



Arion 2004



Installation Guide

Revision 1.1
10/04/2002



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Important Safety Instructions

If you experience technical difficulty with the Arion 2004 please contact the distributor or point of sales for help.

Never install telephone wiring during a lightning storm.

Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.

Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.

Use caution when installing or modifying telephone lines.

Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement or near a swimming pool.

Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.

Do not use the telephone to report a gas leak in the vicinity of the leak.

Use only the power supply indicated in this manual.

SAVE THESE INSTRUCTIONS

Introduction

The Alpha Telecom, Inc. USA Arion 2004 provides the physical interface for any P-Phone to reach the Next Generation IP Network. The Arion 2004 connects directly to the LAN on the network side and continues to provide P-Phone interface to the end user side.

The Arion 2004 provides four (4) P-Phone interfaces, one (1) 10/100Base-T interface, one (1) DB9 RS-232 interface, and multiple LED's for status display. The Gateway is compact and can be desktop or wall mounted. It's an excellent solution for businesses to help reduce or eliminate the long distance or international phone charges.

This installation guide describes how to install the Arion 2004 for use with P-Phones within your IP network.

Installation Guide: For current revision of latest documentation, please refer to the support page on: www.alpha-tele.com

Package Contents

One Arion 2004 unit
One RJ45 to RJ45 CAT5 LAN cable
One 12.2 Watt power supply
One Local Power cable
Installation Guide
Quick Reference Guide
Wall Mounting Kit

Front Panel

Figure 1 shows the Arion 2004 in perspective view to show all of the LEDs and labels. There are five LEDs in the front panel of the Arion 2004. Each of the first four LEDs from the left indicates the status of the labeled port. The last LED indicates activation of the Arion 2004.



Figure 1. Arion 2004 Perspective View

Rear Panel

The Arion 2004 rear panel shown in **Figure 2** has one RJ45 LAN (10/100Base-T) connector, a DB9 (RS-232) connector, four RJ11 P-Phone connectors, and a Mini DIN type power connector from left to right.

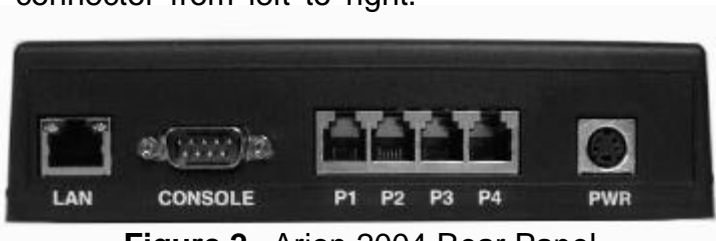


Figure 2. Arion 2004 Rear Panel

Wiring Instructions

Figure 3 shows the wiring diagram of the Arion 2004 with one typical setup. The equipment in reference are the Arion 2004, P-Phones, and the LAN Network. Specific step-by-step instructions follow.

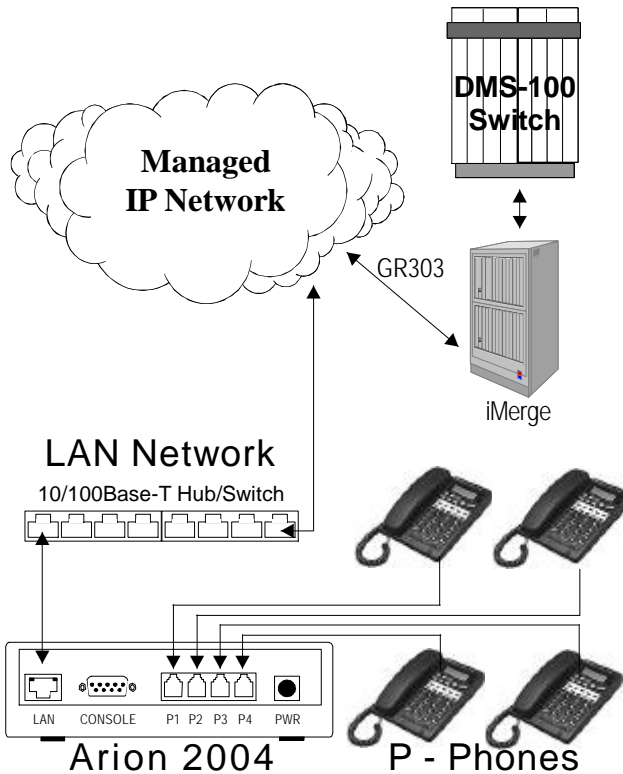


Figure 3. Interface Wiring Diagram

Step 1: Connect the DC power plug of the power supply to the power connector on the rear of the Arion 2004 as shown in **Figure 4**.

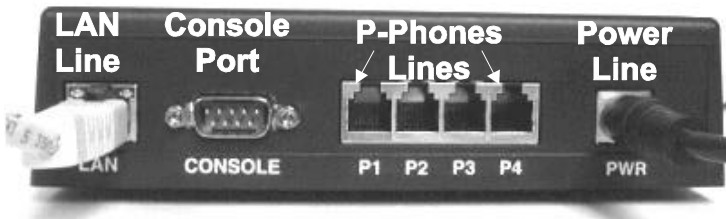


Figure 4. Rear Cable Connectors

Step 2: Connect the RJ45 CAT5 LAN cable from your LAN Hub or Switch as shown in **Figure 4**.

Step 3: Connect P1, P2, P3, and P4 (**P-Phones**) to the appropriate connectors on the Arion 2004 as shown in **Figure 4**.

Step 4: Connect the Power Supply from the Arion 2004 to an AC outlet.

Step 5: Program the Arion 2004 with appropriate information. Refer to Appendix B for detailed programming information.

Diagnostics

Initial connection to the AC Outlet, the Arion 2004 should have the following LED Status.

LEDs	Status
1 ~ 4	Solid: Px (x=1~4) Interface is not configured
	Fast Blinking (1Hz, 500ms ON / 500ms OFF): Px (x=1~4) is in the process of Gatekeeper discovery and registration
	Slow Blinking (1Hz, 100ms ON / 900ms OFF): Px (x=1~4) completes the registration and is waiting the establishment of the signaling channel
	Off: Px (x=1~4) is ready for making calls
ACT	Solid: Link Activated
	Blinking: Link Activated with traffic transmitting
	Off: Link Deactivated

Table 1. LED Status Indicators

If these steps do not help, refer to Appendix U: Troubleshooting Tips.

Ethernet LED Status

LEDs	10Base-T	100Base-TX
GREEN	Off	On
ORANGE	n/a	n/a

Table 2. Ethernet LED Status Indicators

Application Guideline Information

This section will describe typical application or usage of the Arion 2004.

