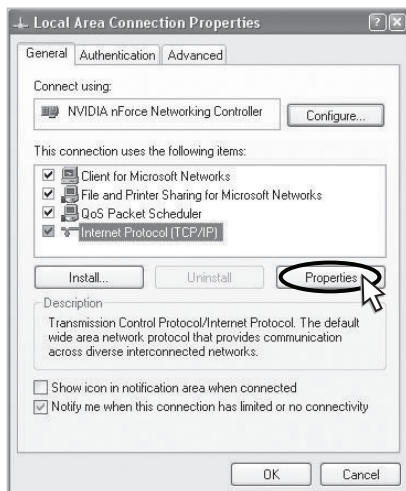
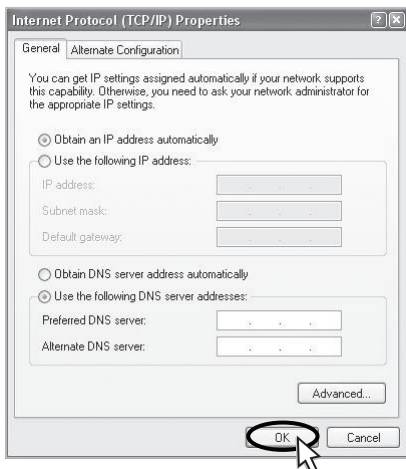


4. Operation >>

Step 4 Select **Internet Protocol (TCP/IP)** and click **Properties**.



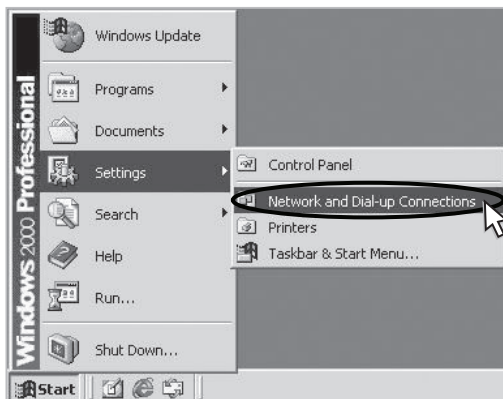
Step 5 Check **Obtain an IP address automatically** and click **OK**.



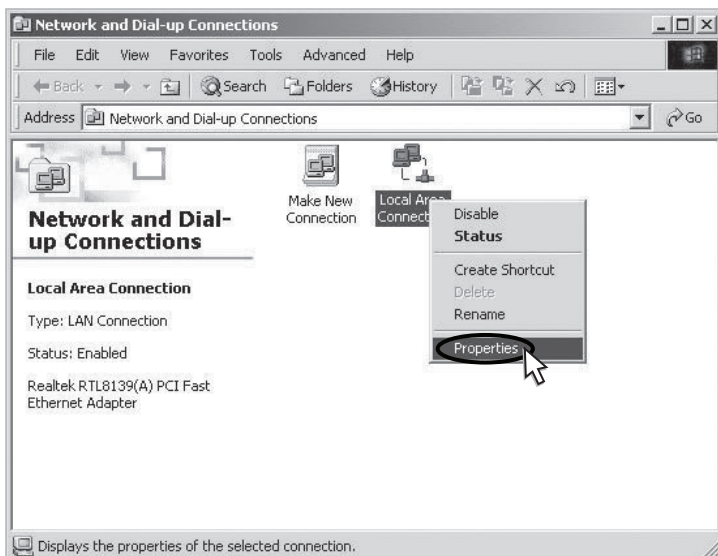
Step 6 Close all windows.

4.3.2 Windows 2000

- Step 1** Click the **Start** button, point to **Settings**, and then click **Network and Dial-up Connections**.

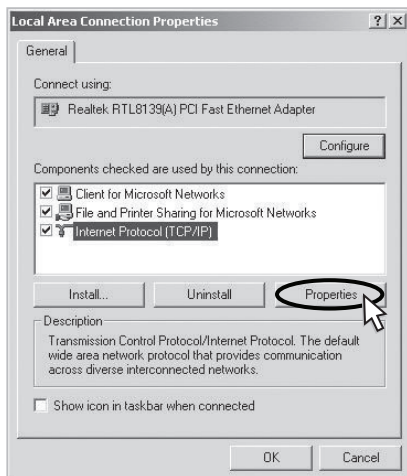


- Step 2** Right-click **Local Area Connection** to see a shortcut menu and click **Properties**.

