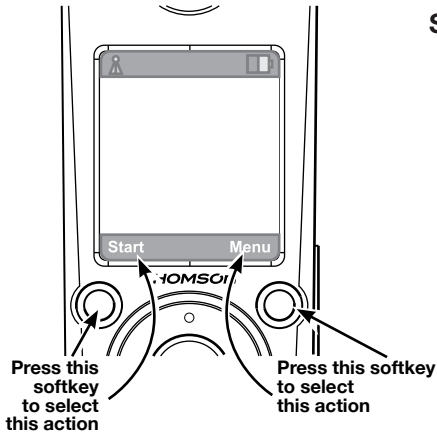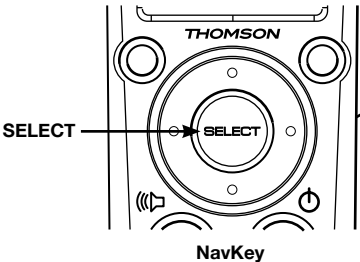# Becoming Familiar with Handset Operation

Softkeys

The Handset has two softkeys that serve multiple functions.

The text shown above the softkey indicates the current function of the key.

*If no text is shown, then the key has no function.*

Press this softkey to select this action

Press this softkey to select this action

NavKey (*Navigation Key***)**

Use the NavKey to move around (up, down, left, right) within the menu screens

    and

for positioning the cursor when editing text.

*Press the center of the NavKey to **select** an option within the menu screen (these are typically highlighted items).*
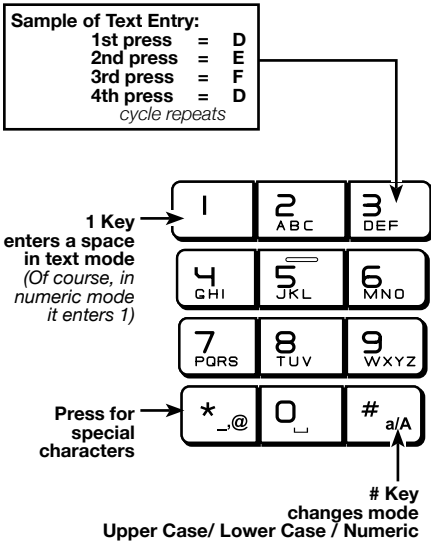
When on a phone call, use the up or down NavKey to adjust the volume.

SELECT

NavKey
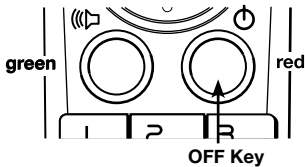
OFF *(Red Key)*

When on a phone call, press this key to end a call (hang up).

Return to the Home Screen by pressing the Red Key when within any menu or submenu.

green

red

OFF Key

18

Sample of Text Entry:
1st press	=	**D**
2nd press	=	**E**
3rd press	=	**F**
4th press	=	**D**
	cycle repeats	

1 Key enters a space in text mode
(Of course, in numeric mode it enters 1)

1	2 ABC	3 DEF
4 GHI	5 JKL	6 MNO
7 PQRS	8 TUV	9 WXYZ
* _.@	0 ⎵	# a/A

Press for special characters

 # Key changes mode
Upper Case/ Lower Case / Numeric

Special Charaters

' ? | "
- ( ) @ / :
_ ; + % * =
< > $ [ ] }
{ \ ~ ^ # |

Back   Yes

Highlighted character

Press this softkey to type the highlighted character.

Entering Text

Use the keypad to enter characters while in a text entry field.

The first key press will display the first character presented on the key (refer to sample at left).

Pressing the key repeatedly will cycle through the characters on the key.

Text entry tips:

Pressing the # key in text entry mode alternates among the following:
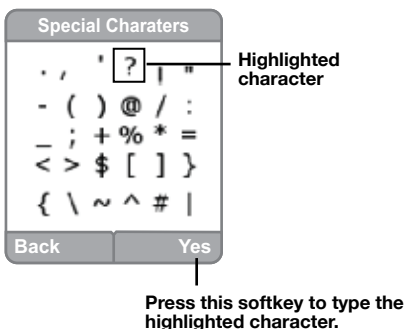
- lower case
- upper case
- numeric

The upper right corner of the screen will display which mode is activated.

Press **1** to enter a space in lower or upper case mode.
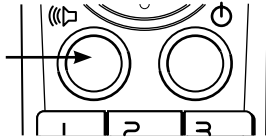If in numeric mode, pressing 1 will enter the number 1.

If a special character is needed, press the **Star** key *(the lower left corner key)* to view a screen of these characters.
Use the *navkey* to highlight the character that is needed. Push the **Yes** *softkey* to place the character into your line of text.

Day to Day Use

Making Calls

To make a standard telephone call, press the green key *(talk key)* and then dial the number. If you want to use the speakerphone, press the green key a **second** time and then dial the number.

Green key
**Press once:**
regular call
Press twice:
speakerphone

For pre-dialing, (*preview numbers before dialing*) enter the numbers first. If you make a mistake when dialing use the NavKey *(navigation key)* to place the cursor to the **right** of the number you want to delete and press the softkey **remove** to delete the number. After entering the number, press the green key.

Receiving Calls

When the telephone is ringing, press the green key to answer the call.

Press a the green key a **second** time if you want to answer using the speakerphone.

Note: The speakerphone provides you a hands-free option while on a call. During a call, press the green key to alternate between speakerphone and normal handset use.
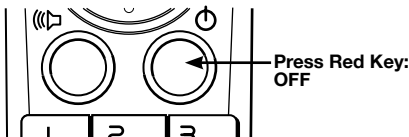
Press Red Key:
OFF

Ending Calls

While you are on a call, press the red key (OFF key) to end the call.

Note: The screen displays the elapsed time of the call (in hours, minutes and seconds) and the telephone number you dialed while you are on a call**.** After a call ends, the call summary will be displayed, showing the length of the call in hours, minutes and seconds.
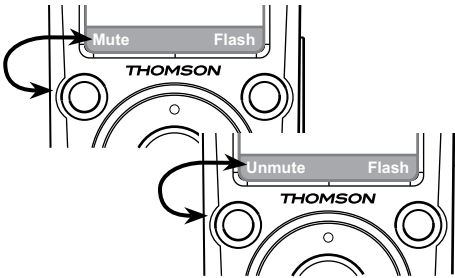
Mute

During a call, press the **Mute** *softkey* to mute the microphone.