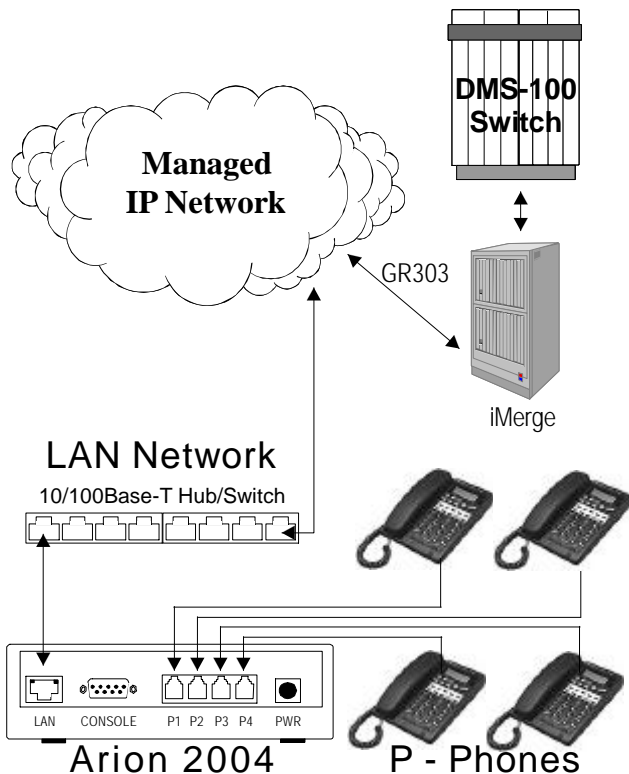


Figure 5. Application Illustration

The application shows the Arion 2004 being used in a network environment supporting a P-Phones. The Arion 2004 is connected to a 10/100Base-T LAN Hub/Switch via the LAN Connector on the Arion 2004. **(NOTE THE MAXIMUM LENGTH OF THE LAN CABLE PER NETWORK IS 328 FEET, MAXIMUM LENGTH FOR THE P-PHONE CABLE IS 3KFT AWG 24).**

Application Information

(Point-to-point Telephone Relocation procedure)

This is a step-by-step procedure in moving one P-Phone user from one location to another using the P-Phone VoIP Gateway:

- 1) Disconnect the P-Phone.
- 2) By using the WEB GUI remove or delete Alias from the VoIP Gateway serving the current location (see Quick Reference Guide for further detail).
 - a) The IP Address of the VoIP Gateway serving the user before the move and also the IP Address of the VoIP Gateway serving the user in the new location is needed. (You can connect directly to the console port using a command to find out the IP address of the unit). Start the Browser session and use WEB GUI to configure.
- 3) Add the same Alias, that has been removed from step 2 above, to the VoIP Gateway serving the user in the new location.
- 4) Reconnect the P-Phone to the proper connector on the VoIP Gateway serving the new location.
- 5) Upon re-registering with iMerge and new VoIP Gateway, check to make sure that one can draw dial tone by going off-hook on the P-Phone set.

Appendix A: Ordering Information

To order any of the following components, please contact Alpha Telecom, Inc. U.S.A. at (256) 772-5245 or visit our webpage: www.alpha-tele.com.

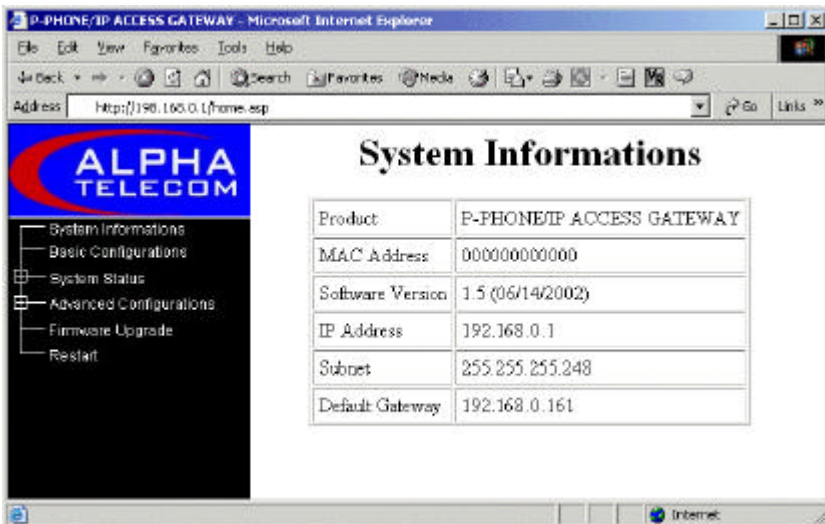
Arion 2004 Complete Kit	555-2004GA
Arion 2004 Installtion Guide	035020041000
12.2W Power Supply	272-12000
Local Power Cable	031040000010
6 foot RJ45-RJ45 CAT5 Cable	220-45450
Arion 2004 Basic Setup (Quick Reference Guide)	03520041100
Wall Mount Kit (2-wall anchors/2-screws)	033004011000

Table 3. Ordering Information

Appendix B: Setup Configuration

Configuring Your Arion 2004 for first time users.

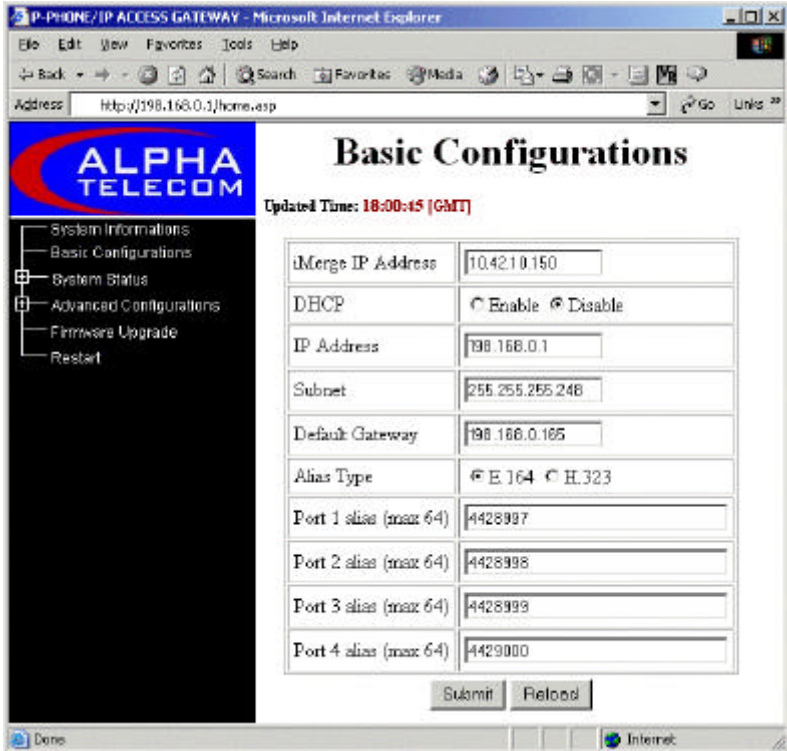
1. Open your Web browser (i.e. Internet Explorer or Netscape Navigator).
2. In the “Address” field, type `http://192.168.0.1` and press the <ENTER> key.
 - ▶ 192.168.0.1 with DHCP disabled will be the manufacturer default setting
3. In the “System Information” page of the Arion Web console, the following information will be shown:
 - a. Product
 - b. MAC Address
 - c. Software Version
 - d. IP Address
 - e. Subnet
 - f. Default Gateway