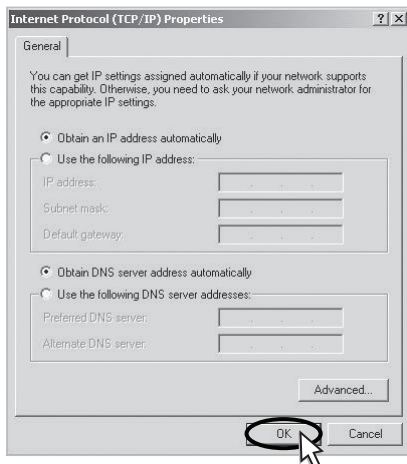


4. Operation ➤

Step 3 Select **Internet Protocol (TCP/IP)** and click **Properties**.



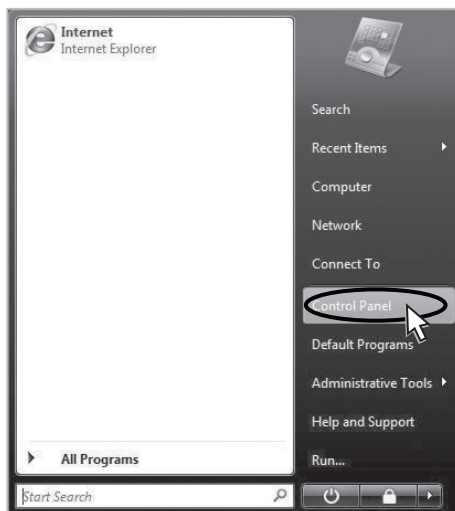
Step 4 Check **Obtain an IP address automatically** and click **OK**.



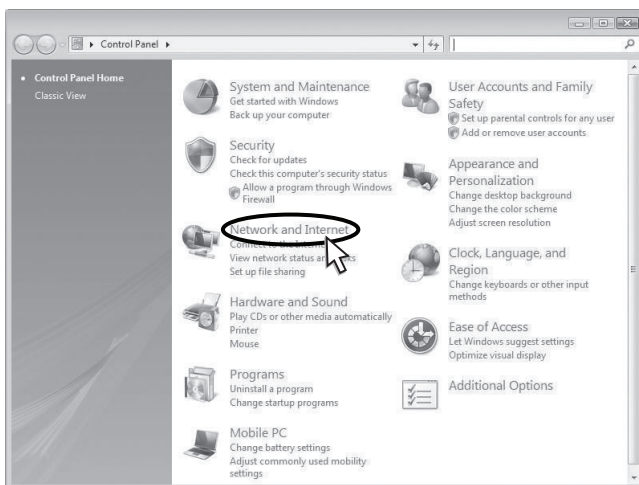
Step 5 Close all windows.

4.3.3 Windows Vista

Step 1 Click the **Start** button and **Control Panel**.

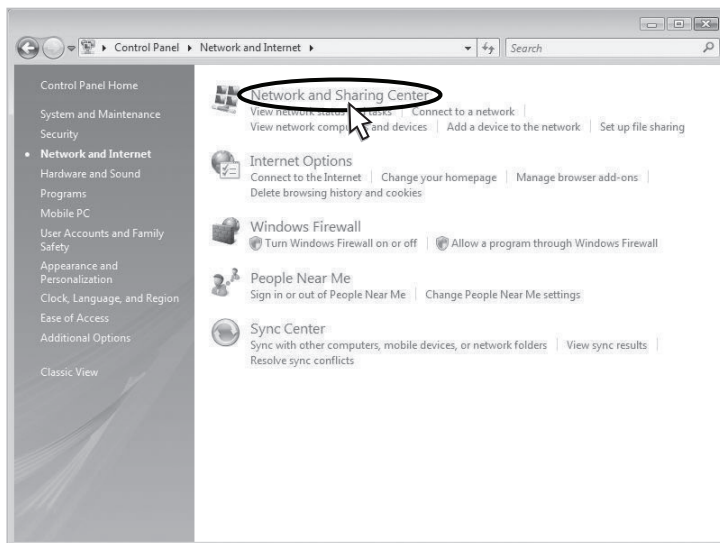


Step 2 Click **Network and Internet**.