Press the **UnMute** *softkey* to resume normal conversation.

Note: The Mute function is used to silence the microphone during a conversation. You will be able to hear the caller, but the caller will **not** be able to hear you until you press the **UnMute** *softkey* to resume the conversation. When you hang up the telephone, the feature will be canceled.

Call Volume

For the Earpiece, press the UP Navkey to raise volume
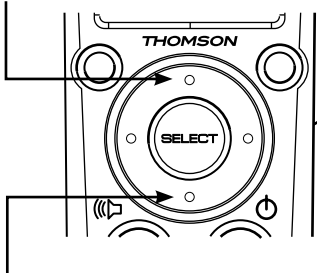
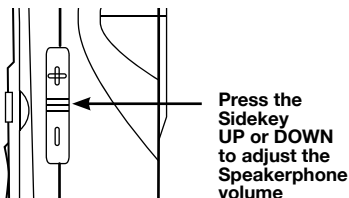**Press the DOWN Navkey to lower volume**

You can adjust the listening volume from the earpiece or speakerphone during a call.

While on a call, press UP or DOWN of the NavKey to adjust the volume of the earpiece.

Press the Sidekey UP or DOWN to adjust the Speakerphone volume

To raise or lower the sound level of the speakerphone, press the UP/DOWN button on the Sidekey.

Note: After adjustment, a volume bar will appear on the screen. It will only be displayed for three seconds and the volume level will be **saved** automatically.

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Handset Screen Icons

As you move from screen to screen, the icons at the top of the screen change and display important information:

Top Bar Icons

The visibility and color of this icon tell you the status of the phone's connection

	Green :	the handset is registered to the Advanced Cable Gateway and has a connection
	Red :	the handset is registered to the Advanced Cable Gateway but does not have a connection at this time
	Not Visible :	the handset you are using is not registered

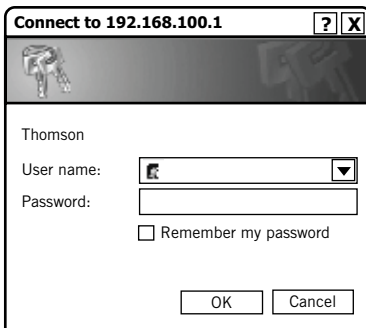|	
	Battery Indicator : displays when the battery is charging.
	Busy/Waiting
	Email Alert
	Handsfree "Loudspeaker"
	Mute
	The ringer volume is off.

Access and Change Gateway Advanced Settings

The Gateway offers local management capability through a built in HTTP server and a number of diagnostic and configuration web pages. You can configure the settings by way of the webpage and apply them to the device. Once your host PC is properly configured; please proceed as follows:

Connect to 192.168.100.1   ? X

Thomson

User name: | | ▼ |

Password: | |

☐ Remember my password

OK   Cancel

1. Start your web browser and type
   http://cable.config/

2. After connecting to the site, you will be asked to enter username and password. By default, the **Login Name** is: _____ (leave the field blank) **Password** is: **admin**

If you log in successfully, the main webpage will appear.

You can also access these pages by inserting the CD that came with your Gateway.

Outline of Web Manager

The main screen will be shown as below.
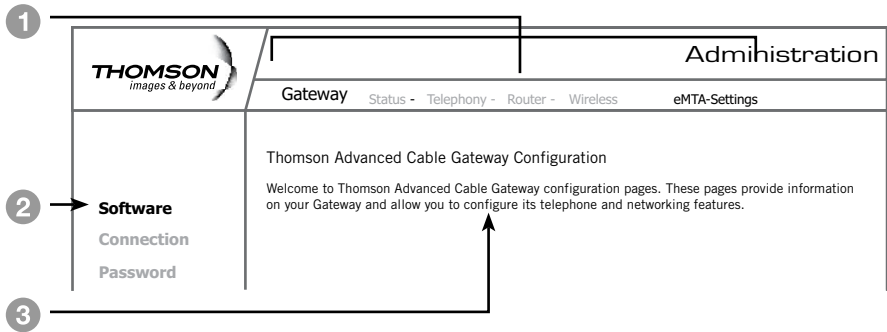
①	**Main Menu**	The hyperlinks on the top of the page, including Gateway, VoIP, Router, Wireless, eMTA-Settings and several sub-menu items.
②	**Title**	The sidebar on the left side of the page indicates the title of this management interface.
③	**Main Window**	The current workspace of the web management containing configuration or status information.

Select a Main Menu ① item first and the pages or groups of pages associated with that topic will appear in the sidebar ② . This arrangement makes navigation easy.

Gateway – Status Web Page Group

1. Software

THOMSON *images & beyond*		Administration
	Gateway **Status -** Telephony - Router - Wireless	eMTA-Settings

Status

Software : This page displays information on the current system software.

Software

Connection

Password

Information	
Standard Specification Compliant	DOCSIS 2.0
Hardware Version	ACG90x rev 0
Software Version	cable ACG905 1.4.5.0
DOCSIS Software Version	2.0.0 alpha5
DECT Software Version	1252.64
Cable Modem MAC Address	00:1E:69:A0:01:9D
Cable Modem Serial Number	87003804790030

Status	
System Up Time	0 days 0h:02m:10s
Router IP Address	

❶	**Information**	Section shows the hardware and software information about your Gateway.
❷	**Status**	Section shows how long your Gateway has operated since last time being powered up and some key information the cable modem received during the initialization process with your cable company.

2. Connection

This page reports **Current Connection Status** containing startup procedures, downstream and upstream status and so on. The information can be useful to your cable company's support technician if you're having problems.

THOMSON *images & beyond*			Administration
	Gateway	**Status** - Telephony - Router - Wireless	eMTA-Settings

Status

Connection: This page displays information on the status of the cable modem's H FC and IP connectivity

Software

Connection

Password

Startup Procedure

Procedure	Status
Acquire Downstream Channel	Complete
Connectivity State	Complete
Boot State	Complete
Configure File	Complete

Downstream Channel

Lock Status	Not Locked	Modulation	Unknown
Channel ID	0	Symbol rate	Unknown
Downstream Frequency	253000000 Hz	Downstrean Power	-6,300000 dBmV
SNR	23.200000 dB		

Upstream Channel

3. Password

This page is used to **Change the Password** that enables you to access the Gateway web pages next time.