Appendix B: Setup Configuration

4. The following options are available on the left hand column of the GUI on the Arion 2004 Web Console:
 - a. System Informations
 - b. Basic Configurations - Primary setup page used for configuring the device.
 - c. System status - Providing the status of the device
 - d. Advanced Configuration - Advanced features used to set up the device. It includes:
 - i. Administration
 - ii. Ethernet and TCP/IP
 - iii. H.323
 - iv. RTP/RTCP
 - v. Systems log
 - vi. Restore factory settings
 - e. Firmware Upgrade - Connecting with TFTP server to upgrade the latest version of firmware.
 - f. Restart - Reset and restart the device
5. For Basic Configuration of the unit, click “Basic Configuration” on the left hand column. The following items will show. Continue with Appendix C Step 1.

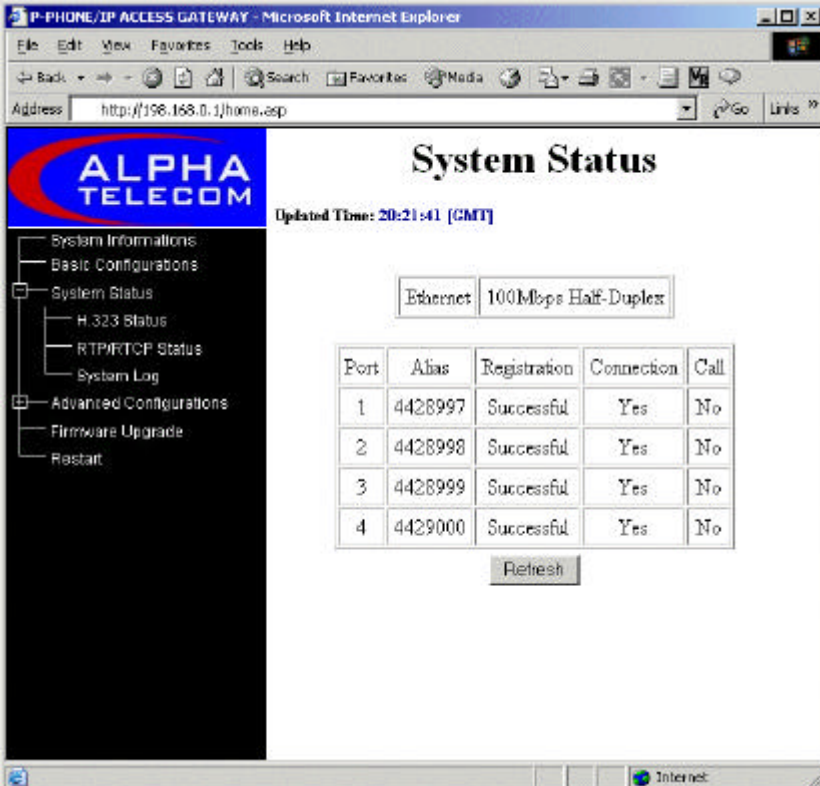
Appendix C: Basic Configuration



1. The following parameters can be found under this Web page:
 - a. IP Address of iMerge (CFG)
 - b. Enable DHCP service (for dynamic IP setting) or enter IP address (for static address).
 - c. Entering the Alias information (provided by service provider or telephone company).
2. Click “RESTART” Button to activate the reset/restart unit function.
3. A visual Restart Timer will display. Device is doing a restart process. All the changes will be saved and be used from now on.
4. RELOAD will reset all parameters on this page, to original values or settings.

Appendix D: System Status

Selecting the System Status on the left hand column, will display the speed of the Ethernet interface and the current status of the four P-Phone interfaces (P1, P2, P3, and P4).



The screenshot shows a web browser window titled "P-PHONE/IP ACCESS GATEWAY - Microsoft Internet Explorer". The address bar shows "http://198.168.0.1/home.asp". The page content includes the Alpha Telecom logo, a navigation menu on the left, and a main content area titled "System Status".

System Status
Updated Time: 20:21:41 (GMT)

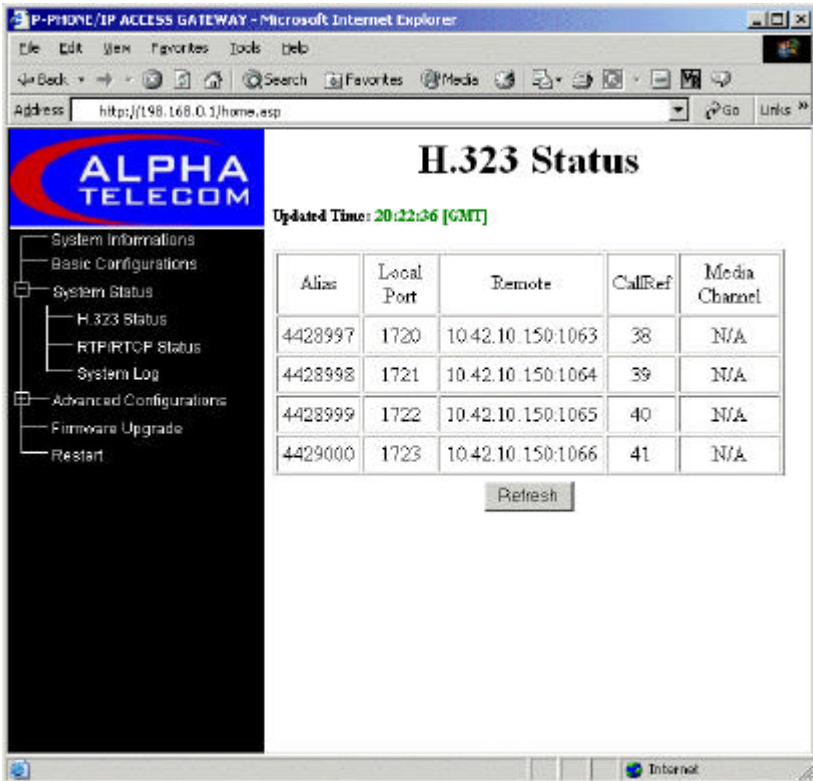
Ethernet 100Mbps Half-Duplex

Port	Alias	Registration	Connection	Call
1	4428997	Successful	Yes	No
2	4428998	Successful	Yes	No
3	4428999	Successful	Yes	No
4	4429000	Successful	Yes	No

Refresh

Appendix E: H.323 Status

Selecting H.323 Status on the left hand column under System Status, will display the current status of the connection between the device and the iMerge.