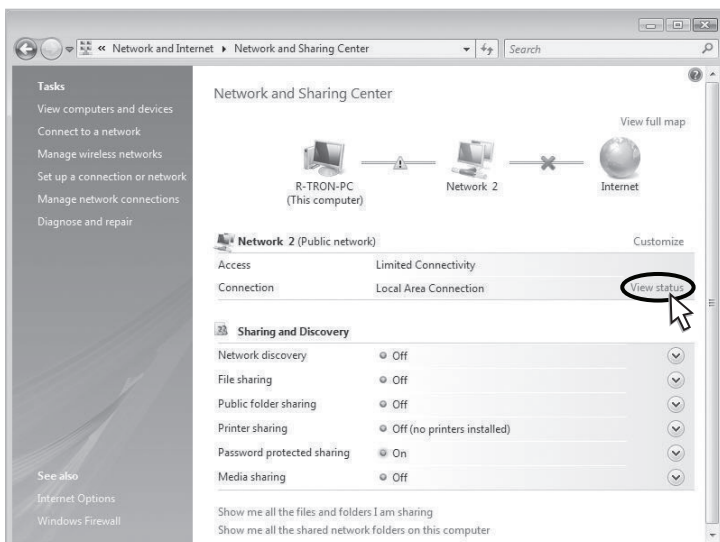


4. Operation ➤

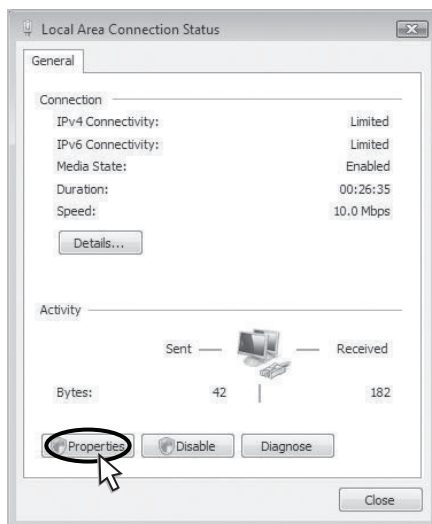
Step 3 Click **Network and Sharing Center**.



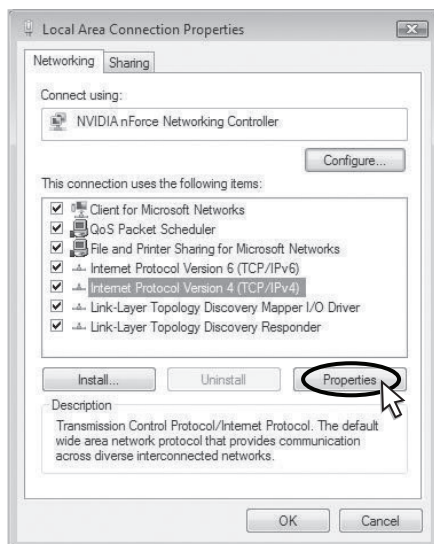
Step 4 Click **View status of Local Area Connection**.



Step 5 Click **Properties** and a caution pop-up window will appear. Click **OK**.

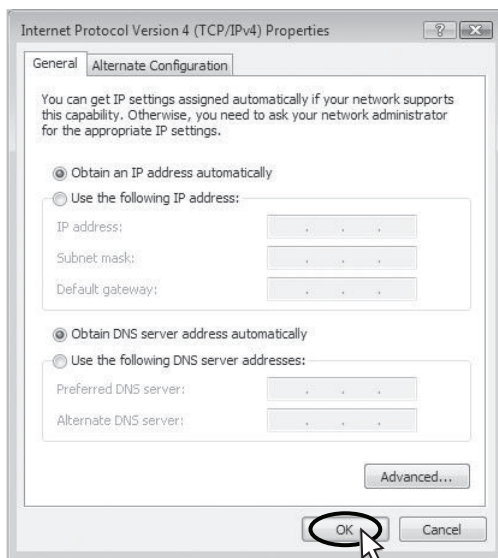


Step 6 Select **Internet Protocol Version 4 (TCP/IPv4)** and click **Properties**.



4. Operation ➤

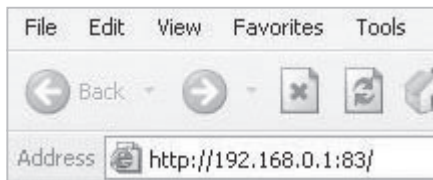
Step 7 Check **Obtain an IP address automatically** and click **OK**.



