

8373 Zone Paging Adapter FW Version 1.5

Installation & Configuration



Order Codes

8373 Zone Paging Adapter

Table of Contents

| | |
|---|----|
| IMPORTANT SAFETY INFORMATION | 8 |
| ABOUT THE ALGO 8373 ZONE PAGING ADAPTER | 9 |
| TYPICAL APPLICATION | 10 |
| GETTING STARTED - QUICK INSTALL & TEST | 11 |
| INSTALLATION | 12 |
| WEB INTERFACE..... | 12 |
| SIP PAGING: INTRODUCTION | 13 |
| SIP PAGING: SINGLE SIP EXTENSION | 14 |
| SIP PAGING: MULTIPLE SIP EXTENSIONS | 15 |
| SIP PAGING: 9 ZONES USING ONE AMPLIFIER | 16 |
| SIP PAGING: USING MULTICAST | 18 |
| MULTICAST PAGE ZONES | 19 |
| POLYCOM™ GROUP PAGING | 20 |
| WIRING CONNECTIONS..... | 21 |
| NETWORK CONNECTION (FRONT) | 21 |
| LINE OUT XLR-MINI (FRONT)..... | 22 |
| TERMINAL BLOCK LINE OUT (BACK) | 22 |
| TERMINAL BLOCK RELAY OUT (BACK)..... | 22 |
| CHANNEL 1/2/3 (BACK) | 22 |
| AMP IN (BACK)..... | 22 |
| TERMINAL BLOCK COVER..... | 22 |
| BLUE LED INDICATORS | 23 |
| SIP | 23 |
| CHANNEL 1/2/3 | 23 |
| RESET..... | 23 |
| WEB INTERFACE LOGIN | 24 |
| STATUS..... | 24 |
| BASIC SETTINGS TAB – SIP..... | 25 |
| SIP DOMAIN (PROXY SERVER)..... | 25 |
| PAGE EXTENSION | 25 |
| AUTHENTICATION ID | 26 |
| AUTHENTICATION PASSWORD..... | 26 |
| BASIC SETTINGS TAB – FEATURES | 27 |
| TEST TONE | 27 |
| TEST SPEAKER VOLUME..... | 27 |
| PAGE SPEAKER VOLUME..... | 28 |

| | |
|---|-----------|
| PAGE MODE | 28 |
| PAGE TIMEOUT | 28 |
| PAGE TONE | 28 |
| G.722 SUPPORT..... | 28 |
| AUTOMATIC GAIN CONTROL (AGC)..... | 28 |
| OUTPUT LEVEL | 29 |
| BASIC SETTINGS TAB – CHANNELS | 30 |
| NUMBER OF ZONES | 31 |
| MULTICAST | 32 |
| MULTICAST IP ADDRESSES | 32 |
| BASIC SETTINGS TAB - MULTICAST (MASTER SETTINGS) | 33 |
| MULTICAST MODE (MASTER/SENDER SELECTED) | 33 |
| NUMBER OF ZONES (REGULAR MULTICAST TYPE SELECTED) | 33 |
| MULTICAST TYPE | 33 |
| SPEAKER PLAYBACK ZONES..... | 34 |
| BASIC SETTINGS TAB - MULTICAST (SLAVE SETTINGS)..... | 35 |
| MULTICAST MODE (SLAVE SELECTED)..... | 35 |
| NUMBER OF ZONES (REGULAR MULTICAST TYPE SELECTED) | 35 |
| MULTICAST TYPE - REGULAR | 35 |
| MULTICAST TYPE – POLYCOM GROUP PAGING/PUSH-TO-TALK..... | 35 |
| ADDITIONAL FEATURES TAB – MORE PAGE EXTENSIONS | 37 |
| ADVANCED SETTINGS TAB - NETWORK | 38 |
| PROTOCOL | 38 |
| VLAN MODE..... | 38 |
| VLAN ID | 39 |
| VLAN PRIORITY | 39 |
| DIFFERENTIATED SERVICES (6-BIT DSCP VALUE) | 39 |
| ADVANCED SETTINGS TAB – ADMIN | 40 |
| PASSWORD..... | 40 |
| CONFIRMATION | 40 |
| DEVICE NAME (HOSTNAME)..... | 41 |
| INTRODUCTION SECTION ON STATUS PAGE | 41 |
| WEB INTERFACE SESSION TIMEOUT..... | 41 |
| PLAY TONE AT STARTUP | 41 |
| LOG LEVEL..... | 41 |
| LOG METHOD | 41 |
| LOG SERVER | 41 |
| WEB INTERFACE PROTOCOL | 41 |
| FORCE STRONG PASSWORD..... | 42 |
| ALLOW SECURE SIP PASSWORD | 42 |
| SNMP SUPPORT (V1 GET ONLY) | 42 |
| ADVANCED SETTINGS TAB – TIME..... | 43 |

| | |
|--|-----------|
| TIME ZONE | 43 |
| NTP TIME SERVERS 1/2/3/4..... | 43 |
| NTP TIME SERVER SOURCE | 43 |
| DEVICE DATE/TIME..... | 43 |
| ADVANCED SETTINGS TAB – PROVISIONING | 45 |
| MD5 CHECKSUM..... | 46 |
| GENERATING A GENERIC CONFIGURATION FILE | 46 |
| GENERATING A SPECIFIC CONFIGURATION FILE..... | 47 |
| ADVANCED SETTINGS TAB – TONES | 48 |
| UPLOADING CUSTOM AUDIO FILES | 48 |
| TONE FILES INCLUDED IN MEMORY | 49 |
| ADVANCED SETTINGS TAB – ADVANCED AUDIO | 50 |
| DYNAMIC RANGE COMPRESSION (DRC) | 50 |
| DYNAMIC RANGE COMPRESSION GAIN | 50 |
| JITTER BUFFER RANGE..... | 50 |
| ALWAYS SEND RTP MEDIA | 50 |
| SPEAKER FILTER G.711 | 51 |
| SPEAKER FILTER G.722 | 51 |
| SPEAKER NOISE FILTER | 51 |
| ADVANCED SETTINGS TAB – ADVANCED SIP | 52 |
| OUTBOUND PROXY | 52 |
| STUN SERVER | 52 |
| REGISTER PERIOD (SECONDS)..... | 52 |
| KEEP-ALIVE METHOD..... | 52 |
| DIFFERENT PORTS FOR EXTENSIONS | 53 |
| SERVER REDUNDANCY FEATURE | 53 |
| BACKUP SERVER #1..... | 53 |
| BACKUP SERVER #2..... | 53 |
| POLLING INTERVALS (SECONDS)..... | 53 |
| POLL ACTIVE SERVER | 53 |
| AUTOMATIC FAILBACK | 54 |
| POLLING METHOD | 54 |
| ADVANCED SETTINGS TAB – ADVANCED MULTICAST..... | 55 |
| AUDIO SYNC (SLAVE MODE) | 55 |
| MASTER OUTPUT CODEC (MASTER MODE) | 55 |
| MASTER OUTPUT PACKETIZATION TIME (MASTER MODE) | 56 |
| ZONE DEFINITION | 56 |
| PAGE TONE AND PAGE VOLUME..... | 56 |
| POLYCOM SLAVE TONES | 57 |
| SYSTEM TAB - MAINTENANCE..... | 58 |
| DOWNLOAD CONFIGURATION FILE..... | 58 |
| RESTORE CONFIGURATION FILE | 58 |
| RESTORE CONFIGURATION TO DEFAULTS | 58 |

| | |
|--------------------------------|----|
| REBOOT THE DEVICE | 58 |
| METHOD..... | 59 |
| FIRMWARE IMAGE | 59 |
| MD5 CHECKSUM..... | 59 |
| SYSTEM – SYSTEM LOG | 59 |
| SPECIFICATIONS..... | 60 |
| FCC COMPLIANCE STATEMENT | 62 |

Important Safety Information

This product is powered by a certified limited power source (LPS), Power over Ethernet (PoE); through CAT5 or CAT6 connection wiring to an IEEE 802.3af compliant network PoE switch. The product is intended for installation indoors. All wiring connections to the product must be in the same building. If the product is installed beyond the building perimeter or used in an inter-building application, the wiring connections must be protected against overvoltage / transient. Algo recommends that this product be installed by a qualified electrician.

If you are unable to understand the English language safety information then please contact Algo by email for assistance before attempting an installation support@algosolutions.com.

Consignes de Sécurité Importantes

Ce produit est alimenté par une source d'alimentation limitée certifiée (alimentation par Ethernet); des câbles de catégorie 5 et 6 joignent un commutateur réseau à alimentation par Ethernet homologué IEEE 802.3af. Le produit est conçu pour être installé à l'intérieur. Tout le câblage rattaché au produit doit se trouver dans le même édifice. Si le produit est installé au-delà du périmètre de l'édifice ou utilisé pour plusieurs édifices, le câblage doit être protégé des surtensions transitoires. Algo recommande qu'un électricien qualifié se charge de l'installation de ce produit.

Si vous ne pouvez comprendre les consignes de sécurité en anglais, veuillez communiquer avec Algo par courriel avant d'entreprendre l'installation au support@algosolutions.com.

Información de Seguridad Importante

Este producto funciona con una fuente de alimentación limitada (Limited Power Source, LPS) certificada, Alimentación a través de Ethernet (Power over Ethernet, PoE); mediante un cable de conexión CAT5 o CAT6 a un conmutador de red con PoE en cumplimiento con IEEE 802.3af. El producto se debe instalar en lugares cerrados. Todas las conexiones cableadas al producto deben estar en el mismo edificio. Si el producto se instala fuera del perímetro del edificio o se utiliza en una aplicación en varios edificios, las conexiones cableadas se deben proteger contra sobretensión o corriente transitoria. Algo recomienda que la instalación de este producto la realice un electricista calificado.

Si usted no puede comprender la información de seguridad en inglés, comuníquese con Algo por correo electrónico para obtener asistencia antes de intentar instalarlo: support@algosolutions.com.