Note: The default **User Name** is: _____ (leave the field blank)
☺☺☺ The **Password** is: **admin**

The user name and password can be a maximum of 15 characters and are case sensitive.

THOMSON *images & beyond*			Administration
	Gateway	**Status** - Telephony - Router - Wireless	eMTA-Settings

Status

Password: This page allows administration of access privileges and the ability to restore factory defaults to the system.

Software

Connection

Password

User Name		
Password	*****
Re-Enter Password	*****

Apply

Gateway – Telephony Web Page Group

1. Base

This page displays information on the DECT Handset base station

	Administration
THOMSON *images & beyond*	
Gateway Status - **Telephony-** Router - Wireless eMTA-Settings	

Telephony

Base :   This page displays information on the DECT base system.

Base

Handsets

Information	
Standard Specification Compliant	PacketCable 1.0
Software Version	1249
EEPROM Revision	64
REPI	00FS400930

2. Handsets

This page displays information on the DECT Handsets subscribed to the ACG

	Administration
THOMSON *images & beyond*	
Gateway Status - **Telephony-** Router - Wireless eMTA-Settings	

Telephony

Handsets : This page displays information on the DECT handsets.

Base

Handsets

Subscribed Handsets
Handset 1 subscribed, narrowband
Handset 2 subscribed, narrowband
Handset 3 subscribed, narrowband
Handset 4 subscribed, narrowband
Handset 5 subscribed, narrowband

[Subscribe a Handset]   [Update Status]   [Clear all Subcriptions]

Gateway – Router Web Page Group

1. LAN

By default the DHCP server function for the LAN is activated.

LAN settings can be modified on this page.

With this function activated, your cable company's DHCP server provides one IP address for your Gateway.

Your Gateway's DHCP server provides IP addresses to your PCs within the range of addresses specified in the DHCP range start and stop address fields.

A DHCP server leases an IP address with an expiration time.

For example, to change the lowest IP address that your Gateway will issue to your PCs, enter it into the **DHCP Range Start Address** box and then click **Apply**.

THOMSON *images & beyond*	Administration
	Gateway Status - Telephony - **Router -** Wireless eMTA-Settings

Router

LAN: This page allows configuration and status of the optional internal DHCP server for the LAN.

LAN
WAN
Computer
Firewall
Forward
DMZ

Network Configuration
IP Address: `192.168.0.1`
Subnet Mask: `255.255.255.0`

DHCP Server   ⦿ Yes ◯ No
DHCP Range
Start Address: `192.168.0.10`
DHCP Range
Stop Address: `192.168.0.99`
DHCP Lease
Time `24h`

Note: *It is highly recommended that these setting not be changed.*
☺☺☺

2. WAN

This page displays information on the WAN parameters of the Gateway.

THOMSON *images & beyond*		Administration
	Gateway Status - Telephony - **Router -** Wireless eMTA-Settings	

Router

WAN : This page displays information on the WAN parameters of the gateway

LAN

WAN

Computer

Firewall

Forward

DMZ

WAN IP Address: 10.22.15.7

Expires in: 4d:15h:52m:2s

3. Computers

This page displays the status of the DHCP clients *(lists all computers connected to your computer)* - Computer name, IP address and mac address. In addition the interface of each computer is displayed.

THOMSON *images & beyond*		Administration
	Gateway Status - Telephony - **Router -** Wireless eMTA-Settings	

Router

Computer : This page shows the status of the DHCP clients

LAN

WAN

Computer

Firewall

Forward

DMZ

DHCP Clients

Computer Status	IP Address	MAC Address	Interface

4. Firewall

This page allows you to choose the firewall settings of the Gateway in order to protect the computers within your home network from malicious attacks from outsiders. In addition you can use this feature to restrict a computer within your home network from accessing certian Internet traffic by IP address and by logical ports.

3 security levels are proposed:

Minimum (*default*)

Medium

Maximum

THOMSON images & beyond	Administration
	Gateway Status - Telephony - **Router -** Wireless eMTA-Settings

Router

Firewall : This page allows you to restrict a computer within your home network from accessing certain internet traffic by IP address and by logical ports.

LAN
WAN
Computer
Firewall
Forward
DMZ

Security | Minimum ▼
Minimum
Medium (filter input)
Maximum (filter both input and output)

Minimum Level of Security

The minimum level allows all the incoming and outgoing traffic, **except** for:

- **Windows Ports:**
  137, 138, 139. *These ports are used for local networks.*

So, the Firewall allows a minimum level of security. Apple products are also supported

Medium Level of Security

This level of security blocks all the incoming traffic and allows all outgoing traffic.

Already established connections are accepted.

Maximum Level of Security

This level blocks all the incoming and outgoing traffic with the following exceptions:

- **Connections to the following services (servers located on the WAN) are accepted:**
  - FTP (port 20/21)
  - www.(port 80) in TCP
  - http (port 443) in TCP
  - SMTP (port 25) in TCP and UDP
  - POP2 (port 109) in TCP and UDP
  - POP3 (port 110) in TCP and UDP
  - nntp (port 119) in TCP

All the packets of an already established connection are accepted.

5. Forwarding

For LAN / WAN communications, the Gateway normally allows you to originate an IP connection only with a PC on the WAN; it will ignore attempts of the WAN PC to originate a connection onto your PC.
This protects you from malicious attacks from outsiders.

However, sometimes you may wish for anyone outside to be able to originate a connection to a particular PC on your LAN, if the destination port (application) matches one that you specify.