The screenshot shows a web browser window titled "P-PHONE/ IP ACCESS GATEWAY - Microsoft Internet Explorer". The address bar shows "http://198.168.0.1/home.asp". The page content includes the Alpha Telecom logo and a navigation menu on the left. The main content area is titled "H.323 Status" and shows an "Updated Time: 20:22:36 [GMT]". Below this is a table with the following data:

Alias	Local Port	Remote	CallRef	Media Channel
4428997	1720	10.42.10.150:1063	38	N/A
4428998	1721	10.42.10.150:1064	39	N/A
4428999	1722	10.42.10.150:1065	40	N/A
4429000	1723	10.42.10.150:1066	41	N/A

Below the table is a "Refresh" button.

Appendix F: RTP/RTCP Status

Selecting RTP/RTCP Status on the left hand column under System Status, will display the current status of the RTP and RTCP channels per port.

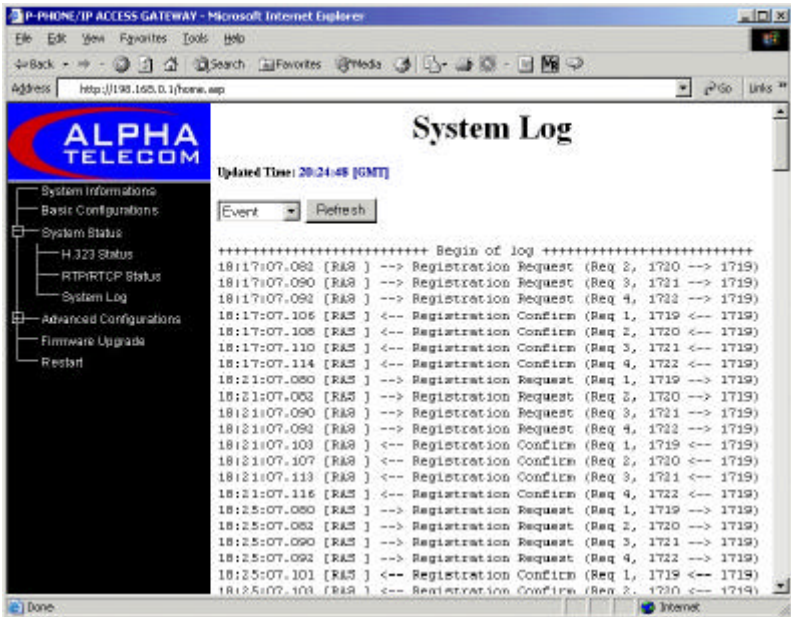
The screenshot shows a Microsoft Internet Explorer browser window displaying the 'RTP/RTCP Status' page. The browser's address bar shows 'http://198.168.0.1/home.asp'. The page features the Alpha Telecom logo and a navigation menu on the left. The main content area displays the title 'RTP/RTCP Status' and the updated time '17:01:04 [GMT]' for IP address '10.42.10.150:1063'. A table lists the status for four ports, each with RTP and RTCP channels. A 'Refresh' button is located below the table.

Port	Channel	Local Port	Remote
1	RTP	N/A	N/A
	RTCP	N/A	N/A
2	RTP	6002	10.42.10.150:45828
	RTCP	6003	10.42.10.150:45829
3	RTP	6000	10.42.10.150:45572
	RTCP	6001	10.42.10.150:45573
4	RTP	N/A	N/A
	RTCP	N/A	N/A

Refresh

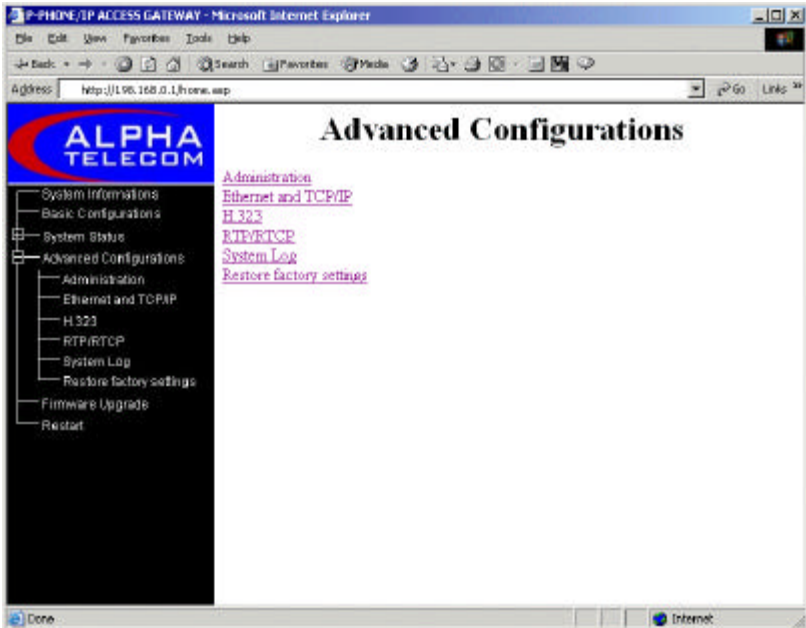
Appendix G: System Log

Selecting System Log on the left hand column under System Status, will display the current system log entries.