Wichtige Sicherheitsinformationen

Dieses Produkt wird durch eine zertifizierte Stromquelle mit begrenzter Leistung (LPS – Limited Power Source) betrieben. Die Stromversorgung erfolgt über Ethernet (PoE – Power over Ethernet). Dies geschieht durch eine Cat-5-Verbindung oder eine Cat-6-Verbindung zu einer IEEE 802.3af-konformen Ethernet-Netzwerkweiche. Das Produkt wurde konzipiert für die Installation innerhalb eines Gebäudes. Alle Kabelverbindungen zum Produkt müssen im selben Gebäude bestehen. Wenn das Produkt jenseits des Gebäudes oder für mehrere Gebäude genutzt wird, müssen die Kabelverbindungen vor Überspannung und Spannungssprüngen geschützt werden. Algo empfiehlt das Produkt von einem qualifizierten Elektriker installieren zu lassen.

Sollten Sie die englischen Sicherheitsinformationen nicht verstehen, kontaktieren Sie bitte Algo per Email bevor Sie mit der Installation beginnen, um Unterstützung zu erhalten. Algo kann unter der folgenden E-Mail-Adresse erreicht werden: support@algosolutions.com.

安全须知

本产品由认证的受限电源（LPS），以太网供电（PoE），通过CAT5或CAT6线路联接至IEEE 802.3af兼容的PoE网络交换机供电。本产品适用于室内或建筑物周边安装。所有联接本产品的线路必须源自同一建筑物。本产品如需用于超出建筑物周边范围或跨建筑物的安装，线路联接部分必须有过压和瞬态保护。Algo建议本产品由专业电工安装。

如果您对理解英文版安全须知有问题，安装前请通过电子邮件和Algo联系，support@algosolutions.com。

Important Safety Information



EMERGENCY COMMUNICATION

If used in an emergency communication application, the 8373 Zone Paging Adapter should be routinely tested. SNMP supervision is recommended for assurance of proper operation.



DRY INDOOR LOCATION ONLY

The 8373 Zone Paging Adapter is intended for dry indoor locations only. For outdoor locations Algo offers weatherproof speakers and strobe lights.

CAT5 or CAT6 connection wiring to an IEEE 802.3af compliant network PoE switch must not leave the building perimeter without adequate lightning protection.

No wiring connected to the 8373 Zone Paging Adapter may leave the building perimeter without adequate lightning protection.

About the Algo 8373 Zone Paging Adapter

The 8373 Zone Paging Adapter creates multiple paging zones, while interfacing between SIP-enabled phone system and traditional paging amplifier. When answering an inbound call, the 8373 can route the call's audio to the amplifier, via an analog connector. One amplified audio stream can then be fed back into the 8373 and sent to one or more of the three speaker Channels at a time. It is important to note that the 8373 doesn't allow **different** audio streams to play on two Channels simultaneously as it is designed to interface with a single amplifier. To interface with multiple amplifiers, we recommend using multiple Algo 8301 Paging Adapters instead.

The 8373 can register as a voice paging SIP extension with a hosted or enterprise Communications Server supporting 3rd party SIP endpoints. Multiple SIP paging extensions may also be registered on the 8373, one for each zone in use.

Multicasting capabilities allow a SIP registered 8373 to page and simultaneously stream multicast audio to other Algo devices. Only one 8373 is required to register as a SIP extension when using multiple adapters in a SIP environment.

Connection to the amplifier is made using a balanced and isolated line level output provided as either an XLR-mini connection (front) or pluggable terminal block for twisted pair wiring (back). The audio level can be adjusted manually or set to a defined level independent of input.

The 8373 Zone Paging Adapter is configured using central provisioning features or by accessing a web interface using browsers such as Google Chrome, Firefox, or Internet Explorer.

What is Included

- 8373 Zone Paging Adapter
- Network Cable
- Wall Mount Bracket

What is not Included

- Optional 2504 Output XLR-Mini Female to Male
- This Installation Guide (www.algosolutions.com/8373/guide)

Typical Application

The 8373 Zone Paging Adapter is typically used to connect an existing paging amplifier to a UC environment either as a SIP extension or multicast endpoint. The 8373 can relay the single unique audio stream from the amplifier to one of the 3 speaker channels, creating a "zoned" paging system.

The Line Output of the 8373 is connected directly to the dry audio input on the amplifier with an input impedance between 600 Ohm and 10 kOhm.

For amplifiers connected directly to the dry page port of an existing telephone system, the 8373 will provide a very similar interface providing both dry page audio and dry contact closure to activate the amplifier (if required).

For amplifiers connected to a FXS port or ATA through a "telephone answering device" then the 8373 will replace the answering device and eliminate the need for a FXS port or ATA.

Getting Started - Quick Install & Test



This guide provides important safety information which should be read thoroughly before permanently installing the adapter.

1. Connect the 8373 Zone Paging Adapter to an IEEE 802.3af compliant PoE network switch. The blue lights on the front will remain on until boot up is completed – about 30 seconds.
2. After the blue lights turn off, press the reset switch (RST) to hear the IP address over the Line Out port. The IP address may also be discovered by downloading the Algo locator tool to find Algo devices on your network: www.algosolutions.com/locator
3. Connect the adapter LINE-OUT to an input amplifier using the mini-XLR connector (front) or pluggable terminal block (back).
4. Access the 8373 Zone Paging Adapter web page by entering the IP address into a browser (Chrome, IE, Firefox etc) and login using the default password **algo**.
5. Enter the IP address for the SIP server into the SIP Domain field under the **BASIC SETTINGS > SIP** tab.
6. Enter the page SIP extension and password.
7. Make a call to the adapter by dialling the page SIP extension of the adapter from a telephone. A prompt tone will be heard when the 8373 answers – press “1” to call zone 1, which will activate the relay for Channel 1 based on the default settings.

Installation

The 8373 is wall mountable in a horizontal orientation using the supplied bracket.



Example installation on 1/2" drywall:

Use appropriate drywall anchors for #8 screws, and pre-drill per anchor manufacturer's instructions. Insert 4 anchors into the wall, and then attach bracket to wall anchors using #8 screws. Snap the 8373 into the bracket.

Connect the 8373 to a PoE network switch.

Connect the audio output of the 8373 to an amplifier input using either the mini-XLR output (male pins) or pluggable terminal block. The 8373 provides a dry audio output and dry contact closure.

An optional XLR output audio cable (Algo 2504) may be ordered for audio amplifiers using standard XLR input connectors.

Web Interface

The 8373 Zone Paging Adapter is configurable using the web interface or provisioning features.

After boot up the blue lights on the front will turn off and the adapter will have obtained an IP address. If there is no DHCP server the 8373 Zone Paging Adapter will default to the static IP address **192.168.1.111**.

The IP address can be heard over the Line Out port when the reset switch (RST) is pressed. (Do not press this button during boot-up as it will cause the device to reset to factory defaults). The IP address may be discovered by downloading the Algo locator tool to find Algo devices on your network: www.algosolutions.com/locator

Enter the IP address (eg 192.168.1.111) into a browser such as Google Chrome, Firefox, or Internet Explorer (other than IE9). The web interface should be visible and the default password will be **algo** in lower case letters.

SIP Paging: Introduction

The 8373 has only one audio output, and therefore can only support a single unique audio stream at any given time. This is ideal when connecting to a single zone amplifier that also only supports a single audio path at a time. The Channel relays then allow the speakers to be broken off into groups, creating a “zoned” paging system.

The 8373 can be registered as one or more SIP extensions with the SIP phone system, and will auto-answer inbound calls to these extensions, play a pre-announce tone, and allow voice paging until disconnected.

The simplest scenario is to configure the 8373 with a single SIP extension on the phone system, and then use the DTMF keys on the phone to select the zone that you would like to page. An alternate approach is to register multiple SIP extensions, one for each zone that you wish to use, so that each can be dialed directly without the need for the user to remember the different DTMF zone numbers. Both of these scenarios are described in more detail in the examples below. If a VLAN is used on your network, navigate to the **Advanced Settings** → **Network** tab to set VLAN options.

(Note, once the adapter is using VLAN you will need to be on the same VLAN to access the web interface.)

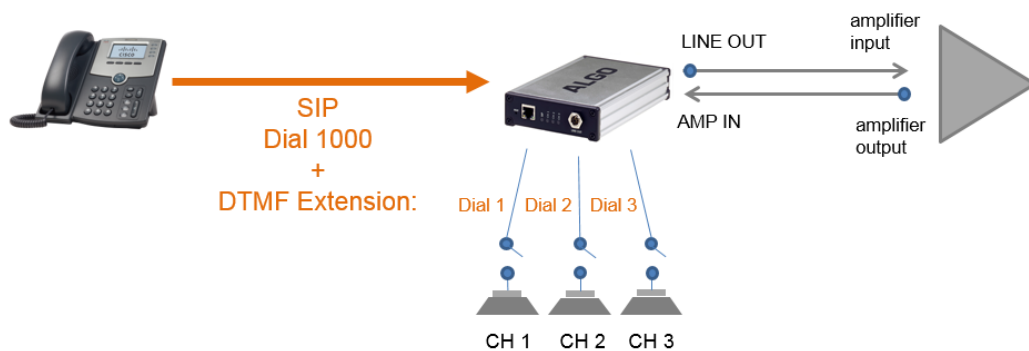
There are a number of configurable adapter options:

- Enable AGC (automatic gain control)
- Customize pre-announce tone WAV file

The best voice paging quality and intelligibility will be obtained using the G.722 wideband audio codec. Most current IP telephones support G.722 which is sometimes referred to as “HD” voice or audio.

SIP Paging: Single SIP Extension

Up to 50 zones can be assigned on each of the three 8373 Channels. The 8373 will auto-answer an inbound call to the SIP extension, e.g. 1000, and a brief tone will prompt the caller to dial a DTMF key to select the desired zone. For example, if zone 2 is assigned to Channel 2, dialing "2" will activate Channel 2 and provide audio to speakers connected to this channel. If zone 2 is associated with channels 2 and 3, dialing "2" will activate both channels and play the audio on the speakers associated with these 2 channels.