THOMSON *images & beyond*	Administration					
Gateway	Status - Telephony - **Router -** Wireless		eMTA-Settings			

Router

Forwarding : This allows for incoming requests on specific port numbers to reach web servers, FTP servers, mail servers, etc. so they can be accessible from the public internet. A table of commonly used port numbers is also provided

LAN
WAN
Computer
Firewall
Forward
DMZ

Application Name	Source Port(s)	Protocol	IP Address	Destination Port	
HTTP	80	TCP	192.168.0.5	80	▼
	0	Both ▼	0000	0	▼

Apply   Cancel   Remove All

This page allows you to specify up to 9 such rules. The IP address can be entered multiple times with different ports. For example, to specify that outsiders should have access to an HTTP server (HTTP on port =80) (HTTP port) amd Protocol = TCP (HTTP runs over TCP)

- Create 1 rule with that address and with Source Port = 80 and Destination Port =80 (HTTP port) and Protocol = TCP (HTTP runs over TCP)
- click on "+" to enter this rule
- Click "apply" to validate the configuration
- This will cause inbound packets that match to be forwarded to that PC rather than blocked

Buttons + and – are used to add and remove a rule

Button apply is used to validate the rules entered

Button cancel is used to cancel the last action

Button remove all is used to remove all the rules

List of common applications and ports they use:

- AUTH : port 113
- DNS : port 53
- FTP : port 21
- FTP_DATA : port 20
- FTP_SRV : ports 1024 to 65535
- HTTP : port 80
- HTTPS : port 443
- IPSEC : port 500
- NTP : port 123
- POP3 : port 110
- PPTP : port 1723
- SMTP : port 25
- SSH : port 22
- TELNET : port 23
- TFTP : port 69
- VNC : port 5900
- VNC_http : port 5800

Note: *For certain data transfer applications (FTP for example), you have to use firewall security levels minimum or medium because most of the traffic is blocked in the maximum level of security.*

6. DMZ Host

Use this page to designate one PC on your LAN to be exposed to the Internet for use of a special-purpose service *(for example - internet games or video conferences)*. DMZ hosting opens all ports of a PC.

	Administration
THOMSON *images & beyond*	
Gateway	Status - Telephony - **Router -** Wireless eMTA-Settings
	Router
	DMZ Host (Exposed Host) : This page allows you to open all ports on one chosen computer. Warning, in the DMZ, the computer becomes exposed or visible directly from the Internet and, because of this, becomes more vulnerable to hackers.
LAN **WAN** **Computer** **Firewall** **Forward** **DMZ**	DMZ Address: [ ] [Apply] [Remove] [Cancel]

Warning: in the DMZ, the computer becomes exposed and visible directly from the Internet so becomes more vulnerable to hackers. (see the Router/ forwarding section on page 29 to open only specific ports on your PC)

Gateway – Wireless Web Page Group

> � *Important - Changes to the Wireless Web Pages should be made from a PC that is hard wired to the Gateway.*

The Wireless Web Pages Group enables a variety of settings that can provide secure and reliable wireless communications.

The Advanced Cable Gateway offers a choice of the following:

- WEP and WPA/WPA2 authentication of your PCs to the Gateway
- Encryption keys for communication between the Gateway and your PCs to guarantee security
- An Access Control List function that enables you to restrict wireless access to only your specific PCs.

Performance

Because your wireless communication travels through the air, the default wireless channel setting may not provide optimum performance in your home if you or your neighbors have other interfering 2.4GHz devices such as cordless phones.

If your wireless PC is experiencing very sluggish or dramatically slower communication compared with the speed you achieve on your PC that is wired to the Gateway, try changing the channel number.

See the 802.11b/g Basic Web Page discussion below for details.

Authentication

Authentication enables you to restrict your Gateway from communicating with any remote wireless PCs that aren't yours. The following minimum authentication-related changes to factory defaults are recommended.

See the 802.11b/g Basic and Access Control Web Page discussions below for details.

Network Name (SSID) – Set a unique name you choose

Access Control List – Enter your wireless PCs' MAC addresses

Security

Security secures or scrambles messages traveling through the air between your wireless PCs and the gateway, so they can't be observed by others.

The following minimum security setting changes to factory defaults are recommended.

- Change the default Network name of SSID
- Enable mac address filtering by using the Access control list features
- Choose WPA/WPA2 encryption

See the 802.11b/g Security Web Page discussion below for details.

1. 802.11b/g Basic

To set the basic configuration for the wireless features, click **Basic** from the **Wireless** menu.

Note: These must match the settings you make on your wireless-equipped PC on the LAN side.

The SSID is your Network Name.

- Change the default to a name of your choice up to 32 characters long.
- The wireless radio in your Gateway can be completely de-activated by changing Interface to Disabled).
- Click the **Apply** button to save your settings.

	Administration
THOMSON *images & beyond*	
Gateway	Status - Telephony - Router - **Wireless** eMTA-Settings

Wireless

802.11b/g Basic : This page allows configuration of the Access Point parameters, including the SSID and channel number.

Basic
Security
Access Control

Interface	Enabled ▼
Wireless MAC Address:	00:19:df:80:00:68
Network Name (SSID)	ACG Welcome
New Channel	5 ▼
Current Channel	5
Data Encryption Mode:	wpa2

[Apply] [Cancel]

⌗ *The Gateway WiFi radio frequently transmits a beacon signal which can contain this network name (SSID).*

*The network Type is **Open**, so your SSID is included in that beacon, and is therefore detectable by any nearby wireless equipped PCs in the area.*

Setting	Description	Value List or Range	Default
Interface	Enable or disable the wireless interface.	Enabled, Disabled	Enabled
Wireless Mac Address	The Mac address of the wireless card installed is displayed		
Network Name (SSID)	Set the Network Name (also known as SSID) of this network.	Up to 32-character string containing ASCII characters with codes between 0x20 and 0x7e	THOMSON-ACG-XXXX as preconfigured by the factory
New Channel	Select a particular channel on which to operate.	1-13	11
Data Encryption Mode	The data encryption mode currently used is displayed		WPA-PSK (TKIP)

2. 802.11b/g Security

This page allows you to configure the Network Authentication.

This page provides several different modes of wireless security.

You will have to enter proper information according to the mode you select.

A network encrypted with WPA/WPA2 is more secure than a network encrypted with WEP, because WPA/WPA2 uses dynamic key encryption. To protect the information as it traveling through the air, you should enable the highest level of encryption supported by the ACG: WPA2-PSK (AES)

WPA2-PSK (AES)

To enable WPA2

(Make sure that your wireless client and client manager are compatible with it.)

Choose WPA2-PSK (AES) in the security drop down menu.

Select a passphrase: the passphrase is composed of more than 8 alphanumerical characters. Upper and lower case characters can be used.

Use a strong passphrase which combines letters and numbers.

(The alphanumeric character set consists of the numbers 0 to 9 and letters A to Z.)

THOMSON *images & beyond*	Administration
	Gateway Status - Telephony - Router - **Wireless** eMTA-Settings
	Wireless
	802.11b/g Security : This page allows configuration of the security, WEP key or WPA passphrase.
Basic	
Security	Security WPA2-PSK(AES) ▼
Access Control	WPA Passphrase ●●●●●●●●●●
	Apply Cancel

Click on apply

WPA2-PSK (AES) authentication and encryption

The authentication uses a 4-way handshake to check wether the Pre shared Keys (PSKs) are identical.