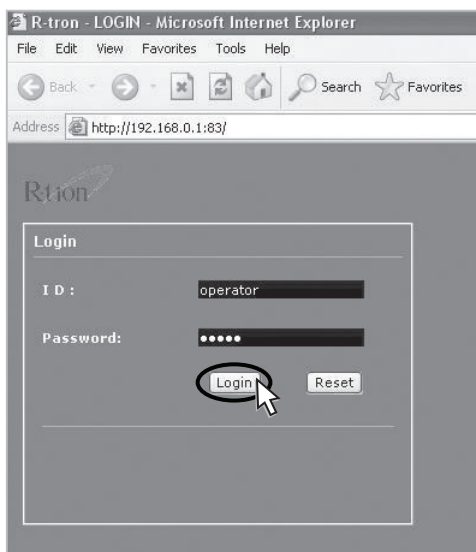
Step 8 Close all windows.

4.4 System Login

- Step 1** Open your Web browser and type “**192.168.0.1:83**” into the URL address box. Then press the **Enter** key.



- Step 2** The logon screen will appear. Type “**operator**” for the ID and “**rtron**” for the password and then click **OK**.

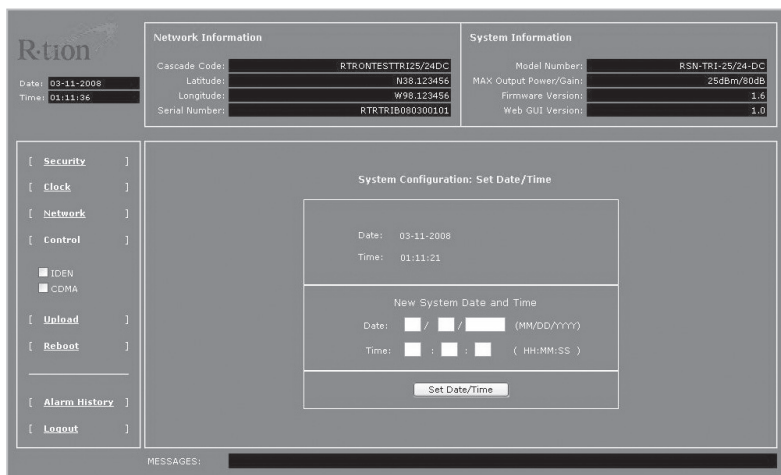


4. Operation >>

Step 3 The pop-up message for the login success will appear. Click **OK**.



Step 4 The login process is complete. The Initial screen will appear.



Step 5 In case of the initial login, you should input Cascade Code and Location Information of Network Setup. Otherwise a warning pop-up window will appear and you cannot access any of the menus.



4.5 System Setup

4.5.1 Security

Operator has no authorization to access this menu.

4.5.2 Clock

Click **Clock** in the left menu.

In this menu, you can set the date and the time.

Click **Set Date/Time**.

System Configuration: Set Date/Time

Date: 03-11-2008

Time: 01:11:21

New System Date and Time

Date: / / (MM/DD/YYYY)

Time: : : (HH:MM:SS)

4. Operation ➤

4.5.3 Network

Click **Network** in the left menu.

Network Setup

1. Cascade Code [Mandatory]
[RTRONTESTTRI25/24DC] [APPLY]

2. Location Information [Mandatory] - [example : N37.123456 , W98.123456]

Latitude [N38.123456] Decimal Degrees
Longitude [W98.123456] [APPLY]

Degrees Minutes Seconds
N - - [APPLY]
W - - [APPLY]

3. Heartbeat Interval [1 ~ 59 minutes : Default=20]
[20] Minutes [APPLY]

4. Product Information

Serial Number[RTRTRIB080300101] [APPLY]

*** NMC IP Address [Option] ***
[10.22.25.15] [APPLY]

Network Setup

- **Cascade Code:** Type in the pre-assigned code. **Otherwise, you cannot access system setup.**
- **Location Information:** Enter the latitude and longitude of a location, otherwise you cannot access the system setup. You can input either Decimal Degrees or Degrees-Minutes-Seconds.
[Example.]
('N/S ' | 'E/W ') ddd.dddddd: (Latitude: N 39.006957 Longitude: W 94.532306)
- **Heartbeat Interval:** Sets the time to transmit the Heartbeat to NMC Server. (Default value is 20 minutes. At the setup, temporarily reduce the value to 1 minute. After conforming heartbeat report, set the value back to 20 minutes.)
- **Product Information:** This is for manufacturer used only. DO NOT change this value.
- **Static IP for Remote Control:** Connect to the External Monitoring Device for Remote Access. Do not enter any value unless a static IP is assigned. DHCP client.
- **NMC Server IP:** Do not change this value; otherwise, the Heartbeat transmission or Remote Access may not work.