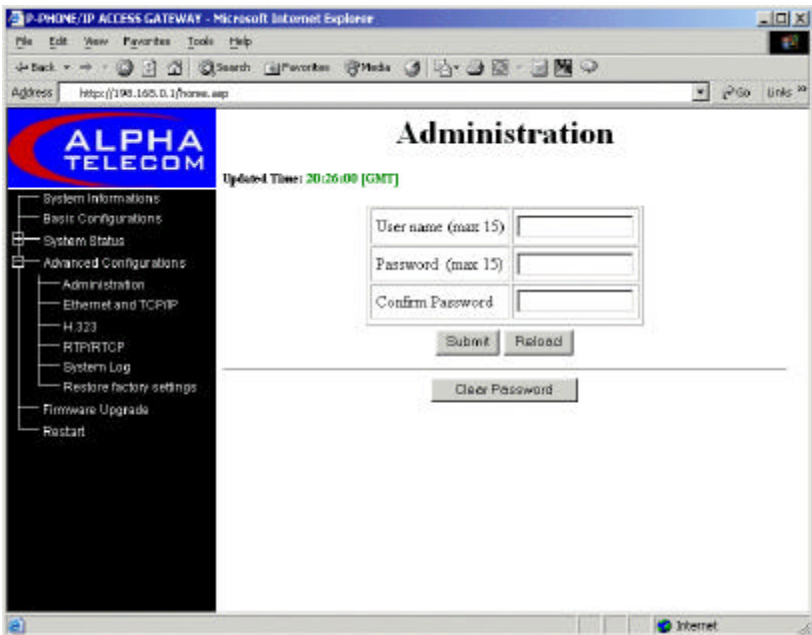
Appendix H: Advanced Configurations

Selecting Advanced Configurations on the left hand column, will display a list of advanced selections. These are Administration, Ethernet and TCP/IP, H.323, RTP/RTCP, System Log, and Restore factory settings.



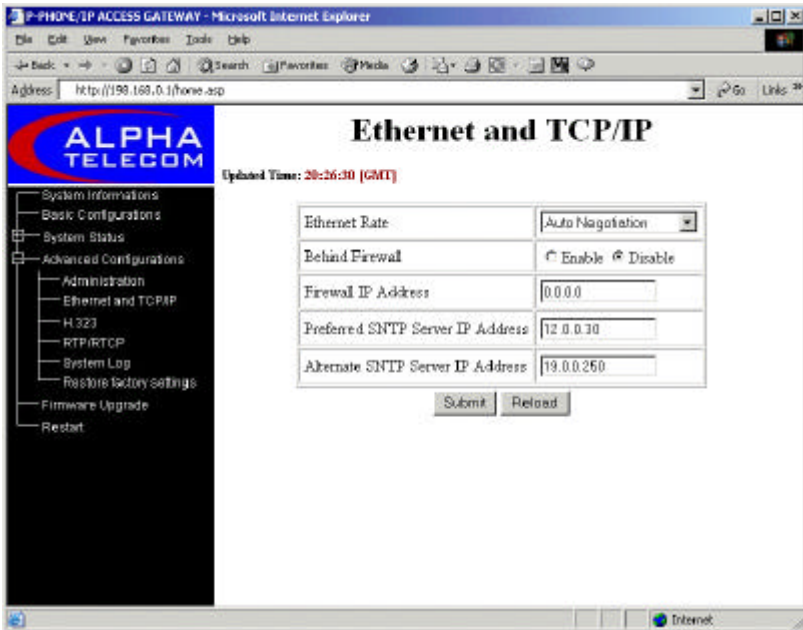
Appendix I: Administration

1. Open your Web browser (i.e. Internet Explorer or Netscape Navigator).
2. In the “Address” field, type IP Address of the device and press the <ENTER> key.
3. Click “+” sign of “Advanced Configurations” to expand the sub-menus.
4. Click “Administrator”.
5. Enters Username, Password, and Confirmed Password fields.
6. Click “Submit Button”.
7. Click “Restart” item on the left of menu and enter “Restart” page.
8. Click “RESTART” Button to activate the reset/restart unit function.
9. RELOAD will reset all parameters on this page, to original values or settings.



Appendix J: Ethernet and TCP/IP

Selecting Ethernet and TCP/IP on the left hand column under the Advanced Configurations, will display the settings for the LAN Ethernet connection rate, selection if behind a firewall, the firewall's IP Address, and SNTP (Simple Network Time Protocol) IP Address.



Appendix K: H.323 Configurations

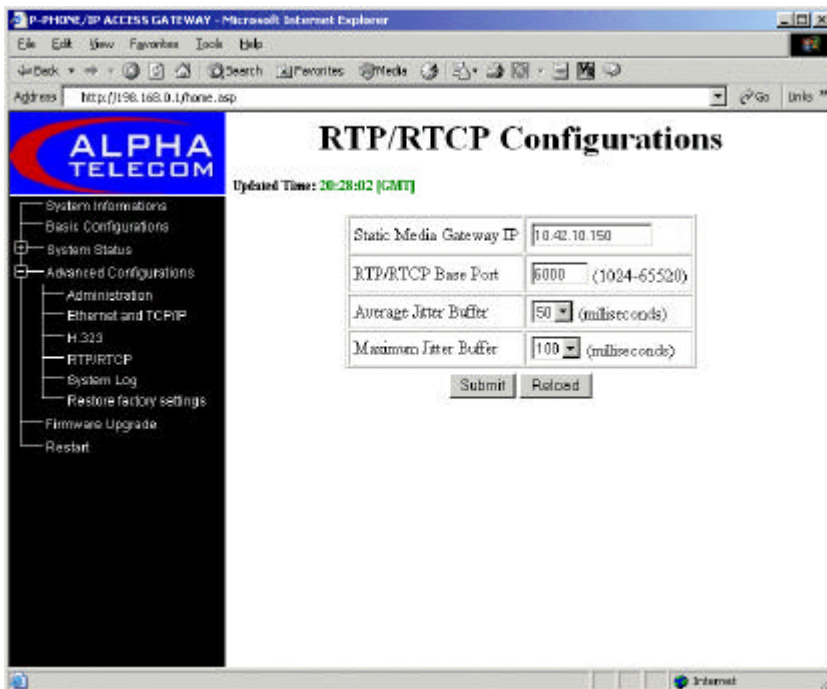
Selecting H.323 Configurations on the left hand column under Advanced Configurations, will display the port settings for the device.