Advanced Encryption Standard () is the state of the art encryption mechanism which provides the highest form of security for home users.

Other security modes available:

WPA-PSK (TKIP)

This is the default security mode.

Temporal Key Integrity Protocol (TKIP) is used for dynamic encryption of the data.

WEP-Open and **WEP-Shared**

If one of these security modes is chosen, you have to enter a 128 bits encryption key

Encryption Key 128 bits

The key used for WEP is a 128 bit hexadecimal ([0-9] [A-F]) key.

The key is composed of 26 hexadecimal characters.

3. Access Control

This page allows you to ensure security by setting an access control to the
Access Point (AP). Access control is done on client's mac addresses

MAC Restrict Mode: Click **Disabled** to welcome all of the clients on the
network (*default setting*).
Click **Allow** to permit only the clients on the list to access the cable modem.
Click **Deny** to prevent the clients on the list to access this device.

MAC Address: Your Gateway identifies wireless PCs by their WiFi
MAC Address.
This address consists of a string of 6 pairs of numbers
0-9 and letters A-F, such as 00 90 4B F0 FF 50.
It is usually printed on the WiFi card of the device (e.g.
the PCMCIA card in a laptop).

Enter the MAC addresses of the connected clients
into the fields, and then click Apply to add them to
the list for access control. A maximum of 9 MAC
addresses can be entered.

+ :   After proper configuration, click on the + button to
invoke the settings.

Connected Clients: The information of currently connected clients will be
displayed here.

eMTA settings – Basic Web Page Group

This group of pages gives information on the hardware and the state of your cable connection. The access to this groupof pages is protected by a static password: no username, password:Thomson

1. Status

This page displays:

- Basic LAN Status of This Device
  (including the downstream and upstream status)

- Device Information

- Interface Parameters

THOMSON images & beyond					Administration
	Gateway	Status -	Telephony - Router - Wireless		**eMTA-Settings**

Status
This page displays information on the status of the cable modem's HFC and IP connectivity.

Status	**RF Downstream**	
CM Hardware	Frequency:	405.000 MHz
Event Log	Power:	13.5 dBmV
CM State	SNR:	39.5 dB
	Modulation:	QAM-256

RF Upstream	
Frequency:	33.000 MHz
Power:	43.8 dBmV
SNR:	2560Ksym/sec
Modulation:	QPSK

2. CM Hardware

The CM hardware is displayed on this page.

<table>
<tr><td colspan="3">THOMSON <i>images & beyond</i></td><td colspan="2" align="right">Administration</td></tr>
<tr><td></td><td>Gateway</td><td>Status - Telephony - Router - Wireless</td><td>eMTA-Settings</td><td></td></tr>
</table>

Basic

Hardware
This page displays the CM and MTa event logs.

CM Hardware	
HW Revision:	0
Vendor:	Thomson
BOOT Revision:	2.1.8o
SW Revision:	2.0.0alpha3
Model:	ACG905
Product Type:	ACG905
Flash Part:	
Download Revision:	(unknown)
Software Revision:	2.0.0alpha3
Serial number:	87003804790087

MTA Hardware	
MTA Serial Number:	87003804790087

Side navigation:
Status
CM Hardware
Event Log
CM State

3. Event Log

The CM event log is displayed on this web page.

<table>
<tr><td colspan="3">THOMSON <i>images & beyond</i></td><td colspan="2" align="right">Administration</td></tr>
<tr><td></td><td>Gateway</td><td>Status - Telephony - Router - Wireless</td><td>eMTA-Settings</td><td></td></tr>
</table>

Basic

Event Logs
This page displays the CM and MTa event logs.

CM Event Log			
Date/Tme	Event Level	Event ID	Description
03/03/2008 19:23	Critical (3)	D3.0	DHCP WARNING - Non-critical field invalid in response
01/01/2000 00:02	Critical (3)	R2.0	No Ranging Respnonse received - T3 time-out
01/01/2000 00:02	Critical (3)	T1.0	SYN Timing Synchronization failure - Failed to acquire QAM/QPSK

Side navigation:
Status
CM Hardware
Event Log
CM State

4. CM State

This page shows the current state of the cable modem.

	Administration
THOMSON *images & beyond*	
	Gateway Status - Telephony - Router - Wireless **eMTA-Settings**

	Basic
	CM State
	This page displays the state of the CM/MTA.
Status	
CM Hardware	
Event Log	
CM State	

CM Hardware	
CM State:	Operational
Docsis-Downstream Scanning	Done
Docsis-Ranging	Done
Docsis-DHCP	Done
Docsis-TFTP	Done
Docsis-Data Reg Complete	Done
Telephony-DHCP	Completed
Telephony-Security	Disabled
Telephony-TFTP	Completed
Telephony-Reg with Call Server	L1: Operational/L2: Operational

Additional Information
Customize Your Handset
Chart of the Menus

While in the home screen press the **menu** *softkey*. Select the settings icon to access the settings menu of the phone.

The menu structure is as follows:

> � CONFIRM - *When working in the screens on your handset, there are two ways to confirm your selections. In most screens you will use a softkey for "OK"; but, if that is not available, use the "Select" key located in the center of the navigation key.*

Ring Tone
- Ring Tone
  - *External Calls (choice of 5 ringtones)*
  - *Internal Calls (choice of 6 ringtones)*
- Ring Volume
- Beep Tone
  - *Key Beep (on/off)*
  - *Low Battery (on/off)*
  - *Out of Range (on/off)*
  - *Notifications (on/off)*

Time Settings
- Alarm
  - *on/off*
  - *Set Alarm Tone*
- Time Format

Phone Settings
- Handset Settings
  - *Ear Volume*
  - *Contrast*
  - *Backlight*
  - *Auto Talk*
  - *Handset Update*
- Base Settings
  - *System PIN*
- Reset to Default

Registration
- Register Handset
- Select Base
- De-Register

Handset ID

1. Ring Tone

a. **Selecting a Ring Tone**

- In the home screen, select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Ring Tone" and confirm.
- Select "Ringtone" and confirm.
- Select "External Calls" or "Internal Calls" and confirm.
- Select the ringtone you want and confirm by pressing the softkey for "Use".

b. Adjusting the Ringer Volume

- In the home screen, select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Ring Tone" and confirm.
- Select "Ring Volume" and confirm.
- Use the up and down key to adjust the volume then confirm.

c. Changing the Beep Tones Settings

To turn beep tones on (*or off*):

Key Beep:

- In the home screen, select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Ring Tone" and confirm.
- Select "Beep Tones" and confirm.
- Select "Key Beep" and confirm.
- Select "Off" or "On" and confirm.