User Note [Option]

Location Information

Building Name [R-tron]
 Address 1 [College Boulevard]
 Address 2 [6402]
 City, State, Zip Code [Overland Park, Kansas, 66211]
 Telephone [1-913-344-9977] **SAVE**

Donor Site Information

Site ID 1 [1605450014] **SAVE**
 Site ID 2 [1605450015] **SAVE**

Installer Information

Company [R-tron]
 Name [Anthony]
 Telephone [1-913-344-9977] **SAVE**

User Comment

Time	Company	Name	Comment
2008-03-11 01:13:56			

SAVE

User Note

- **Location Information:** Type the location information such as the building name, address, city, state, zip code and telephone, and then click **SAVE** to save the information you provide.
- **Donor Site Information:** Type the base station's ID, and then click **SAVE** to save the information you provide.
- **Installer Information:** Type the installer information such as the company, name and telephone, and then click **SAVE** to save the information you provide.
- **User Comment:** You can add comments. Up to 50 comments can be stored in the memory. The length of characters for each comment is limited to 60 characters.

4. Operation

4.5.4 Control

a. iDEN

Check **iDEN** in the left menu.

RTion

Date: 02-13-2008

Time: 14:20:54

Network Information

Cascade Code: RTN04TESTTR1212/0400

Latitude: N28.123456

Longitude: W92.123456

Serial Number: RTN791800300101

System Information

Model Number: R30-181-25/04-00

MAX Output Power/Gain: 25dBm/80dB

Firmware Version: 1.5

Web GUI Version: 1.0

Security

Check

Network

Control

Monitor

History

☒ iDEN

☐ CDMA

Upload

Parameter Status

Bandwidth: 1.8 MHz

DL Frequency: 815-409.0 MHz

Isolation: 25 dB

Available Maximum Gain: 80 dB

Automatic Level Control: OFF

DL ALC Level: 25 dBm

UL ALC Level: OFF

Power Measurement

Downlink

Uplink

Downlink

Uplink

Input Power: Lower Than -70 dBm

Gain: 80 dB

Output Power: Lower Than 10 dBm

Composite Output Power: Lower Than 0 dBm

Amplifier: ON

UDC: 800MHz OFF, 810MHz ON

Automatic Shutdown

Level: 25 dBm

Time: 10 Seconds

Iteration: 20 Times

DC Voltage: 24 V

DC Current: 2 A

Temperature: 33.1 F

Restore Interval: 0 Hours

Alarm Status

Reported to Sprint

On Site

RSSI [DL Input Power]

DL Input Power

VSWR

Under Current

Over Temperature

DL Input Power

Output Power

Temperature

DC Voltage

DC Current

ASD

Over Power

Alarms Range To Setup

Reported to Sprint

On Site

RSSI [DL Input Power]

DL Input Power

VSWR

Under Current

Over Temperature

DL Input Power

DL Output Power

UL Output Power

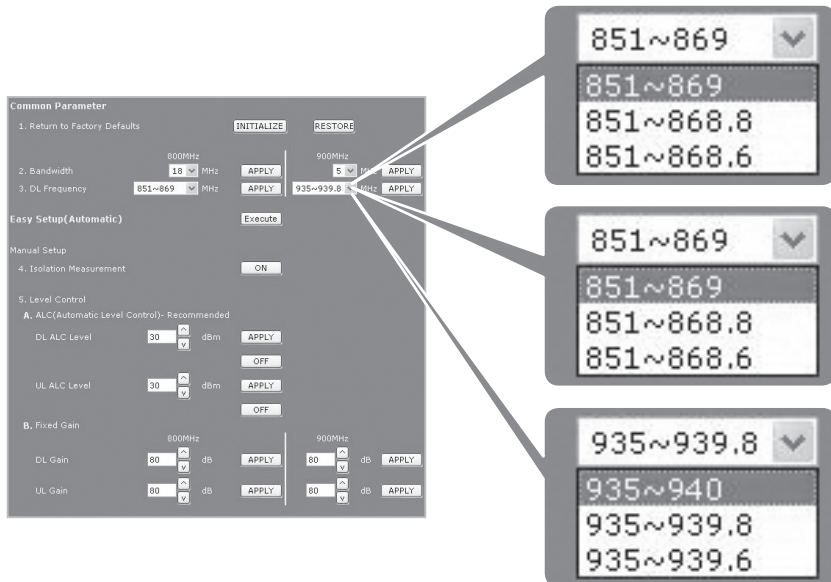
Temperature

DC Voltage

DC Current

MESSAGES

Parameter Setup



• Bandwidth/Frequency:

- For IDEN 800

If you select 18 MHz for bandwidth, the values of the frequency range are 851~869, 851~868.8, 851~868.6.