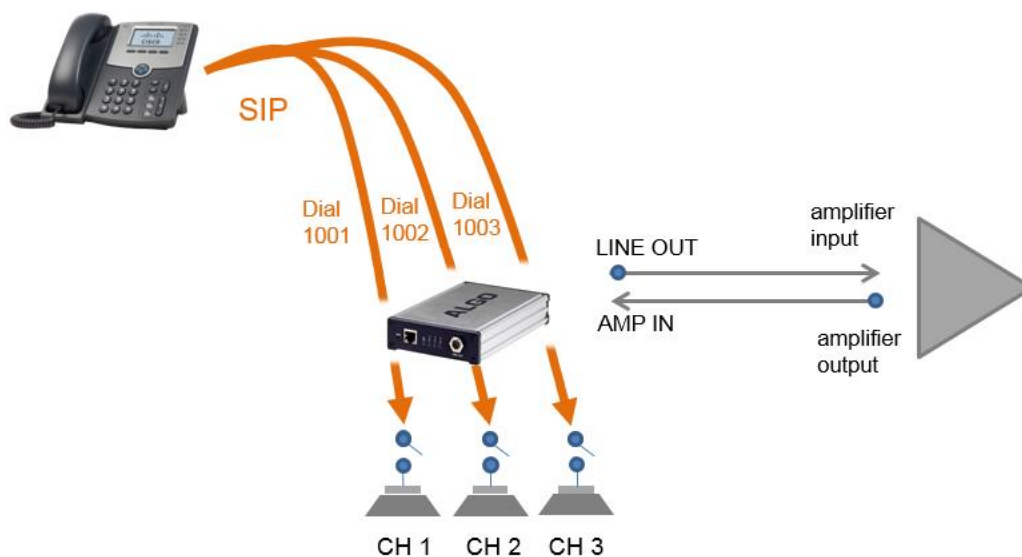
Note: DTMF codes for zones 10 and higher start with an "".*

To register the adapter with a single SIP extension, use the **Basic Settings** → **SIP** tab in the web interface to enter the SIP Server IP address, extension, username, and password. This information will be available from the IT Administrator.

Specific zones can be assigned to Channels by going to the **Basic Settings** → **Audio Output Relays** tabs.

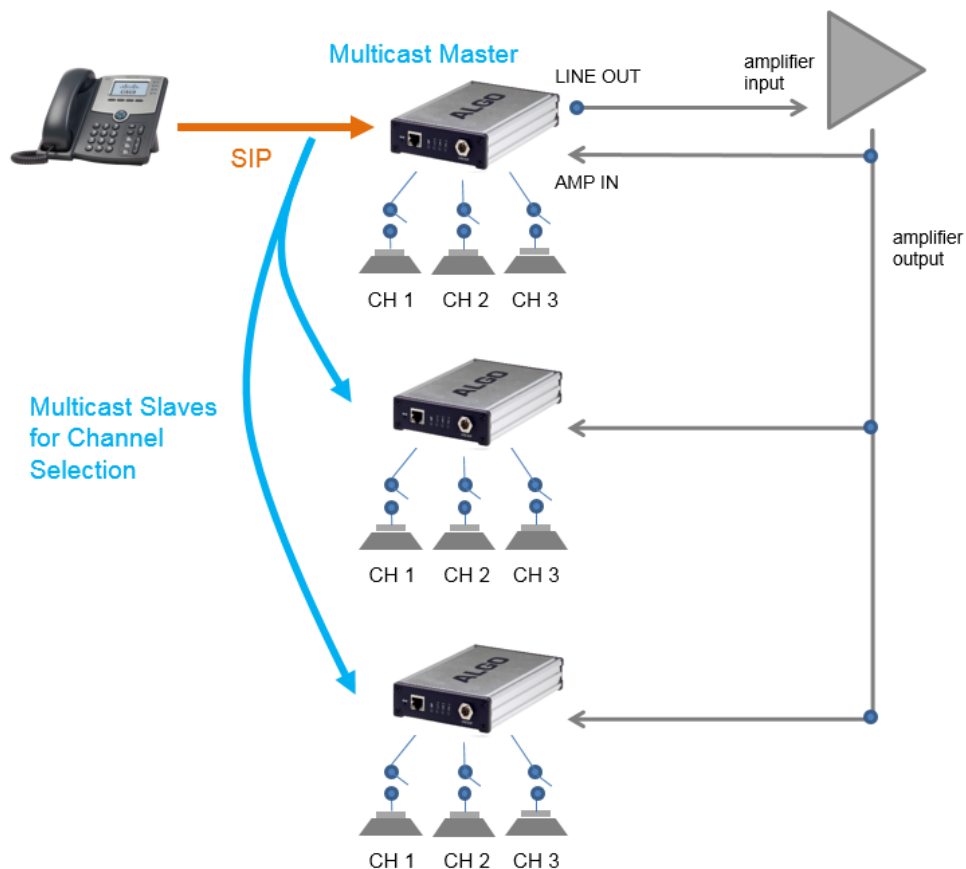
SIP Paging: Multiple SIP Extensions

Multiple SIP extensions can also be registered on the 8373, one for each zone in use, using the tab: **Advanced Setting** → **More Page Extensions**. This allows the advantage of dialing directly to a zone without needing to enter DMTF, allowing the use of speed-dial keys. Additional SIP licenses may be required by the SIP provider.



SIP Paging: 9 Zones using One Amplifier

To create more than 3 zones, additional 8373's may be connected to the single amplifier via the AMP IN on the back of each of the 8373's. The first 8373 should be assigned as a Multicast Master, and the remainder as Slaves. Each Slave relay channel can then be independently assigned to different paging zones. Dialing the Multicast Master can now activate up to 9 Channels, and play the audio on all associated speakers.



Note: When using slave 8373's in this configuration of multicast combined with a single amplifier driving the slave 8373's, the system must be designed with only a single master device in order to ensure that the audio being received from the amp matches the multicast control signals seen at each slave.

Up to 50 zones can be configured. The first nine "basic" zones are available by default. Additional "expanded" zones can also be enabled in the **Basic Settings → Multicast** tab.

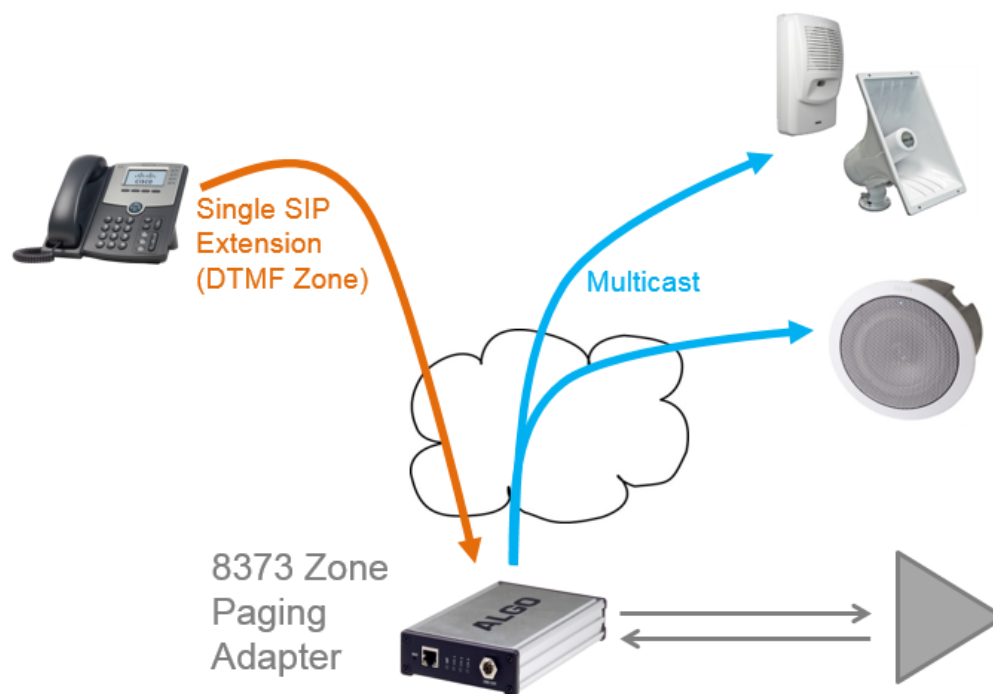
If the amplifier already supports three zones, and you wish to use all three simultaneously, then three Algo 8301 Paging Adapters might be the tool for the job instead.

Any combination of Algo SIP endpoints can be integrated using multicast, or kept independent by registering additional SIP extensions on each. For instance, in addition to a single 8373 driving an amplifier and creating 3 speaker zones, any number of 8188 Ceiling Speakers can also be added as Multicast Slaves, and automatically play the same audio as was sent to the amplifier & speakers.

SIP Paging: Using Multicast

Multicast can be used to integrate the 8373 with other Algo SIP Endpoints to create a fully-integrated Paging solution.

Only the Multicast Master device is required to register as a SIP extension when using multiple Algo devices in a SIP environment. Thus, the slave adapters do not require SIP extensions and do not need to register with the SIP Communication Server.



Each of the 3 relay channels on the 8373 can be assigned to any zone, or group of zones, as described in the other examples above, and likewise, each of the other Algo SIP endpoints can be assigned to one or more zones. Any one of the devices can be the Master, and the rest can be configured as Slaves. As usual, either a single SIP extension (with DTMF selectable zone), or multiple SIP extensions (one per zone) can be configured on the Master, depending on the preference of the end user.

Multicast Page Zones

The 8373 Zone Paging Adapter supports nine “basic” multicast zones. These zones are defined by the multicast IP addresses.

Somewhat arbitrarily, these zones are defined below but may be used in other ways. The important consideration is that there is a priority hierarchy – streaming activity on a zone higher on the list will be treated as a higher priority than a zone lower on the list – with music being the lowest priority.

- Priority
- All Call
- Zone 1
- Zone 2
- Zone 3
- Zone 4
- Zone 5
- Zone 6
- Music

In a scenario involving only one adapter registered as a SIP extension, the multicast page zone can be selected by keypad input using “DTMF Selectable Mode”.

Alternatively, several Algo SIP endpoints can be registered with SIP extensions and each SIP endpoint set to multicast on a different multicast zone. No keypad zone selection in that case is necessary – the zones are defined by the SIP extension called.

“Expanded” zones can also be enabled, allowing up to 50 zones in total. These have the same behaviours as the basic zones, but are hidden by default to simplify the interface.

Note: DTMF codes for zones 10 and higher start with an “”.*

Polycom™ Group Paging

The 8373 Zone Paging Adapter has been designed to support Polycom Group Paging.