Low Battery:

- In the home screen, select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Ring Tone" and confirm.
- Select "Beep Tones" and confirm.
- Select "Low Battery" and confirm.
- Select "Off" or "On" and confirm.

Out of Range:

- In the home screen, select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Ring Tone" and confirm.
- Select "Beep Tones" and confirm.
- Select "Out Of Range" and confirm.
- Select "Off" or "On" and confirm.

Notifications:

- In the home screen, select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Ring Tone" and confirm.
- Select "Beep Tones" and confirm.
- Select "Notify" and confirm".
- Select "Off" or "On" and confirm.

2. Time

a. Customizing the Alarm Ringer

- In the home screen, select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Time Settings" and confirm.
- Select "Alarm" and confirm.
- Select "Alarm Tone" and confirm.
- Select the ringer type (radio or ringtone) and confirm.

  Note: *If you select a radio channel that proves to be unavailable, a ringtone will be played instead.*

3. Phone Settings

a. Changing the Display Contrast

- In the home screen, select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Handset" and confirm.
- Select "Contrast" and confirm.
- Use the up and down keys to adjust the contrast and confirm.

b. Auto Talk

Auto Talk "ON"- If you pick up the handset from the dock when the phone is ringing, the handset will automatically give you that ringing line without the need to press the green (talk) button.

Auto Talk "OFF" - In the same situation, you will have to press the talk button to answer the ringing phonecall.

- In the home screen, select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Handset" and confirm.
- Select "Auto Talk" and confirm.
- Select "Off" (or "On") and confirm.

c. Restoring the Default Settings

This option allows you to restore the Handset to its original default settings. This procedure will reset the base PIN *(0000 by default)*. However, all the numbers stored in the phonebook, the call log and the most recently-dialed numbers list will be retained.

- In the home screen, select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Default Settings" and confirm.
- Enter the PIN *(0000 by default)* and confirm.

4. Call Lists

a. Understanding Caller Identification Data

If you subscribe to your network provider's "Caller Identification" (caller ID) service, you can see who is calling you before you take the call.

If you subscribe to the "Call Waiting" service as well, the same identification process applies to calls received when you are already on a call.

The calls made and received are logged automatically, together with number, date and time.

The following messages may be displayed on-screen during the call:

- Caller's name and number - *if the caller's number is forwarded by the network,*
- "Withheld" if the caller is using the secrecy function, or "Unavailable" if the network does not forward the name or number,
- "External Call" will display if you do not subscribe to the "Caller Identification" service.

b. Viewing the Call List

If you subscribe to your network provider's "Caller Identification" service, your system will store details of calls made and received, together with their date and time.

5. Using Your Phone With Multiple Handsets

a. Registering/Re-Registering an Extra Handset

You can have up to 5 handsets registered to your Advanced Cable Gateway system base. Refer to Thomson URL to see how addtional Handsets may be purchased.

If you already have 5 handsets registered and you want to swap one of them, you must remove that handset from your list of registered phones (**uninstall** it) before installing the replacement handset.

On the base:

• Switch the base to registration mode.

On the handset:

• Select "Menu" by pressing the softkey.

• Select the settings icon and confirm.

• Select "Registration" and confirm.

• Select "Register Handset" and confirm.

• Select the base to be associated with this handset *(1 to 4)* and confirm.

• Enter the system PIN *(0000 by default)* and confirm.

• Wait 3 to 4 minutes for the confirmation screen.

• Your Handset is now registered.

b. Selecting a Base

Each Handset may be registered to **4** different Gateway bases.

If you register your handset with a non-Thomson Advanced Cable Gateway base, you will not be able to access the data functions.

To change base:

• Select "Menu" by pressing the softkey.

• Select the settings icon and confirm.

• Select "Registration" and confirm.

• Select "Select Base" and confirm.

• Select the number of the base using the up and down *(navigation)* keys *(1 to 4)* and confirm.

• The bases to which the handset is registered are identified by the [ ] symbol.

c. Un-Registering a Handset

Handsets can only be un-registered from another Handset.

- Select "Menu" by pressing the softkey.
- Select the settings icon and confirm.
- Select "Registration" and confirm.
- Select "De-Register" and confirm.
- Enter the secret system PIN *(0000 by default)* and confirm.
- Using the up and down (navigation) keys, select the Handset to be un-registered and confirm.

d. Making/Taking an Intercom Calls

Making an intercom call

- On the keypad, select the number of the internal Handset you want to call *(1 to 5)* then press the *(green)* talk key.

Taking an intercom call

When you receive an internal call, the screen displays the number of the calling Handset and "Internal Call".

- Press *(green)* talk key or the answer softkey to answer the call.

To hang up at the end of the call, press the *(red)* OFF key.

Wiring Example

Splitters - S

Cable Drop

TV converter

TV converter

ACG Modem

TV

TV

PC

S

TV converter

TV

Grounding Wire →

S

S

New Cable Wire

New 2-way splitter:
One leg goes directly to the ACG (modem)
One leg goes directly to the IN on the next splitter

Grounding Rod

---
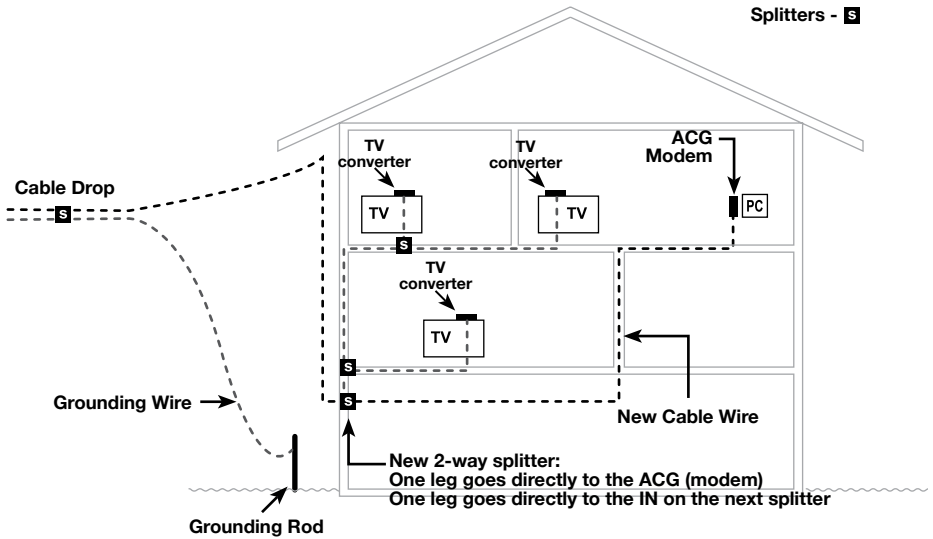
*For optimum performance, be sure to connect your Advanced Cable Gateway to the **first** point the cable enters your home.*