If you select 7 MHz for bandwidth, the values of the frequency range is 862~869, 862~868.8, 862~868.6.

- For IDEN 900

The values of the frequency range is 935~940, 935~939.8, 935~939.6.

4. Operation ➤

Solution 1. Easy Setup [Recommended]

Step 1 Return to Factory Defaults

1. Return to Factory Defaults

INITIALIZE

RESTORE

- To reset factory defaults, click **INITIALIZE**.
- To restore the previous settings, click **RESTORE**.

Step 2 Select the operating bandwidth and operating frequencies (5MHz-bandwidth fixed in iDEN 900) and click **APPLY**.

800MHz		900MHz	
2. Bandwidth	18 MHz	5 MHz	
3. DL Frequency	851~867 MHz	935~940 MHz	
APPLY		APPLY	

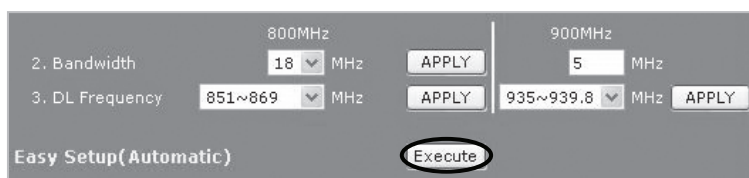
800MHz		900MHz	
2. Bandwidth	18 MHz	5 MHz	
3. DL Frequency	851~869 MHz	935~940 MHz	
APPLY		APPLY	
Easy Setup(Automatic)		Execute	

800MHz		900MHz	
2. Bandwidth	18 MHz	5 MHz	
3. DL Frequency	851~869 MHz	935~940 MHz	
APPLY		APPLY	
Easy Setup(Automatic)		Execute	

Step 3 Easy Setup

Easy Setup proceeds to:

- Isolation measurement On
- Calculation of Available Maximum Gain by the isolation.
- ASD On
- ALC On to get Maximum DL Output Power 25dBm [Defaults] or Maximum Gain 80dB. Click **Execute**.

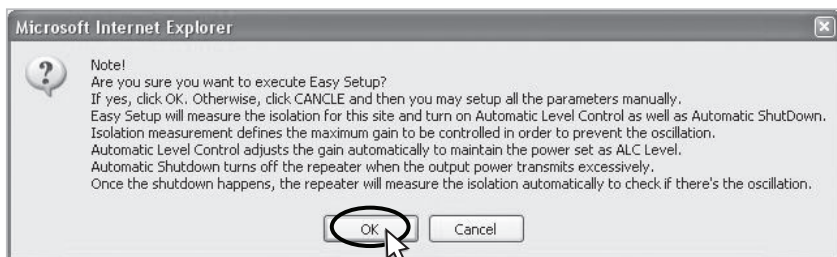


Easy setup feature will measure the isolation and limit the maximum gain accordingly. This will also enable Auto Level Control as well as Auto Shut Down. These two features are strongly recommended to prevent the uncontrolled power output, which could have an adverse impact on the RF network and the repeater. For example, ALC will apply attenuation automatically when the input signal strength is increased due to the new base station deployment near the repeater site.

Step 4 Click **OK**.

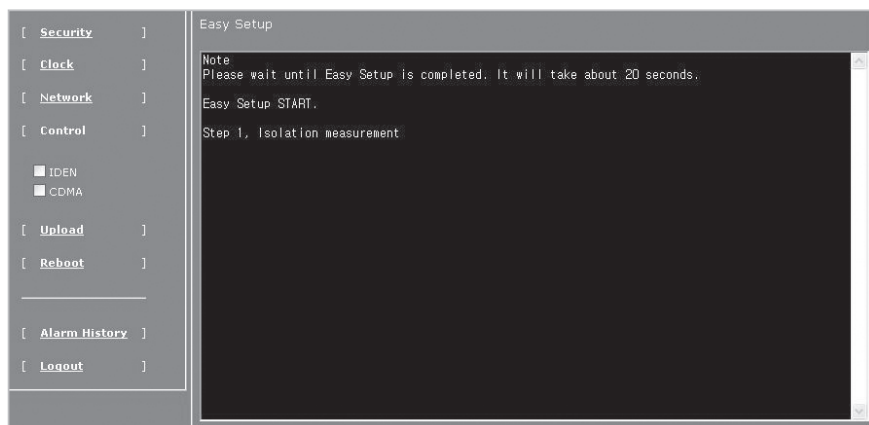


Step 5 Click **OK** again.