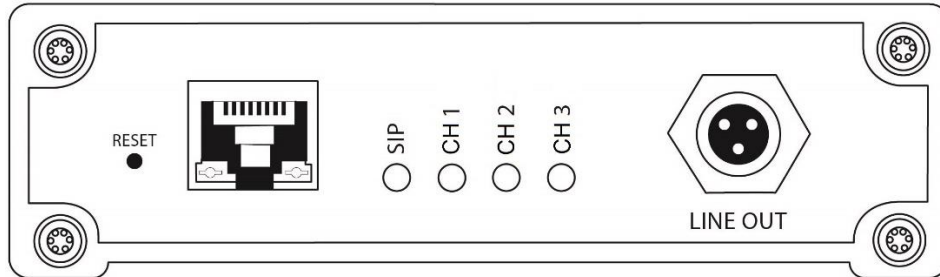
The 8373 Zone Paging Adapter can be added to a Polycom group page so that voice paging is heard over Polycom telephone speakers and overhead paging simultaneously.

Polycom Group Paging can be configured on the **Basic Settings** → **Multicast** tab.

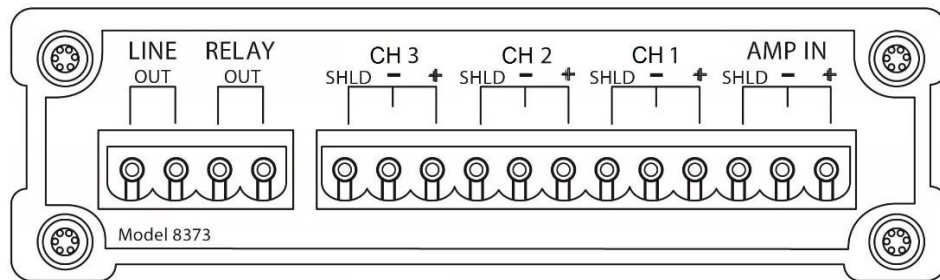


The 8373 Zone Paging Adapter may be accessed remotely via SIP and may generate a multicast page within the LAN sending voice page to both Algo paging endpoints and Polycom telephones. Audio delay may be added to the 8373 Zone Paging Adapter to synchronize with voice page over the Polycom telephone speakers.

Wiring Connections



8373 Zone Paging Adapter: Front View



8373 Zone Paging Adapter: Back View

Network Connection (Front)

Connect RJ45 jack from PoE network switch or non-PoE network and 48V 350 mA IEEE 802.3af compliant power injector.

There are two lights on the Ethernet jack:

Green light: On when Ethernet is working, flickers off to indicate activity on the port.

Amber light: Off when successful 100Mbps link is established. Typically on only briefly at power up.

Under normal conditions, the Amber light will turn on immediately after the Ethernet cable is first connected. This indicates that PoE power has been successfully applied. Once the device connects to the network, it will switch to the Green light instead, which will typically flicker indicating traffic on the network.

LINE OUT XLR-MINI (Front)

Balanced and isolated audio output to external amplifier. Locking mini-XLR female to standard XLR male cable available. Output level defined using web interface.

Terminal Block Line Out (Back)

Wire pair output parallel to XLR-MINI LINE OUT that may be used for connecting to an external amplifier.

Terminal Block Relay Out (Back)

By default these terminals provide a contact closure when the 8373 Zone Paging Adapter is active.

Channel 1/2/3 (Back)

The relays will switch audio from the amplifier to the appropriate output channels. The connections for the output of the external amplifier and distribution to up to three speaker runs (or channels) are identified as + (plus), - (minus), and SHLD (shield). The + and - only serve to maintain polarity if important for speaker phasing but will not normally be critical. The SHLD input and output is not connected to anything internally inside the 8373. The SHLD connections are all tied together and serve only as a convenience if using speaker wire with a shield. If the shield wire is connected to Earth Ground at the amplifier then Earth Ground will be distributed to each speaker run.

AMP IN (Back)

Connect the output of the amplifier.

Terminal Block Cover

When connected to 70V or 100V paging amplifiers, the included connector guard should be snapped onto the output terminal blocks (CH 1, 2, 3, and AMP IN) after wall mounting and wiring connections are made. The cover is designed to prevent accidental contact with the high voltage amplifier output.

Blue LED Indicators

SIP

Steady LED light will appear when the SIP extension is registered.
The LED light will blink when the device is engaged in a SIP call.

Channel 1/2/3

Steady LED light when the channel is activated.

Note: All 4 blue LEDs will be on during power up and boot process.

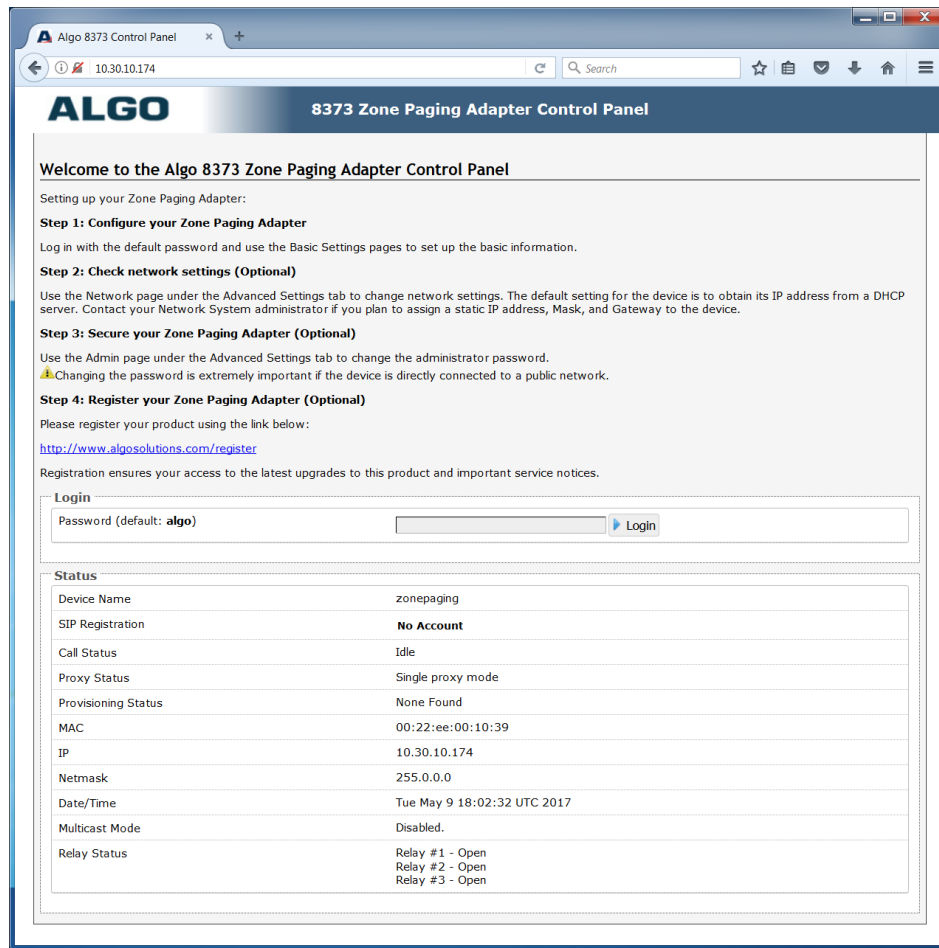
Reset

A recessed reset button (RST) next to the Ethernet Jack can only be used to reset the 8373 Zone Paging Adapter at time of power up. To reset, reboot or power cycle the 8373 Zone Paging Adapter. Wait until the SIP LED flashes and then press and hold the reset button until the SIP LED begins a double flash pattern. Release the reset button and allow the unit to complete its boot process. **Do not press the reset button until the SIP LED begins flashing.**

A reset will set all configuration options to factory default including the password.

Web Interface Login

The web interface requires a password which is "**algo**" by default. This password can be changed using the *Admin* tab after logging in the first time.

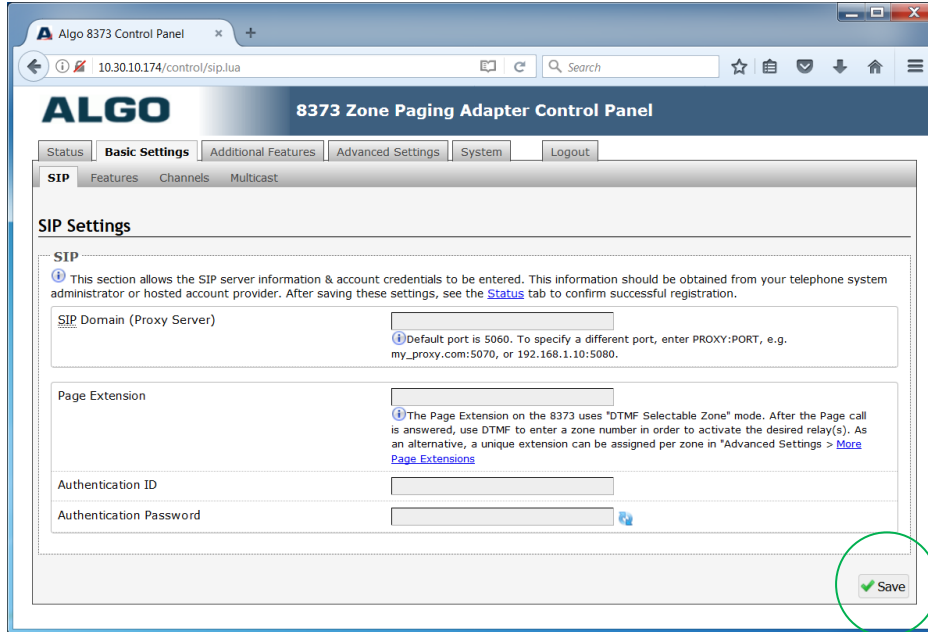


Status

The device's Status page will be available before and after log on. The section can be used to check 8373's SIP Registration, Call Status, Multicast Mode (Slave/Master), Relay Status, Proxy Status, and general MAC, IP, Netmask, Date/Time, and Timezone information.

Basic Settings Tab – SIP

SIP Server information and Credentials should be obtained from your telephone system administrator or hosted account provider. After saving the settings, see the Status tab to confirm the registration was successful.



Note: Any time changes are made to settings in the Web Interface the "Save" key must be clicked to save the changes

SIP Domain (Proxy Server)

SIP Server Name or IP Address

Page Extension

This is the SIP extension for the 8373 Zone Paging Adapter. The Page Extension uses "DTMF Selectable Zone" mode. After the Page call is answered, use DTMF to enter a zone number in order to activate the desired relay(s). As an alternative, a unique extension can be assigned per zone in "Advanced Settings > More Page Extensions".

Authentication ID

May also be called Username for some SIP servers and in some cases may be the same as the SIP extension.