The screenshot shows the 'H.323 Configurations' page in a Microsoft Internet Explorer browser window. The browser's address bar shows 'http://198.168.0.1/home.asp'. The page features the Alpha Telecom logo and a navigation menu on the left. The main content area is titled 'H.323 Configurations' and includes a 'Updated Time: 20:26:57 [GMT]' timestamp. The configuration is presented in a table format with the following sections:

Access Gateway	Gatekeeper Discovery	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
	H.225.0 RAS Port	<input type="text" value="1719"/> (1024-65535)
	H.225.0 Signaling Port	<input type="text" value="1720"/> (1024-65535)
iMerge	H.225.0 RAS Port	<input type="text" value="1719"/> (1024-65535)
Alias of Port 1 4428997	<input type="checkbox"/> Enable H.235	
	Password (6 to 15)	<input type="text"/>
	Confirm Password	<input type="text"/>
Alias of Port 2 4428998	<input type="checkbox"/> Enable H.235	
	Password (6 to 15)	<input type="text"/>
	Confirm Password	<input type="text"/>
Alias of Port 3 4428999	<input type="checkbox"/> Enable H.235	
	Password (6 to 15)	<input type="text"/>

Appendix L: RTP/RTCP Configurations

Selecting RTP/RTCP Configurations on the left hand column under Advanced Configurations, will display IP Address for Static Media Gateway (iMerge's Firewall), the port settings for the device, and selections for Jitter Buffer.



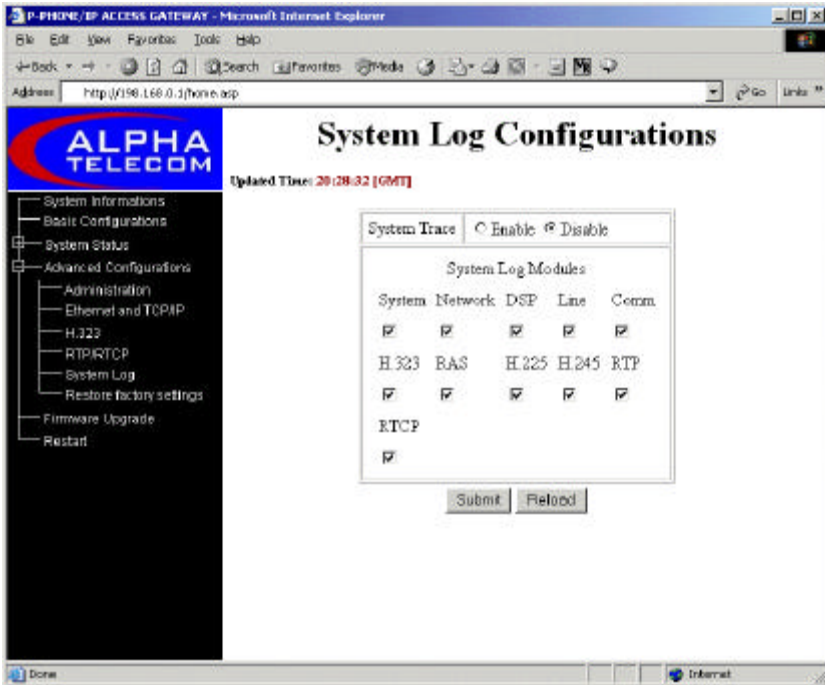
The screenshot shows a web browser window titled "IP-PHONE/3P ACCESS GATEWAY - Microsoft Internet Explorer". The address bar shows "http://196.168.0.1/phone.asp". The page content includes the Alpha Telecom logo and a navigation menu on the left. The main content area is titled "RTP/RTCP Configurations" and shows the following configuration fields:

Static Media Gateway IP	<input type="text" value="10.42.10.150"/>
RTP/RTCP Base Port	<input type="text" value="6000"/> (1024-65530)
Average Jitter Buffer	<input type="text" value="50"/> (milliseconds)
Maximum Jitter Buffer	<input type="text" value="100"/> (milliseconds)

Below the configuration fields are two buttons: "Submit" and "Reset". The page also displays "Updated Time: 20:28:02 [GMT]" in green text.

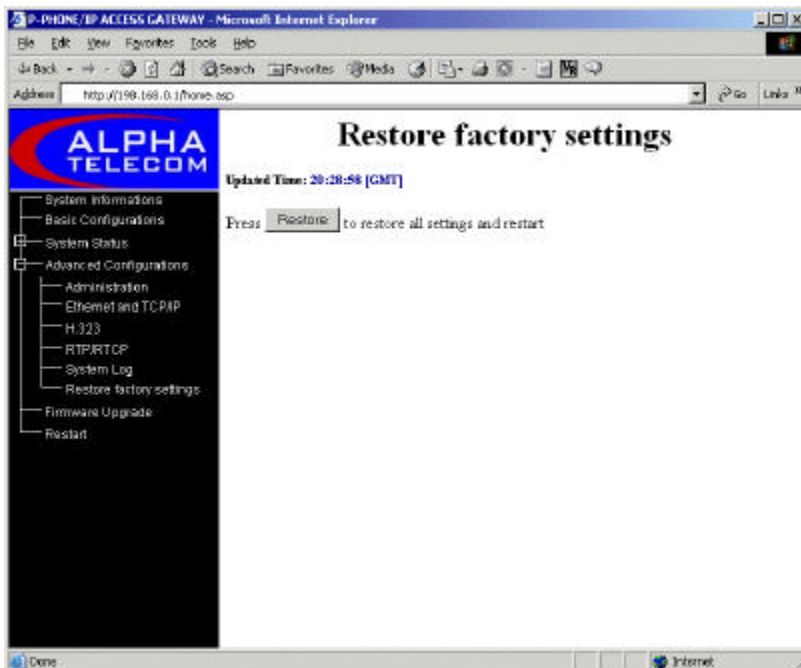
Appendix M: System Log Configurations

Selecting System Log Configurations on the left hand column under Advanced Configurations, will display selections to Enable/Disable System Trace, selection of modules to trace, which includes: System, Network, DSP, Line, Comm, H.323, RAS, H.225, H.245, RTP, and RTCP.



Appendix N: Restore factory settings

Selecting Restore factory settings on the left hand column under Advanced Configurations, will allow you to reset the device back to the original factory settings.

