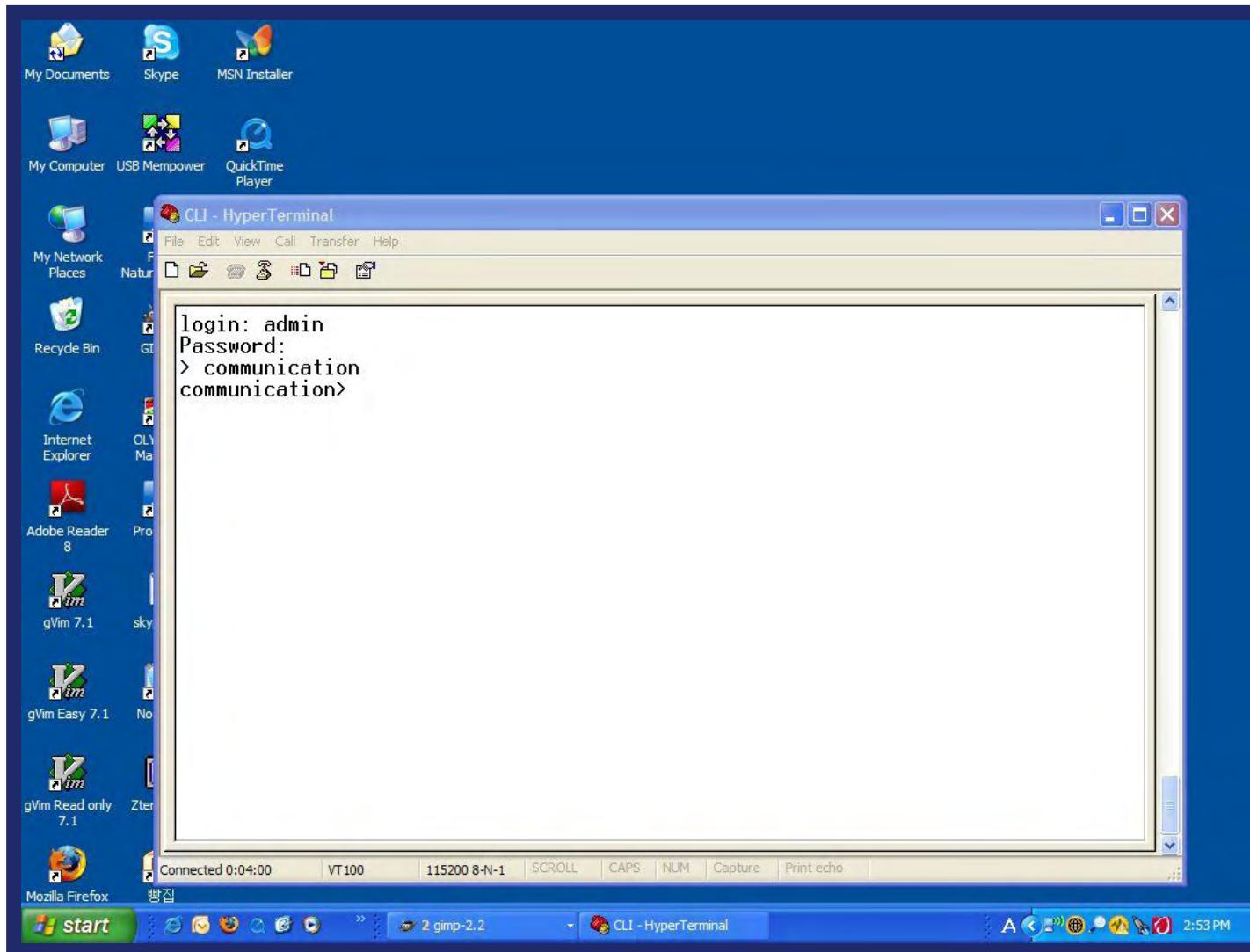
CLI

- In case that you cannot see login prompt, just press enter key several times.
Login is “admin” and Password is “admin”.



CLI

- In order to verify IP network configuration, you should type “communication”.
- Press enter-key.



CLI

- In order to see values, you should type “get all”, and then press Enter-key.
- You can use LAN_Port_IP_Address to access Web UI as described page 17.
- In case DHCP_Server is OFF, after “communication>” enter the following text : “set DHCP_Server ON”, then press enter-key.
- Then enter “commit” text, then press enter-key.



CLI - HyperTerminal

File Edit View Cal Transfer Help

```
login: admin
Password:
> communication
communication> get all
LAN_port_IP_address: 192.168.1.1
Obtain_an_IP_Address_automatically: STATIC
IP_Address: 192.168.1.1
Netmask: 255.255.255.0
Gateway: 192.168.1.2
DNS_Server:
DHCP_Server: OFF
communication> set Obtain_an_IP_Address_automatically DHCP
Obtain_an_IP_Address_automatically: DHCP
communication> set DHCP_Server ON
DHCP_Server: ON
communication> commit_
```

- DHCP ON: Repeater would provide IP address to notebook computer as a DHCP server.
- DHCP OFF: Static IP address will be assigned to repeater.
- Dynamic: Repeater would set to receive IP address from external network equipment.

MPE Information

	<p>Warning: Exposure to Radio Frequency Radiation The radiated output power of this device is far below the FCC radio frequency exposure limits. Nevertheless, the device should be used in such a manner that the potential for human contact during normal operation is minimized. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna should not be less than 40cm during normal operation. The gain of the antenna is 12 dBi. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.</p>
---	---