Authentication Password

SIP password provided by the system administrator for the SIP account.

Basic Settings Tab – Features

The screenshot shows the 'Basic Settings' tab with the 'Features' sub-tab selected. The 'Features' section is divided into three main areas:

- Test Tone Settings:**
 - Test Tone:** A dropdown menu is set to 'warble2-med.wav'. To its right are 'Play', 'Loop', and 'Stop' buttons.
 - Test Speaker Volume:** A dropdown menu is set to '10'.
- Inbound Page Settings:**
 - Page Speaker Volume:** A dropdown menu is set to '10'.
 - Page Mode:** Radio buttons for 'One-way' (selected) and 'Delayed'. A note states: "Delayed mode stores the page audio temporarily, and then broadcasts it after the call is hung-up. This can help avoid feedback."
 - Page Timeout:** A dropdown menu is set to '5 minutes'.
 - Page Tone:** A dropdown menu is set to '<Default>'. A note states: "Use only Default, or custom uploaded file. The other pre-installed tone files all contain silence at the end in order to generate ring 'cadence' of 6 seconds. This silence will block the voice path for several seconds at the start of a page."
 - G.722 Support:** Radio buttons for 'Enabled' (selected) and 'Disabled'.
- Audio:**
 - Automatic Gain Control (AGC):** Radio buttons for 'Enabled' (selected) and 'Disabled'. A note states: "Automatically maximize level of voice received from calling phone in order to make page volume more consistent."
 - Output Level:** A dropdown menu is set to '+4dBu 10k (1.23 Vrms)'.

A 'Save' button is located at the bottom right of the configuration area.

Test Tone

Select WAV file to play over the associated speaker. The WAV file may be played immediately to an associated speaker from the web interface for test purposes using the Play, Loop, and Stop buttons. The test tone will play on all three channels, but will not stream over multicast

Test Speaker Volume

Set the associated speaker volume. This setting is an amplifier gain control and the output level will also depend on the levels recorded into the source WAV file played from memory.

Page Speaker Volume

Speaker page volume control for SIP or multicast paging. This setting is an amplifier gain control and output level will depend on streaming level. This setting will apply to all multicast, regardless of content.

Page Mode

A call to the SIP page extension can be one-way or delayed. In delay mode, the adapter will store the page into memory and then play after disconnect.

In delay mode, press "" to cancel a page while the recording state is in process to prevent it from being sent after hanging up.*

Page Timeout

A time limit may be set for an active page.

Page Tone

Select pre-announce tone for paging. Use only Default, or custom uploaded file. The other pre-installed tone files all contain silence at the end in order to generate ring "cadence" of 6 seconds. This silence will block the voice path for several seconds at the start of a page. The "Default" tone will play the page-notif.wav file.

Note: The "Default Page Tone", in Advanced Multicast, will play the tone set here.

G.722 Support

Enable or disable the G.722 codec.

Automatic Gain Control (AGC)

Normalizes the audio level. Automatically maximize level of voice received from calling phone in order to make page volume more consistent.

Output Level

The following output levels are available, allowing the 8373 to interface with a wide variety of devices:

| |
|-----------------------------|
| +4dBu 10k (1.23 Vrms) |
| 0dBu 10k (0.775 Vrms) |
| 0dBV 10k (1.0 Vrms) |
| -10dBV 10k (0.316 Vrms) |
| 0dBm 600 ohm (0.755 Vrms) |
| -10dBm 600 ohm (0.245 Vrms) |

Basic Settings Tab – Channels

Select multicast zone(s) to play the audio on for each channel.

Status
Basic Settings
Additional Features
Advanced Settings
System
Logout

SIP
Features
Channels
Multicast

Audio Output Relay Settings

General

Number of Zones

Basic Zones Only
 Basic and Expanded Zones

ⓘ The 8373 Page Extension always supports DTMF input mode to select zones for activating the Relay Channels, even when in stand-alone mode with multicast disabled.

Channel 1 Settings

Speaker Playback Zones

Priority Call
 All Call
 Music

Zone 1
 Zone 2
 Zone 3

Zone 4
 Zone 5
 Zone 6

Expanded Speaker Playback Zones

| | | | | |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> Zone *10 | <input type="checkbox"/> Zone *11 | <input type="checkbox"/> Zone *12 | <input type="checkbox"/> Zone *13 | <input type="checkbox"/> Zone *14 |
| <input type="checkbox"/> Zone *15 | <input type="checkbox"/> Zone *16 | <input type="checkbox"/> Zone *17 | <input type="checkbox"/> Zone *18 | <input type="checkbox"/> Zone *19 |
| <input type="checkbox"/> Zone *20 | <input type="checkbox"/> Zone *21 | <input type="checkbox"/> Zone *22 | <input type="checkbox"/> Zone *23 | <input type="checkbox"/> Zone *24 |
| <input type="checkbox"/> Zone *25 | <input type="checkbox"/> Zone *26 | <input type="checkbox"/> Zone *27 | <input type="checkbox"/> Zone *28 | <input type="checkbox"/> Zone *29 |
| <input type="checkbox"/> Zone *30 | <input type="checkbox"/> Zone *31 | <input type="checkbox"/> Zone *32 | <input type="checkbox"/> Zone *33 | <input type="checkbox"/> Zone *34 |
| <input type="checkbox"/> Zone *35 | <input type="checkbox"/> Zone *36 | <input type="checkbox"/> Zone *37 | <input type="checkbox"/> Zone *38 | <input type="checkbox"/> Zone *39 |
| <input type="checkbox"/> Zone *40 | <input type="checkbox"/> Zone *41 | <input type="checkbox"/> Zone *42 | <input type="checkbox"/> Zone *43 | <input type="checkbox"/> Zone *44 |
| <input type="checkbox"/> Zone *45 | <input type="checkbox"/> Zone *46 | <input type="checkbox"/> Zone *47 | <input type="checkbox"/> Zone *48 | <input type="checkbox"/> Zone *49 |
| <input type="checkbox"/> Zone *50 | | | | |

Channel 2 Settings

Speaker Playback Zones

Priority Call
 All Call
 Music

Zone 1
 Zone 2
 Zone 3

Zone 4
 Zone 5
 Zone 6

Expanded Speaker Playback Zones

| | | | | |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> Zone *10 | <input type="checkbox"/> Zone *11 | <input type="checkbox"/> Zone *12 | <input type="checkbox"/> Zone *13 | <input type="checkbox"/> Zone *14 |
| <input type="checkbox"/> Zone *15 | <input type="checkbox"/> Zone *16 | <input type="checkbox"/> Zone *17 | <input type="checkbox"/> Zone *18 | <input type="checkbox"/> Zone *19 |
| <input type="checkbox"/> Zone *20 | <input type="checkbox"/> Zone *21 | <input type="checkbox"/> Zone *22 | <input type="checkbox"/> Zone *23 | <input type="checkbox"/> Zone *24 |
| <input type="checkbox"/> Zone *25 | <input type="checkbox"/> Zone *26 | <input type="checkbox"/> Zone *27 | <input type="checkbox"/> Zone *28 | <input type="checkbox"/> Zone *29 |
| <input type="checkbox"/> Zone *30 | <input type="checkbox"/> Zone *31 | <input type="checkbox"/> Zone *32 | <input type="checkbox"/> Zone *33 | <input type="checkbox"/> Zone *34 |
| <input type="checkbox"/> Zone *35 | <input type="checkbox"/> Zone *36 | <input type="checkbox"/> Zone *37 | <input type="checkbox"/> Zone *38 | <input type="checkbox"/> Zone *39 |
| <input type="checkbox"/> Zone *40 | <input type="checkbox"/> Zone *41 | <input type="checkbox"/> Zone *42 | <input type="checkbox"/> Zone *43 | <input type="checkbox"/> Zone *44 |
| <input type="checkbox"/> Zone *45 | <input type="checkbox"/> Zone *46 | <input type="checkbox"/> Zone *47 | <input type="checkbox"/> Zone *48 | <input type="checkbox"/> Zone *49 |
| <input type="checkbox"/> Zone *50 | | | | |

Channel 3 Settings

Speaker Playback Zones

Priority Call
 All Call
 Music

Zone 1
 Zone 2
 Zone 3

Zone 4
 Zone 5
 Zone 6

Expanded Speaker Playback Zones

| | | | | |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> Zone *10 | <input type="checkbox"/> Zone *11 | <input type="checkbox"/> Zone *12 | <input type="checkbox"/> Zone *13 | <input type="checkbox"/> Zone *14 |
| <input type="checkbox"/> Zone *15 | <input type="checkbox"/> Zone *16 | <input type="checkbox"/> Zone *17 | <input type="checkbox"/> Zone *18 | <input type="checkbox"/> Zone *19 |
| <input type="checkbox"/> Zone *20 | <input type="checkbox"/> Zone *21 | <input type="checkbox"/> Zone *22 | <input type="checkbox"/> Zone *23 | <input type="checkbox"/> Zone *24 |
| <input type="checkbox"/> Zone *25 | <input type="checkbox"/> Zone *26 | <input type="checkbox"/> Zone *27 | <input type="checkbox"/> Zone *28 | <input type="checkbox"/> Zone *29 |
| <input type="checkbox"/> Zone *30 | <input type="checkbox"/> Zone *31 | <input type="checkbox"/> Zone *32 | <input type="checkbox"/> Zone *33 | <input type="checkbox"/> Zone *34 |
| <input type="checkbox"/> Zone *35 | <input type="checkbox"/> Zone *36 | <input type="checkbox"/> Zone *37 | <input type="checkbox"/> Zone *38 | <input type="checkbox"/> Zone *39 |
| <input type="checkbox"/> Zone *40 | <input type="checkbox"/> Zone *41 | <input type="checkbox"/> Zone *42 | <input type="checkbox"/> Zone *43 | <input type="checkbox"/> Zone *44 |
| <input type="checkbox"/> Zone *45 | <input type="checkbox"/> Zone *46 | <input type="checkbox"/> Zone *47 | <input type="checkbox"/> Zone *48 | <input type="checkbox"/> Zone *49 |
| <input type="checkbox"/> Zone *50 | | | | |

*If Polycom Mode is enabled in the Basic Settings > Multicast tab, Polycom groups can be selected for each channel.

Number of Zones

The 8373 Page Extension always supports DTMF input mode to select zone for activating the Relay Channels, even when in stand-alone with multicast disabled.