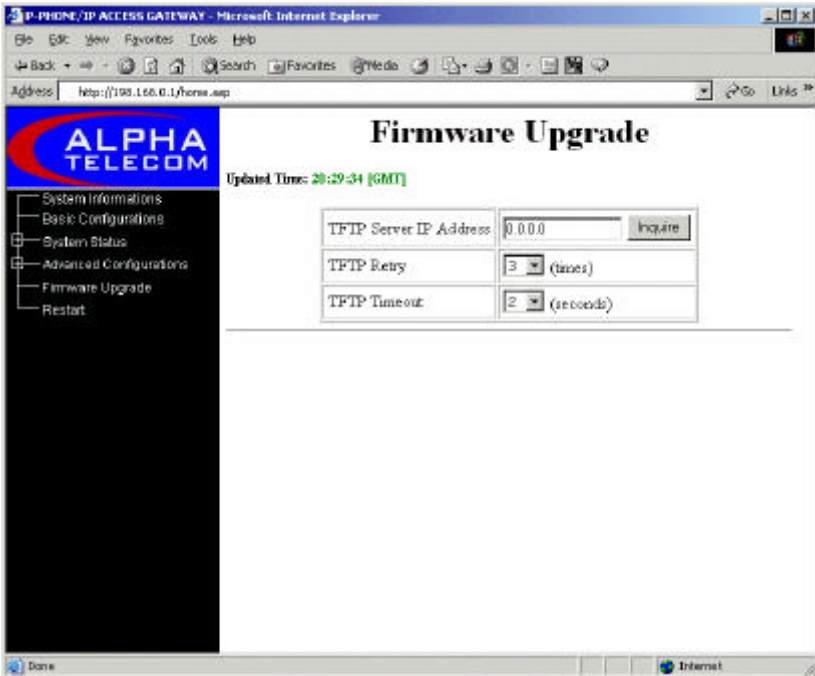


Default Parameters Settings

Parameters	Factory Default setting	Valid Range
H.323		
Access Gateway H.225 RAS port	<i>1719</i>	1719 – 1722
Access Gateway H.225 signaling port	<i>1720</i>	1720 – 1723
IMerge H.225 RAS port	<i>1710</i>	1710 – 1713
TOS Call Precedence Signaling	<i>4</i>	0 – 7
TOS Call Precedence RTP	<i>5</i>	0 – 7
TOS Call Precedence Management	<i>5</i>	0 – 7
RTP/RTCP		
RTP Base Port	<i>6000</i>	6000 – 6007
Average Jitter Buffer	<i>50 ms</i>	10 – 90
Maximum Jitter Buffer	<i>100 ms</i>	10 – 90

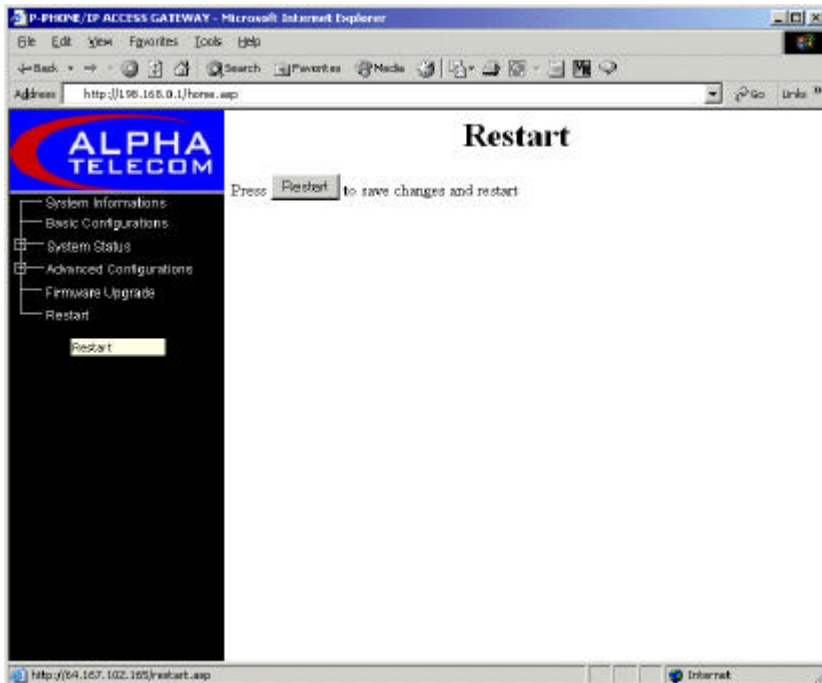
Appendix O: Firmware Upgrade

Selecting Firmware Upgrade on the left hand column, will display the TFTP Server information. The listing includes: TFTP Server IP Address, TFTP Retry, and TFTP Timeout settings.



Appendix P: Restart

Selecting Restart on the left hand column, will allow you to save changes and restart the device.



Appendix Q: Firewall Port Settings

To configure the Firewall Port settings for H.323, select the H.323 configuration from the Advanced Configurations Web Page.

1. 4 UDP Ports for RAS process.
 - a. The default port setting is 1719. Valid port setting range is 1719 to 1722.
2. 4 TCP Ports for the signaling channel.
 - a. The default port setting is 1720. Valid port setting range is 1720 to 1723.

To configure the Firewall Port settings for RTP/RTCP, select the RTP/RTCP configuration from the Advanced Configurations Web Page.

1. 8 UDP Ports for the bearer calls (RTP/RTCP).
 - a. The default port setting is 6000. Valid port setting range is 6000 to 6007.

Appendix R: Interface Pin Assignments

Each interface has specific pinouts which are important for electricians and technicians to know. Anyone installing wiring for the Arion 2004 should pay close attention to this information. All interfaces described here are located on the rear panel of the Arion 2004.

Pin	Function	Pin	Function
1	—	2	TIP
3	RING	4	—

Table 4. P-Phone Connector Pin Assignments

Pin	Function	Pin	Function
1	-48V	2	+5V
3	GND	4	GND

Table 5. Power Connector Pin Assignments

Pin	Function	Pin	Function
1	TD+	2	TD-
3	RD+	4	N/C
5	N/C	6	RD-
7	N/C	8	N/C

Table 6. LAN Connector Pin Assignments

Pin	Function	Pin	Function
1	DCD	6	DSR
2	RD	7	RTS
3	TD	8	CTS
4	DTR	9	RI
5	GRD		

Table 7. DB9 (RS-232) Connector Pin Assignments

Appendix S: Cable Pinouts

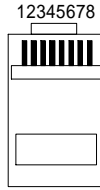


Figure 6. RJ45 LAN Pin Locations

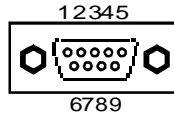


Figure 7. DB9 Pin Locations

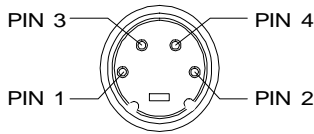


Figure 8. Power Pin Locations

Appendix T: Power Supply Pinouts

The Arion 2004 is powered by an AC power supply included with the unit.

Unit	Input	Output
12.2 Watt	100~240VAC@50/60Hz	-48VDC@0.15mA
		+5VDC@1.0A

Table 8. Power Supply Information

Appendix U: Troubleshooting Tips

▶ **What is the default IP address of the Arion 2004?**

The factory default IP Address is 192.168.0.1

▶ **What do you do when you face an error during configuration?**

You can reset all the parameters in the Arion 2004 as the factory setting through the Web page "Restore Factory Setting".