*The splitter must be rated for at least **1GHz**.*

Frequently Asked Questions

Q. ***How does the Advanced Cable Gateway Work?***

A. The Advanced Cable Gateway provides high-speed Internet access as well as cost-effective, telephone voice and fax/modem services for residential subscribers over a CATV (cable TV) infrastructure. It can inter-operate with the PacketCable compliant head end equipment and provide IP-based voice communications. The IP traffic can transfer between the Advanced Cable Gateway and DOCSIS compliant head end equipment. The data security secures upstream and downstream communications.

Q. ***How do I get the system installed?***

A. Your cable service provider can do the installation for you or provide you with a self-installation kit.

Q. ***Can I watch TV, surf the Internet, and talk to my friends through the Advanced Cable Gateway at the same time?***

A. Absolutely!

Q. ***What if my Gateway has a problem?***

A. Consult the troubleshooting appendix or contact your service provider.

Q. ***Where can I get additional handsets?***

A. Refer to URL

Q. ***What do the LED lights mean?***

A. Refer to the "Lights Guide" section in Troublshooting.

Lights Guide

Note - There is a simplified version of this table on page (yada yada)

Legend:

ON	LED is on	**SLOW BLINK**	LED is blinking slowly	
OFF	LED is off	**FAST BLINK**	LED is blinking quickly	
X	LED can be in any state (on, off or blinking)			

	LED LABEL	Power	Battery *(LED desc. when battery is inserted)*	DS/US	ONLINE	LINK	TEL
Boot Up Operation	Power On during 0.25s	OFF	ON	ON	ON	ON	ON
	From Power On to System Synchronization complete	ON	OFF	SLOW BLINK	SLOW BLINK	OFF	OFF
	Before DS scanning: during ~ 15s	ON	OFF	ON	ON	X (Note 3)	OFF
DOCSIS Start-Up Operation *Note 1*	DS scanning & acquiring SYNC	ON	ON	FAST BLINK	OFF	X	OFF
	From SYNC completed, receiving UCD to ranging completed	ON	ON	SLOW BLINK	OFF	X	OFF
	DHCP	ON	ON	ON	FAST BLINK	X	OFF
	config file download	ON	ON	ON	SLOW BLINK	X	OFF
	Registration & BPI initialization	ON	ON	FAST BLINK	FAST BLINK	X	OFF
	Operational (NACO On)	ON	ON	ON	ON	X	OFF
	Operational (NACO Off)	ON	ON	ON	OFF	X	OFF
Telephone	Provisioning	ON	ON	ON	ON	X	FAST BLINK
	Registered	ON	ON	ON	ON	X	ON
LAN Active	No Ethernet or WiFi Link	ON	ON	ON	ON	OFF	X
	Ethernet or WiFi Link	ON	ON	ON	ON	ON	X
	Tx/Rx Ethernet or WiFi Traffic	ON	ON	ON	ON	FLASH	X
	ACG in dect association mode = Page button has been pressed for more than 12s	ON	ON	ON	ON	FAST BLINK	X

*   "X" indicates that this LED is not used to show the state of operation described on this line. Check in this column for the state in which this LED is ON.

Note 1- "Flash" indicates a CM or eMTA initialization process in progress. A "Flash" that does not stop indicates an initialization error.

Note 2- During an AC Power Failure with a bad battery, the operation of the device may not be possible due to lack of battery power; all LEDs may be "Unlit".

Note 3- LED turns on when connection to a PC is detected.

			LED LABEL	Power	Battery (LED desc. when battery is inserted)	DS/US	ONLINE	LINK	TEL
eMTA Normal Operation	AC Power Good	Good Battery	all lines On-Hook	ON	ON	CM Normal Operation	CM Normal Operation	CM Normal Operation	ON
			1 line or more Off-Hook	ON					SLOW BLINK
		Low Battery	all lines On-Hook	ON	SLOW BLINK				ON
			1 line or more Off-Hook	ON					SLOW BLINK
		Bad Battery	all lines On-Hook	ON	OFF *NOTE 2*				ON
			1 line or more Off-Hook	ON					SLOW BLINK
	AC Power Failure	Good Battery	all lines On-Hook	FLASH	OFF	OFF	OFF	OFF	ON
			1 line or more Off-Hook	FLASH					SLOW BLINK
		Low Battery	all lines On-Hook	FLASH	SLOW BLINK				ON
			1 line or more Off-Hook	FLASH					SLOW BLINK
		Bad Battery	all lines On-Hook	OFF	OFF *NOTE 2*	*NOTE 2*	*NOTE 2*	OFF	*NOTE 2*
			1 line or more Off-Hook	OFF					
SW Download Operation	During Software download & while updating the FLASH memory			ON	ON	SLOW BLINK	SLOW BLINK	SLOW BLINK	X
Restore to Factory Settings	ACG is powered off. Press the Page button while powering on the ACG. Hold the page button for 5s			Turn on all LEDs when factory RESET starts					
eMTA Reset (soft Reset)	Upon pressing the Rest button			LEDs behave as if the device is powering up					

Troubleshooting

You can correct most problems you have with your Gateway by consulting the troubleshooting list that follows:

I can't access the internet.

Check all of the connections to your Advanced Cable Gateway.

Your PC is connected to the USB port or your Ethernet card may not be working. Check if each product's documentation for more information.

The Network Properties of your operating system may not be installed correctly or the settings may be incorrect. Check with your ISP or cable company.

All of the lights are flashing in sequence.

This means the Advanced Cable Gateway is automatically updating its system software. Please wait for the lights to stop flashing. The updating process typically lasts less than one minute.