Multicast

The 8373 Zone Paging Adapter can be expanded to 6 or more channels by using Multicast to seamlessly integrate multiple 8373 devices (see page 16 for more information). Any combination of Algo SIP endpoints, like 8180, 8186, or 8188, can be integrated using multicast.

Multicast IP Addresses

Each 8373 Zone Paging Adapter has its own IP address, and shares a common multicast IP and port number (multicast zone) for multicast packets. The master transmits to a configurable multicast zone, and the slave units listen to all the multicast zones assigned to them.

The network switches and router see the packet and deliver it to all the members of the group. The multicast IP and port number must be the same on all the master and slave units of one group. The user may define multiple zones by picking different multicast IP addresses and/or port numbers.

1. Multicast IP addresses range: 224.0.0.0/4
(from 224.0.0.0 to 239.255.255.255)
2. Port numbers range: 1 to 65535
3. By default, the 8373 Zone Paging Adapter is set to use the multicast IP address 224.0.2.60 and the port numbers 50000-50008

Make sure that the multicast IP address and port number do not conflict with other services and devices on the same network.

Basic Settings Tab - Multicast (Master Settings)

Multicast Mode (Master/Sender Selected)

If master is enabled the 8373 Zone Paging Adapter will broadcast an IP stream when activated in addition to playing the audio. (Note that the 8373 Zone Paging Adapter cannot be both a multicast master and slave simultaneously).

Number of Zones (Regular Multicast Type Selected)

*See Basic Settings > Channels tab (on page 30) for definition.

Multicast Type

The 8373 Zone Paging Adapter may broadcast multicast paging, compatible with Polycom **“on premise group paging”** protocol and most multicast-enabled phones that use RTP audio packets.

Select “Regular” if solely multicasting to Algo SIP endpoints and/or multicast-enabled phones.

To multicast page announcements solely to Polycom phones, select "Polycom Group Page" or "Push-to-Talk". Then, configure the 8373 with "Polycom Zone" (IP Address and Port). *Always ensure that the multicast settings on all Slaves match those of the Master.*

Select "Regular RTP + Polycom Group Page/Push-to-Talk" to multicast page audio to both Polycom phones, Algo SIP endpoints, and multicast-enabled phones.

Speaker Playback Zones

*See Basic Settings > Channels tab (on page [30](#))

Basic Settings Tab - Multicast (Slave Settings)

The screenshot displays the 'Multicast Settings' configuration page. At the top, there are navigation tabs: Status, Basic Settings (selected), Additional Features, Advanced Settings, System, and Logout. Below these are sub-tabs: SIP, Features, Channels, and Multicast (selected). The main content area is titled 'Multicast Settings' and contains three sections:

- Multicast Mode:** Radio buttons for None, Master/Sender, and Slave/Receiver. 'Slave/Receiver' is selected. A help icon indicates that Multicast Zone Definitions can be found in 'Advanced Settings > Advanced Multicast'.
- Polycm Group Paging/ Push-to-Talk:** Radio buttons for Regular (RTP), Polycom Group Page, and Polycom Push-to-Talk. 'Polycom Group Page' is selected. A help icon indicates that Regular mode uses RTP audio packets compatible with all Algo SIP endpoints, and most multicast-enabled phones.
- Polycm Zone:** A text input field containing '224.0.1.116:5001'. A help icon indicates to enter the same Multicast IP Address & Port number as configured on the Polycom phones.

A green 'Save' button is located at the bottom right of the form.

Multicast Mode (Slave Selected)

If slave is enabled the 8373 Zone Paging Adapter will activate when receiving a multicast message.

Number of Zones (Regular Multicast Type Selected)

*See Basic Settings > Channels tab (on page 30) for definition.

Multicast Type - Regular

Select "Regular" if solely multicasting to Algo SIP endpoint(s) and/or multicast-enabled phone(s) that use RTP audio packets.

Multicast Type – Polycom Group Paging/ Push-to-Talk

The 8373 Zone Paging Adapter may receive multicast paging compatible with Polycom **"on premise group paging"** protocol.

To configure the 8373 as a slave to play Polycom page announcements, select "Group Page" or "Push-to-Talk". Then enter the Polycom Zone (IP Address and Port) that matches the configuration of the Polycom phones and Channels.

The Polycom phone used as page audio source for the 8373 Zone Paging Adapter(s) must be configured to use either the G.711 or G.722 audio codec. **The Polycom phone(s) must also be configured with the "Compatibility" setting ("ptt.compatibilityMode") disabled** in order for this codec setting to be applied.

If using a Polycom phone as the Multicast master, a tone may be set for any of the 25 Polycom Groups configured on the Algo device. If an Algo device is used as a Multicast master, a tone does not have to be set as the Algo master will provide its own tone. Polycom Group Tones can be set in Advanced Settings > Advanced Multicast tab.

Additional Features Tab – More Page Extensions

The screenshot shows the 'Additional Features' tab in the web interface. The 'More Page Extensions' section is active. It contains the following information:

- More Page Extensions**: This section allows dedicated extensions to be registered for each paging zone. This provides an alternative to the "DTMF Selectable Zone" option, thus allowing any zone to be called directly without the need to enter DTMF. Depending on the features available in your SIP phone system, this can provide benefits in allowing speed-dial keys to be programmed on user phones for paging a particular zone more easily, or dialing restrictions could potentially be used to allow only selected phones to access certain zones. This feature requires several SIP extensions to be registered with the SIP phone system of course.
- Info 1**: The 8373 will auto-answer any inbound calls received on these numbers and provide a voice paging path and multicast if configured. Note that only a single call can be active at a time.
- Info 2**: Note: Some SIP phone systems may not support this feature if they limit the number of extensions that can be registered on a single device.
- Info 3**: Multicast Zone Definitions can be found in "Advanced Settings > [Advanced Multicast](#)".
- Basic Extensions**:
 - Priority Call Page Extension: Enabled Disabled
 - Extension:
 - Authentication ID:
 - Authentication Password:
 - All Call Page Extension: Enabled Disabled
 - Zone 1 Page Extension: Enabled Disabled
 - Zone 2 Page Extension: Enabled Disabled
 -
 - Zone 50 Page Extension: Enabled Disabled
- Save**: Save

Additional SIP extensions can be registered for each multicast zone that will be used. This allows the advantage of dialing directly to a zone without needing to enter DMTF (e.g. speed-dial keys can be used), but may require additional SIP licenses depending.

To configure additional page extensions (up to 50) click "Enable" beside the target extension and enter the Extension, Authentication ID, and Authentication password.

Advanced Settings Tab - Network

The screenshot shows the 'Advanced Settings' tab for the 'Network' section. The page is divided into three main sections: 'Network Interface', '802.1Q Virtual LAN', and 'Differentiated Services'. The 'Network Interface' section has radio buttons for 'Static IP' (selected) and 'DHCP', with input fields for IP Address, Netmask, Gateway, DNS Server 1, and DNS Server 2. The '802.1Q Virtual LAN' section has radio buttons for 'Enabled' (selected) and 'Disabled', with input fields for VLAN ID (value 0, range 0 to 4094) and VLAN Priority (value 0, range 0 to 7). The 'Differentiated Services' section has input fields for SIP (6-bit DSCP value) and RTP (6-bit DSCP value), both set to 0. A 'Save' button is located at the bottom right.

Protocol

DHCP is an IP standard designed to make administration of IP addresses simpler. When selected, DHCP will automatically configure IP addresses for each 8373 Zone Paging Adapter on the network. Alternatively the 8373 Zone Paging Adapter can be set to a static IP address.

VLAN Mode

Enables or Disables VLAN Tagging. VLAN Tagging is the networking standard that supports Virtual LANs (VLANs) on an Ethernet network. The standard defines a system of VLAN tagging for Ethernet frames and the accompanying procedures to be used by bridges and switches in handling such frames. The standard also provides provisions for a quality of service prioritization scheme commonly known as IEEE 802.1p and defines the Generic Attribute Registration Protocol.

VLAN ID

Specifies the VLAN to which the Ethernet frame belongs. A 12-bit field specifying the VLAN to which the Ethernet frame belongs. The hexadecimal values of 0x000 and 0xFFF are reserved. All other values may be used as VLAN identifiers, allowing up to 4094 VLANs. The reserved value 0x000 indicates that the frame does not belong to any VLAN; in this case, the 802.1Q tag specifies only a priority and is referred to as a priority tag. On bridges, VLAN 1 (the default VLAN ID) is often reserved for a management VLAN; this is vendor specific.

VLAN Priority

Sets the frame priority level. Otherwise known as Priority Code Point (PCP), VLAN Priority is a 3-bit field which refers to the IEEE 802.1p priority. It indicates the frame priority level. Values are from 0 (lowest) to 7 (highest).

Differentiated Services (6-bit DSCP value)

Provides quality of service if the DSCP protocol is supported on your network. Can be specified independently for SIP control packets versus RTP audio packets.

Advanced Settings Tab – Admin

| | | | | | | | |
|--|----------------|---|--------------------------|---|----------------|--------------|--------------------|
| Status | Basic Settings | Additional Features | Advanced Settings | System | Logout | | |
| Network | Admin | Time | Provisioning | Tones | Advanced Audio | Advanced SIP | Advanced Multicast |
| Admin Settings | | | | | | | |
| Admin Password | | | | | | | |
| Password | | <input type="password"/> | | | | | |
| Confirmation | | <input type="password"/> | | | | | |
| General | | | | | | | |
| Device Name (Hostname) | | <input type="text" value="zonepaging"/> | | | | | |
| Introduction Section on Status Page | | <input checked="" type="radio"/> On <input type="radio"/> Off | | | | | |
| Web Interface Session Timeout | | <input type="text" value="1 hour"/> | | Automatically log out web interface after period of inactivity. | | | |
| Play Tone at Startup | | <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled | | | | | |
| <small> A tone can be played at startup to confirm that the device has booted. This can be useful when testing or configuring a device, but might not be desirable if the device is connected to an external amplifier and paging system. </small> | | | | | | | |
| Log Settings | | | | | | | |
| Log Level | | <input type="radio"/> Error (Lowest) <input type="radio"/> Notice ("Event") <input checked="" type="radio"/> Info ("SIP") <input type="radio"/> Debug (Highest) | | | | | |
| Log Method | | <input type="radio"/> Local <input checked="" type="radio"/> Network <input type="radio"/> Both | | | | | |
| Log Server | | <input type="text"/> | | | | | |
| Management | | | | | | | |
| Web Interface Protocol | | <input checked="" type="radio"/> Both HTTP and HTTPS <input type="radio"/> HTTPS Only | | | | | |
| Force Strong Password | | <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled | | | | | |
| Allow Secure SIP Passwords | | <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled <small>After enabling this option, it is recommended to re-enter SIP passwords and their corresponding realm to store the passwords securely.</small> | | | | | |
| SNMP Support (v1 get only) | | <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled | | | | | |
| <input checked="" type="checkbox"/> Save | | | | | | | |

Password

Password to log into the 8373 Zone Paging Adapter web interface. You should change the default password **algo** in order to secure the device on the network. If you have forgotten your password, you will need to perform a reset using the Reset Button in order to restore the password (as well as all other settings) back to the original factory default conditions.