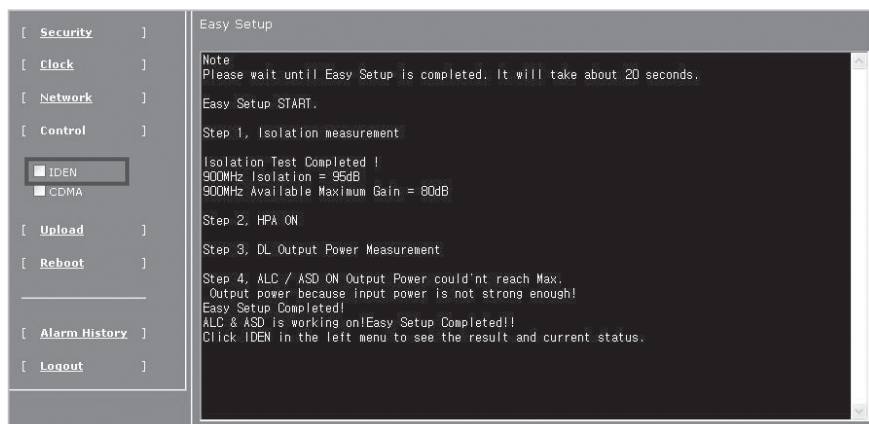


4. Operation ➤

Step 6 Setup will automatically begin. This process will take approximately 20seconds.



10~20 seconds



Click IDEN in the left menu.

Result 1 Constant Maximum DL Output Power 25dBm
if the DL Input Power \geq -55dBm.

Isolation	95	dB		
Available Maximum Gain	80	dB		
Automatic Level Control				
DL ALC Level	25	dBm		
	ON			
UL ALC Level	25	dBm		
	ON			
Power Measurement				
	800MHz		900MHz	
	Downlink	Uplink	Downlink	Uplink
Input Power	-51	-51	-51	-51 dBm
Gain	76	76	76	76 dB
Output Power	25	25	25	25 dBm
Composite Output Power				
	Downlink		Uplink	
Composite Output Power	25		25 dBm	
Amplifier	ON		ON	
	800MHz		900MHz	
UDC	ON		ON	

4. Operation >>

Result 2 Maximum Gain 80dB if the DL Input Power <-55dBm.

Isolation		95	dB		
Available Maximum Gain		80	dB		
Automatic Level Control					
DL ALC Level		25	dBm		
		ON			
UL ALC Level		25	dBm		
		ON			
Power Measurement					
	800MHz		900MHz		
	Downlink	Uplink	Downlink	Uplink	
Input Power	-60	-60	-60	-60	dBm
Gain	80	80	80	80	dB
Output Power	20	20	20	20	dBm
	Downlink		Uplink		
Composite Output Power	20		20		dBm
Amplifier	ON		ON		
	800MHz		900MHz		
UDC	ON		ON		

After running Easy Setup or Isolation Measurement, Isolation is displayed with “95” when the isolation is higher than 95dB, or it is displayed with the actual when the isolation is lower than 95dB.

•**Automatic Level Control:** Type under 25 and then click **APPLY** and **ON**.

[Example]

For the repeater with 25dBm maximum output power, 80dB maximum gain / 30dB gain control range, → If the signal -45dBm and the ALC is set as 25dBm the gain will be 70dB to adjust to the output power.

If the input signal is -60dBm, the output power will be 20dBm by the limitation of the maximum gain even though the ALC is set as 25dBm.

- **Automatic Shutdown:** Type the desired values for **dBm**, **seconds**, and **times** and then click **APPLY** and **ON**. (e.g. 28dBm, 3seconds, 10times)

[Example]

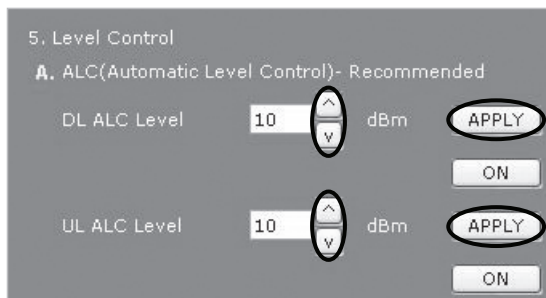
For the repeater with 25dBm Maximum Output Power, 80dB Maximum Gain / 30dB gain control range, Assuming **ASD Level: 28dBm**, **ASD Time: 3seconds**, **ASD Iteration: 10**.