Do not remove the power supply or reset the Advanced Cable Gateway during this process.

I can't get the modem to establish an Ethernet connection.

Even new computers don't always have Ethernet capabilities – be sure to verify that your computer has a properly installed Ethernet card and the driver software to support it.

Check to see that you are using the right type of Ethernet cable.

The modem won't register a cable connection.

If the modem is in Initialization Mode, the INTERNET light will be flashing. Call your Cable Company if it has not completed this 5-step process within 30 minutes, and note which step it is getting stuck on.

The modem should work with a standard RG-6 coaxial cable, but if you are using a cable other than the one your Cable Company recommends, or if the terminal connections are loose, it may not work. Check with your Cable Company to determine whether you're using the correct cable.

If you subscribe to video service over cable, the cable signal may not be reaching the modem. Confirm that good quality cable television pictures are available to the coaxial connector you are using by connecting a television to it. If your cable outlet is "dead", call your Cable Company.

Verify that the Cable Modem service is DOCSIS compliant and PacketCable compliant by calling your cable provider.

I don't hear a dial tone when I use a telephone.

Telephone service is not activated. If the TEL light on the Advanced Cable Gateway stays on while others flash, check with your TSP or cable company.

If the TEL light is blinking when the phone is not in use, contact your service provider.

If the Advanced Cable Gateway is connected to existing house telephone wiring, make sure that another telephone service is not connected. The other service can normally be disconnected at the Network Interface Device located on the outside of the house.

FCC Declaration of Conformity and Industry Canada Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a

Trade Name:	Model: ACG905
Equipment Classification:	Computing Device Accessory
Responsible Party:	Thomson Inc.
	101 W. 103rd St.
	Indianapolis, IN 46290 U.S.A.

Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect this equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

FCC regulations state that unauthorized changes or modifications to this equipment may void the user's authority to operate it.

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

FCC Declaration of Conformity for Handset

Interference Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference; and (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

Privacy of Communications may not be ensured when using this product.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna (that is, the antenna for radio or television that is "receiving" the interference).

- Reorient or relocate and increase the separation between the telecommunications equipment and receiving antenna.

- Connect the telecommunications equipment into an outlet on a circuit different from that to which the receiving antenna is connected.

If these measures do not eliminate the interference, please consult your dealer or an experienced radio/television technician for additional suggestions. Also, the Federal Communications Commission has prepared a helpful booklet, "How To Identify and Resolve Radio/TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Please specify stock number 004-000-00345-4 when ordering copies.

NOTICE: The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Hearing Aid Compatibility (HAC)

This telephone system meets FCC standards for Hearing Aid Compatibility.

Licensing

Licensed under US Patent 6,427,009.

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter."

Service Information

If you purchased or leased your Advanced Cable Gateway directly from your cable company, then warranty service may be provided through your cable provider or its authorized representative. For information on 1) Ordering Service, 2) Obtaining Customer Support, or 3) Additional Service Information, please contact your cable company. If you purchased your Advanced Cable Gateway from a retailer, see the enclosed warranty card.

Glossary

10BaseT　　*Unshielded, twisted pair cable with an RJ-45 connector, used with Ethernet LAN (Local Area Network). "10" indicates speed (10 Mbps), "Base" refers to baseband technology, and "T" means twisted pair cable.*

Authentication　*The process of verifying the identity of an entity on a network.*

DHCP - (*Dynamic Host Control Protocol*)
　　A protocol which allows a server to dynamically assign IP addresses to workstations on the fly.

Ethernet card　*A plug-in circuit board installed in an expansion slot of a personal computer. The Ethernet card (sometimes called a Network Interface Card or NIC) takes parallel data from the computer, converts it to serial data, puts it into a packet format, and sends it over the 10BaseT or 100BaseT LAN cable.*

DOCSIS - *(Data Over Cable Service Interface Specifications)*
　　A project with the objective of developing a set of necessary specifications and operations support interface specifications for Cable Modems and associated equipment.

F Connector　*A type of coaxial connector, labeled CABLE IN on the rear of the Advanced Cable Gateway that connects the modem to the cable system.*

HTTP - *(HyperText Transfer Protocol)*
　　Invisible to the user, HTTP is used by servers and clients to communicate and display information on a client browser.

Hub　　*A device used to connect multiple computers to the Advanced Cable Gateway.*

IP Address　*A unique, 32-bit address assigned to every device in a network. An IP (Internet Protocol) address has two parts: a network address and a host address. This modem receives a new IP address from your cable operator via DHCP each time it goes through Initialization Mode.*

Key exchange　*The swapping of mathematical values between entities on a network in order to allow encrypted communication between them.*

MAC Address　*The permanent "identity" for a device programmed into the Media Access Control layer in the network architecture during the modem's manufacture.*

Network Driver　*A file that is loaded on the computer to allow the computer to recognize the Ethernet card or USB port*.

NID - *(Network Interface Device)*

The interconnection between the internal house telephone wiring and a conventional telephone service provider's equipment. These wiring connections are normally housed in a small plastic box located on an outer wall of the house. It is the legal demarcation between the subscriber's property and the service provider's property.

PacketCable *A project with the objective of developing a set of necessary telephony specifications and operations support interface specifications for Advanced Cable Gateways and associated equipment used over the DOCSIS based cable network.*

PSTN - *(Public Switched Telephone Network)*
The worldwide voice telephone network which provides dial tone, ringing, full-duplex voice band audio and optional services using standard telephones.

Provisioning *The process of enabling the Media Terminal Adapter (MTA) to register and provide services over the network.*

TCP/IP - *(Transmission Control Protocol/Internet Protocol)*
A networking protocol that provides communication across interconnected networks, between computers with diverse hardware architectures and various operating systems.

TFTP - *(Trivial File Transfer Protocol)*
The system by which the Media Terminal Adapter's configuration data file is downloaded.

TSP - *(Telephony Service Provider)*
An organization that provides telephone services such as dial tone, local service, long distance, billing and records, and maintenance.

Universal Serial Bus - *(USB)*
USB is a "plug-and-play" interface between a computer and add-on devices, such as an Advanced Cable Gateway.

Xpress Technology
One of the popular performance-enhancing WiFi technologies, designed to improve wireless network efficiency and boost throughput. It is more efficient in mixed environments, and it can work with 802.11a/b/g networks.

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