For additional password security see "Force Strong Password" below.

Confirmation

Re-enter network admin password.

Device Name (Hostname)

Name to identify the device in the Algo Network Device Locator Tool.

Introduction Section on Status Page

Allows the introduction text to be hidden from the login screen.

Web Interface Session Timeout

Set the maximum period of inactivity after which the web interface will log out automatically.

Play Tone at Startup

A tone can be played at startup to confirm that the device has booted. This can be useful when testing or configuring a device, but might not be desirable if the device is connected to an external amplifier and paging system.

Log Level

Use on the advice of Algo technical support only.

Log Method

Allows the 8373 Zone Paging Adapter to write to external Syslog server if the option for external (or both) is selected.

Log Server

If external (or both) is selected this is the address of the Syslog server on the network.

Web Interface Protocol

HTTPS is always enabled on the device. Use this setting to disable HTTP. When HTTP is disabled, requests will be automatically redirected to HTTPS. Also note that since the device can have any address on the local network, no security certificate exists, and thus most browsers will provide a warning when using HTTPS.

Force Strong Password

When enabled, ensures that a secure password is provided for the device's web interface for additional protection. The password requirements are:

- Must contain at least 10 characters
- Must contain at least 1 uppercase character
- Must contain at least 1 digit (0 – 9)
- Must contain at least 1 special character

Allow Secure SIP Password

Allows SIP passwords to be stored in the configuration file in an encrypted format, to prevent viewing and recovery. Once enabled, the SIP "Realm" field should be entered and all the configured Authentication Password(s) must be re-entered in the Basic Settings > SIP tab, and any other locations where SIP extension have been configured, to save the encrypted password(s).

If the Realm is changed at a later time, all the passwords will also need to be re-entered again to save the passwords with the new encryption.

To obtain your SIP Realm information, contact your SIP Server administrator (or check the SIP log file for a registration attempt). The Realms may be the same or different for all the extensions used.

SNMP Support (v1 get only)

Additional SNMP support is anticipated for future, but the 8373 Zone Paging Adapter will respond to a simple status query for automated supervision. Contact Algo technical support for more information.

Advanced Settings Tab – Time

The screenshot shows the 'Time Settings' configuration page in the ALGO web interface. The page is under the 'Advanced Settings' tab and includes the following sections:

- General:**
 - Timezone: UTC
 - NTP Time Server 1: 0.debian.pool.ntp.org
 - NTP Time Server 2: 1.debian.pool.ntp.org
 - NTP Time Server 3: 2.debian.pool.ntp.org
 - NTP Time Server 4: 3.debian.pool.ntp.org
 - NTP Time Server Source: Use DHCP Option 42 Ignore DHCP Option 42. By default, if an NTP Server address is provided via DHCP Option 42, this will be used instead of the options above.
- Device Date/Time:**
 - Current time and date: Tue May 9 18:22:27 2017
 - Sync with browser button
 - Manual time and date are intended for testing purpose only. Time will be lost upon power down.

A 'Save' button is located at the bottom right of the form.

Network time is used for logging events into memory for troubleshooting.

Time Zone

Select time zone.

NTP Time Servers 1/2/3/4

The adapter will attempt to use Timer Server 1 and work down the list if one or more of the time servers become unresponsive.

NTP Time Server Source

When "Use DHCP Option 42" is chosen, if an NTP Server address is provided via the DHCP Option 42, that NTP Server will be used instead of the 4 mentioned above. Alternatively, "Ignore DHCP Option 42" can be chosen to only use servers mentioned above.

Device Date/Time

This field shows the current time and date as set on the device. If testing the device on a lab network that may not have access to an external NTP server, the "Sync with browser" button can be used to temporarily set the time on the device.

Note, this time value will be lost at power down, or overwritten if NTP is currently active. Time and date are used only for logging purposes and are not typically required.

Advanced Settings Tab – Provisioning

The screenshot displays the 'Provisioning Settings' page within the 'Advanced Settings' tab. The interface includes a navigation bar at the top with tabs for Status, Basic Settings, Additional Features, Advanced Settings (selected), System, and Logout. Below this, there are sub-tabs for Network, Admin, Time, Provisioning (selected), Tones, Advanced Audio, Advanced SIP, and Advanced Multicast. The main content area is titled 'Provisioning Settings' and contains several sections:

- Mode:** A section with a 'Provisioning Mode' label and two radio buttons: 'Enabled' (selected) and 'Disabled'.
- Settings:** A section containing:
 - Server Method:** Radio buttons for 'Auto (DHCP Option 66/160/150)', 'DHCP Option 66 only', 'DHCP Option 160 only', 'DHCP Option 150 only', and 'Static' (selected). A note below states: 'Auto mode automatically checks all 3 DHCP options for an active provisioning server, in the order listed.'
 - Static Server:** A text input field.
 - Download Method:** Radio buttons for 'TFTP', 'FTP', 'HTTP' (selected), and 'HTTPS'.
 - Auth User Name:** A text input field.
 - Auth Password:** A text input field with a 'Show/Hide' icon.
 - Config Download Path:** A text input field.
 - Firmware Download Path:** A text input field.
- Save:** A green checkmark icon and the text 'Save' at the bottom right of the form.

Note: It is recommended that Provisioning Mode be set to Disabled if this feature is not in use. This will prevent unauthorized re-configuration of the device if DHCP is used.

Provisioning allows installers to pre-configure 8373 Zone Paging Adapter units prior to installation on a network. It is typically used for large deployments to save time and ensure consistent setups.

The device can be provisioned via the Auto mode (where all three DHCP options (Option 66/160/150) will be automatically checked for an active provisioning server), just one of the three specified DHCP options, or a Static Server. In addition, there are four different ways to download provisioning files from a "Provisioning Server": TFTP (Trivial File Transfer Protocol), FTP, HTTP, or HTTPS.

For example, 8373 configuration files can be automatically downloaded from a TFTP server using DHCP Option 66.

This option code (when set) supplies a TFTP boot server address to the DHCP client to boot from.

DHCP must be enabled if using DHCP Option 66/160/150, in order for Provisioning to work.

One of two files can be uploaded on the Provisioning Server (for access via TFTP, FTP, HTTP, or HTTPS):

| | |
|--|-----------------|
| Generic (for all 8373 Paging Adaptors) | algop8373.conf |
| Specific (for a specific MAC address) | algom[MAC].conf |

Both protocol and path is supported for Option 66, allowing for <http://myserver.com/config-path> to be used.

MD5 Checksum

In addition to the .conf file, an .md5 checksum file must also be uploaded to the Provisioning server. This checksum file is used to verify that the .conf file is transferred correctly without error.

A tool such as can be found at the website address below may be used to generate this file: <http://www.fourmilab.ch/md5>

The application doesn't need an installation. To use the tool, simply unzip and run the application (md5) from a command prompt. The proper .md5 file will be generated in the same directory.

If using the above tool, be sure to use the "-l" parameter to generate lower case letters.

Generating a generic configuration file

1. Connect 8373 to the network
2. Access the 8373 Web Interface Control Panel
3. Configure the 8373 with desired options
4. Click on the System tab and then Maintenance.
5. Click "Download" to download the current configuration file
6. Save the file settings.txt
7. Rename file settings.txt to algop8373.conf
8. File algop8373.conf can now be uploaded onto the Provisioning server

If using a generic configuration file, extensions and credentials have to be entered manually once the 8373 Zone Paging Adapter has automatically downloaded the configuration file.

Generating a specific configuration file

1. Follow steps 1 to 6 as listed in the section "Generating a generic configuration file".
2. Rename file settings.txt to algom[MAC address].conf (e.g. algom0022EE020009.conf)
3. File algom[MAC address].conf can now be uploaded on the Provisioning server.

The specific configuration file will only be downloaded by the 8373 Zone Paging Adapter with the MAC address specified in the configuration file name. Since all the necessary settings can be included in this file, the 8373 will be ready to work immediately after the configuration file is downloaded. The MAC address of each 8373 Zone Paging Adapter can be found on the back label of the unit.

For more Algo SIP endpoint provisioning information, see:
www.algosolutions.com/provision

Advanced Settings Tab – Tones

Tone Management

Upload

New Tone File No file selected.

8kHz/16kHz, 16-bit, Mono, PCM/u-law WAV File, or such files in zip format. Please limit the file name to 32 characters, and no spaces.

Tone Files

Functions

Please select a file from the list below to use these functions.

| Name | Size | Modification Date/Time |
|---|--------|------------------------|
| <input checked="" type="radio"/> bell-na.wav | 187 kB | Jul 17, 2013 21:44 |
| <input type="radio"/> bell-uk.wav | 100 kB | Jul 17, 2013 21:44 |
| <input type="radio"/> buzzer.wav | 187 kB | Jul 17, 2013 21:44 |
| <input type="radio"/> chime.wav | 187 kB | Jul 17, 2013 21:44 |
| <input type="radio"/> dogs.wav | 357 kB | Jul 17, 2013 21:44 |
| <input type="radio"/> gong.wav | 187 kB | Jul 17, 2013 21:44 |
| <input type="radio"/> page-notif.wav | 23 kB | Jul 17, 2013 21:44 |
| <input type="radio"/> warble1-low.wav | 187 kB | Jul 17, 2013 21:44 |
| <input type="radio"/> warble2-med.wav | 187 kB | Jul 17, 2013 21:44 |
| <input type="radio"/> warble2-med -27_const.wav | 30 kB | Jan 29, 2016 15:42 |
| <input type="radio"/> warble2-med_FS_const.wav | 30 kB | Jan 29, 2016 15:43 |
| <input type="radio"/> warble3-high.wav | 187 kB | Jul 17, 2013 21:44 |
| <input type="radio"/> warble4-trill.wav | 187 kB | Jul 17, 2013 21:44 |

If you wish to copy a tone file to your local computer, right click the name to download.