If the output power is 28dBm(ASD LEVEL) and higher, the repeater will shutdown for 3 seconds(ASD TIME). If the shutdown occurs 10 times (ASD COUNT), the 10th shutdown will be permanent.

Solution 2. DL Output Power < Max. 25dBm

Step 1A Repeater **Step 1** through Step 6.

Step 2A Change the level at **Automatic Level Control** and click **APPLY**.



4. Operation >>

Result Constant output power set as the ALC level.

Isolation	95	dB		
Available Maximum Gain	80	dB		
Automatic Level Control				
DL ALC Level	10	dBm		
	ON			
UL ALC Level	10	dBm		
	ON			
Power Measurement				
	800MHz		900MHz	
	Downlink	Uplink	Downlink	Uplink
Input Power	-64	-64	-64	-64
	dBm			
Gain	74	74	74	74
	dB			
Output Power	10	10	10	10
	dBm			
	Downlink		Uplink	
Composite Output Power	10		10	
	dBm			
Amplifier	ON		ON	
	800MHz		900MHz	
UDC	ON		ON	

Solution 3. Fixed Gain [Not Recommended]

Step 1B Repeat **Step 1** through **Step 6**.

Easy Setup will calculate the **Available Maximum Gain** which defines the maximum gain to be setup.

Isolation	89 dB
Available Maximum Gain	74 dB



Warning

DO NOT setup the gain higher than the Available Maximum Gain.

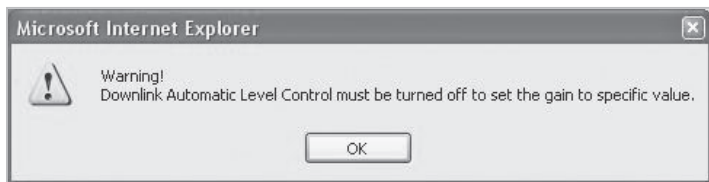
Step 2B Read DL Input Power and the gain controlled by Easy Setup.

Isolation	89 dB				
Available Maximum Gain	74 dB				
Automatic Level Control					
DL ALC Level	25 dBm				
	ON				
UL ALC Level	25 dBm				
	ON				
Power Measurement					
	800MHz		900MHz		
	Downlink	Uplink	Downlink	Uplink	
Input Power	-49	-49	-49	-49	dBm
Gain	74	74	74	74	dB
Output Power	25	25	25	25	dBm
	Downlink		Uplink		
Composite Output Power		25		25	dBm
Amplifier		ON		ON	
	800MHz		900MHz		
UDC		ON		ON	

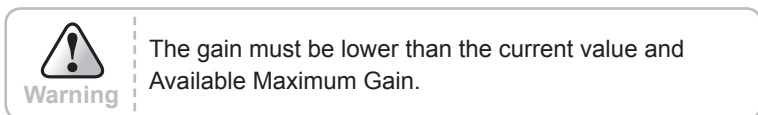
4. Operation >>

Step 3B Turn off **DL Amplifier** and **UL Amplifier**.

Step 4B **ALC** must be turned off, otherwise, the following message appears.



Step 5B Change **DL Gain** and **UL Gain**.



Step 6B Turn on **DL Amplifier** and **UL Amplifier**.

Step 7B Turn on the ALC.

5. Level Control

A. ALC(Automatic Level Control)- Recommended

DL ALC Level dBm

UL ALC Level dBm

Result DL and UL gain fixed and the output power depends on the input power.

Isolation			89	dB
Available Maximum Gain			74	dB

Automatic Level Control

DL ALC Level		25	dBm
	<input type="checkbox"/>	ON	<input type="checkbox"/>
UL ALC Level		25	dBm
	<input type="checkbox"/>	ON	<input type="checkbox"/>

Power Measurement

	800MHz		900MHz	
	Downlink	Uplink	Downlink	Uplink
Input Power	-49	-49	-49	-49 dBm
Gain	74	74	74	74 dB
Output Power	25	25	25	25 dBm
Composite Output Power	Downlink 25		Uplink 25 dBm	
Amplifier	ON		ON	
UDC	800MHz ON		900MHz ON	