▶ **If there is no dial tone or the telephone cannot place calls, what do I do?**

Verify the following:

- i. Cabling is in working condition and installed correctly
- ii. The Arion 2004 is powered on and programmed, the P-Phones are configured correctly.
- iii. Verify the Arion 2004 can be seen on the network by using ping.
- iv. Access the Web page "System Status" to check the communications between the Arion 2004 and the Switch.

▶ **What codecs are supported??**

The Arion 2004 supports G.711 PCM CODEC.

Appendix V: Command on Console

To access the console menus, the user must run a communication program such as HyperTerminal accessory of MS-Windows with the following parameters setting:

Baud Rate: 19200, Data Bits: 8, Stop Bits: 1, Parity: None, FlowControl: None

(1) Commands in normal state. (Without Supervisor login)

1. ? or Help
 - Display command : ? **command**
 - Display all commands : ?
 - Display command : **Help command**
 - Display all commands : **Help**

2. Login
 - Login as administrator: **Login name password**

3. ResetAdmin
 - Reset the password: **ResetAdmin <MAC Address>**

(2) Commands in Login state: (or Admin username and password do not setup yet)

1. ? or Help
 - Display command : ? **command**
 - Display all commands : ?
 - Display command : **Help command**
 - Display all commands : **Help**

2. Logout
 - Logout and discard changes : **Logout**

3. Macaddr
 - Display MAC Address : **Macaddr**

4. Dhcp
 - Display DHCP status : **Dhcp**
 - Turn on DHCP : **Dhcp on**
 - Turn off DHCP : **Dhcp off**

5. IpAddr
 - Display IP Address : **Ipaddr**
 - Set Static IP Address : **Ipaddr xxx.xxx.xxx.xxx**

6. Subnet
 - Display Static Subnet : **Subnet**
 - Set Static Subnet : **Subnet xxx.xxx.xxx.xxx**

Appendix V: Command on Console

7. Gateway
 - Display Default Gateway : **Gateway**
 - Set Default Gateway : **Gateway xxx.xxx.xxx.xxx**

8. Status
 - Display current settings and system states:
 - Status SysInfo**
 - Status BasicConf**
 - Status Line**
 - Status H323**
 - Status SysLog [Event | Decode]**

9. Submit
 - Save changes and restart : **Submit**

10. Restore
 - Restore the factory default values : **Restore**

11. Trace
 - Display trace status : **Trace**
 - Turn on trace : **Trace on**
 - Turn off trace : **Trace off**

Appendix W: Acronyms

A (mA)	Amp (milli-Amp)
AC	Alternating Current
DC	Direct Current
DHCP	Dynamic Host Configuration Protocol
Hz	Hertz
GUI	Graphical User Interface
IP	Internet Protocol
RTCP	Real-time Transport Control Protocol
RTP	Real-time Transport Protocol
SNTP	Simple Network Time Protocol
TCP	Transmission Control Protocol
TOS	Type of Service
TFTP	Trivial File Transfer Protocol
V	Volts
VAC	Volts AC
VDC	Volts DC

FCC Notice

This device complies with all FCC Part 15 rules and regulations. Operation is subject to the following 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.

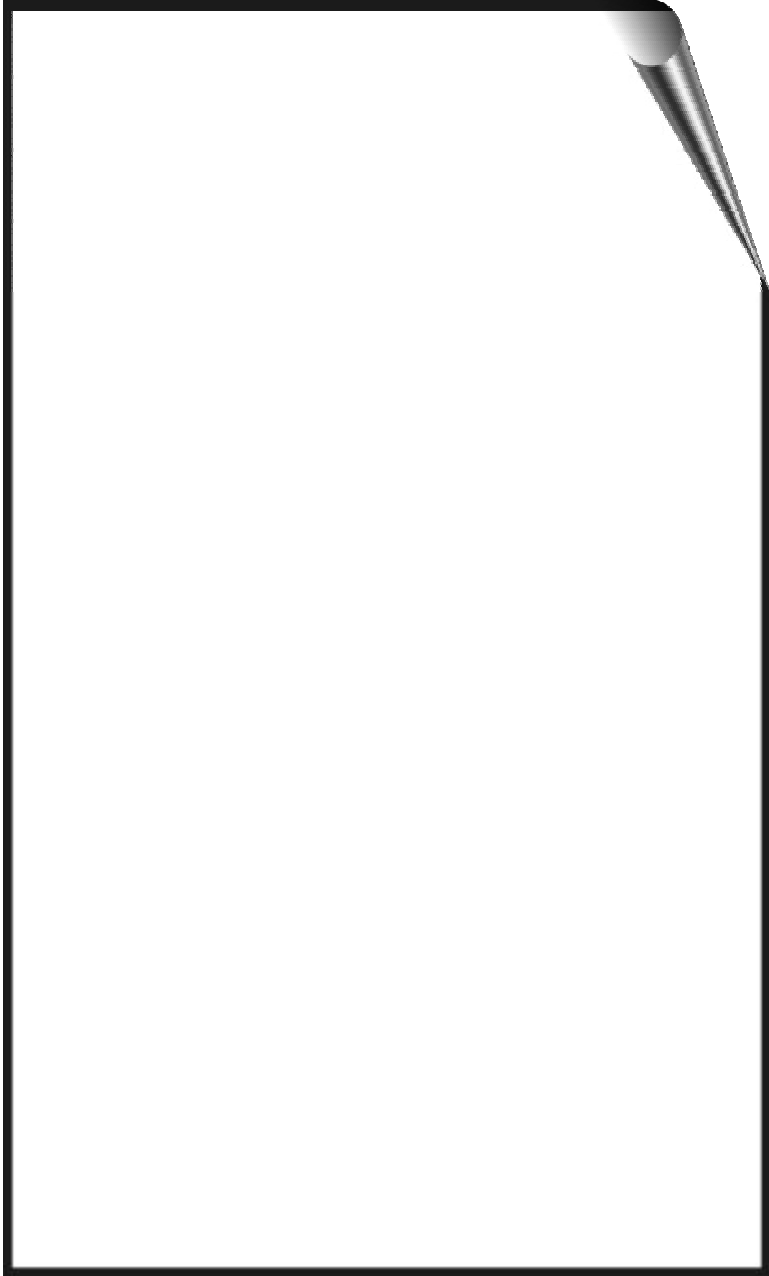
If your Arion 2004 causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advanced notice isn't practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC if you believe it is necessary.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could effect the operation of your equipment. If they do, you will be given advanced notice so as to give you an opportunity to maintain uninterrupted service.

ETL/ETLC Notice

This device complies with all ETL and ETLC safety requirements.

NOTES:



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Wall Mounting Template