Number of Files 13
Total Size 2043 kB

Uploading Custom Audio Files

Custom audio files (WAV format) may be uploaded into memory to play for notification applications.

An existing file may also be modified by downloading the original via the links in the web interface, making the desired changes, and then uploading the new version with a different name. Audio files must be in the following format:

- WAV format
- 8kHz or 16kHz sampling rate
- 16-bit PCM, or u-law
- Mono
- Smaller than 200MB

A zip files containing one or more audio files may also be uploaded. File names must be limited to 32 characters, with no spaces.

Tone Files Included in Memory

The 8373 Zone Paging Adapter includes several pre-loaded WAV files that can be selected to play for various events. The web interface allows selection of the WAV file and also the ability to play the WAV file immediately over the speaker for testing. Files may also be deleted or renamed.

Advanced Settings Tab – Advanced Audio

The screenshot shows the 'Advanced Audio Functions' configuration page. It includes the following settings:

- Dynamic Range Compression (DRC):** Enabled (radio button selected). Description: Compress the dynamic range of page audio to increase loudness.
- Dynamic Range Compression Gain:** 6 (dropdown menu). Description: Specify the amount of compression gain. More gain increases distortion.
- Jitter Buffer Range (milliseconds, 10 ~ 500):** 100 (text input). Description: Adds more buffering if necessary to correct for inconsistent delays on the network. Use of the lowest value generally is recommended.
- Always Send RTP Media:** Disabled (radio button selected).
- Audio Filters:**
 - Speaker Filter G711:** 300Hz High-Pass (dropdown menu). Description: Bandwidth also limited by audio codecs.
 - Speaker Filter G722:** 150Hz High-Pass (dropdown menu).
 - Speaker Noise Filter:** Disabled (radio button selected). Description: Heavy filtering below 150Hz to reduce mains induced noise (fans).

A 'Save' button is located at the bottom right of the configuration area.

Dynamic Range Compression (DRC)

If enabled, compresses the dynamic range of page audio to increase loudness.

Dynamic Range Compression Gain

Higher compression gain increases distortion.

Jitter Buffer Range

The jitter buffer removes the jitter in arriving network packets by temporarily storing them. This process corrects the inconsistent delays on the network. It is recommended to use the lowest value.

Always Send RTP Media

If enabled, audio packets will be sent at all times, even during one way paging mode. This option is needed in cases when the server expects to see audio packets at all times.

Speaker Filter G.711

G.711 speaker filter.

Speaker Filter G.722

G.722 speaker filter.

Speaker Noise Filter

Enables heavy filtering below 150Hz to reduce mains induced noise (fans).

Advanced Settings Tab – Advanced SIP

Outbound Proxy

IP address for outbound proxy. A proxy (server) stands between a private network and the internet.

STUN Server

IP address for STUN server if present.

Register Period (seconds)

Maximum requested period of time where the 8373 Zone Paging Adapter will re-register with the SIP server. Default setting is 3600 seconds (1 hour). Only change if instructed otherwise.

Keep-alive Method

If Double CRLF is selected the 8373 Zone Paging Adapter will send a packet every 30 seconds (unless changed) to maintain connection with the SIP Server if behind NAT.

Different Ports for Extensions

Enable different ports for extensions for certain proxies such as Cisco Communication Manager 7, to send page SIP requests through different port numbers.

Server Redundancy Feature

Two secondary SIP servers may be configured. The 8373 Zone Paging Adapter will attempt to register with the primary server but switch to a secondary server when necessary. The configuration allows re-registration to the primary server upon availability or to stay with a server until unresponsive.

If Server Redundancy is selected the web page will expand as shown below.

Backup Server #1

If primary server is unreachable the 8373 Zone Paging Adapter will attempt to register with the backup servers. If enabled, the 8373 Zone Paging Adapter will always attempt to register with the highest priority server.

Backup Server #2

If backup server #1 is unreachable the 8373 Zone Paging Adapter will attempt to register with the 2nd backup server. If enabled, the 8373 Zone Paging Adapter will always attempt to register with the highest priority server.

Polling Intervals (seconds)

Time period between sending monitoring packets to each server. Non-active servers are always polled, and active server may optionally be polled (see below).

Poll Active Server

Explicitly poll current server to monitor availability. May also be handled automatically by other regular events, so can be disabled to reduce network traffic.

Automatic Failback

Reconnect with higher priority server once available, even if backup connection is still fine.

Polling Method

SIP message used to poll servers to monitor availability.

Advanced Settings Tab – Advanced Multicast

Status
Basic Settings
Additional Features
Advanced Settings
System
Logout

Network
Admin
Time
Provisioning
Tones
Advanced Audio
Advanced SIP
Advanced Multicast

Advanced Multicast Settings

Current multicast mode: Slave
Multicast mode can be set in "Basic Settings > Multicast"

Slave Settings

Audio Sync (milliseconds, 0 ~ 1000)

When using multicast with other third-party devices that have a delay in their audio path, the audio on the 8373 may be heard slightly earlier than on these other devices. Use this feature to add a small delay to the audio output on the 8373 in order to synchronize with these other devices. Applies to Multicast Slave mode only.

Basic Zone Definition

When an Algo device is the multicast master, a page tone will play on the slave device, so it is recommended to set the slave tone to "None".

| Zone | IP Address and Port | Page Tone | Page Volume |
|------------------------|---|-----------|---------------------------|
| Priority Call (DTMF:9) | <input type="text" value="224.0.2.60:50000"/> | <None> | <Use Default Page Volume> |
| All Call (DTMF:0) | <input type="text" value="224.0.2.60:50001"/> | <None> | <Use Default Page Volume> |
| Zone 1 (DTMF:1) | <input type="text" value="224.0.2.60:50002"/> | <None> | <Use Default Page Volume> |
| Zone 2 (DTMF:2) | <input type="text" value="224.0.2.60:50003"/> | <None> | <Use Default Page Volume> |
| Zone 3 (DTMF:3) | <input type="text" value="224.0.2.60:50004"/> | <None> | <Use Default Page Volume> |
| Zone 4 (DTMF:4) | <input type="text" value="224.0.2.60:50005"/> | <None> | <Use Default Page Volume> |
| Zone 5 (DTMF:5) | <input type="text" value="224.0.2.60:50006"/> | <None> | <Use Default Page Volume> |
| Zone 6 (DTMF:6) | <input type="text" value="224.0.2.60:50007"/> | <None> | <Use Default Page Volume> |
| Music (DTMF:7) | <input type="text" value="224.0.2.60:50008"/> | <None> | <Use Default Page Volume> |

Expanded Zone Definition

| Zone | IP Address and Port | Page Tone | Page Volume |
|---------------------|--|-----------|---------------------------|
| Zone 10 (DTMF: *10) | <input type="text" value="224.0.2.110:50000"/> | <None> | <Use Default Page Volume> |
| Zone 11 (DTMF: *11) | <input type="text" value="224.0.2.111:50000"/> | <None> | <Use Default Page Volume> |

↓

| | | | |
|---------------------|--|--------|---------------------------|
| Zone 50 (DTMF: *50) | <input type="text" value="224.0.2.150:50000"/> | <None> | <Use Default Page Volume> |
|---------------------|--|--------|---------------------------|

✔ Save

Audio Sync (Slave Mode)

When paging to the 8373 Zone Paging Adapter as well as other third party devices, the low latency of the 8373 Zone Paging Adapter may cause the audio to lead other devices. By adding audio delay up to one second, the 8373 Zone Paging Adapter may be synchronized with other endpoints or telephones that have greater latency.

Master Output Codec (Master Mode)

Audio encoding format used by the master device when sending output to the slaves.

Master Output Packetization Time (Master Mode)

The size of the audio packets sent by the master to the slaves. 20ms recommended, unless a different value is specifically required for compatibility with other devices.

Zone Definition

The "Expanded" Slave or Master zones can be enabled/disabled in Basic Settings > Multicast. Default IP addresses and ports may be revised for any given zone in the table.

Ensure that the Address and Port settings are the same for all master and slave devices.

Page Tone and Page Volume

Master Mode: By default, the same tone can be set for all slave zones in the Basic Settings > Features tab. Unique paging tones may be revised for any given slave zone in the table above.

Slave Mode: When an Algo device is the multicast master, a page tone will play on the slave device, so it is recommended to set the slave tone to "None". If a page is received from a non-Algo device that doesn't send a tone, a tone can be inserted on the slaves (above) each time they detect page audio starting, allowing them to play a tone.

By default, the same page volume can be set for all slave zones in the Basic Settings > Features tab. Unique page volumes may be revised on a per-zone basis in the table above. For instance, emergency pages can be louder on certain slave speakers.

Status Basic Settings Additional Features **Advanced Settings** System Logout

Network Admin Time Provisioning Tones Advanced Audio Advanced SIP **Advanced Multicast**

Advanced Multicast Settings

Current multicast mode: Slave
Multicast mode can be set in "Basic Settings > Multicast"

Slave Settings

Audio Sync (milliseconds, 0 ~ 1000)

When using multicast with other third-party devices that have a delay in their audio path, the audio on the 8373 may be heard slightly earlier than on these other devices. Use this feature to add a small delay to the audio output on the 8373 in order to synchronize with these other devices. Applies to Multicast Slave mode only.

Polycom Slave Tones

When an Algo device is the multicast master, a page tone will play on the slave device, so it is recommended to set the slave tone to "None".

Group 1

Group 2

↓

Group 25

Save

Polycom Slave Tones

A tone may be set for any of the 25 Polycom Groups. If using an Algo device as a Multicast master, it is recommended to set the slave tones to "None" to avoid conflicts, as the Algo devices already multicast a tone by default.

These settings are available only if the 8373 is set as a Multicast Slave and "Polycom Group Page" or "Polycom Push-to-Talk" are selected in the Basic Settings > Multicast tab.

System Tab - Maintenance

The screenshot shows the 'System Maintenance' page within the 'System' tab. The page has a navigation bar with tabs: Status, Basic Settings, Additional Features, Advanced Settings, System (selected), and Logout. Below the navigation bar are sub-tabs: Maintenance (selected), System Log, Credits, and About. The main content area is titled 'System Maintenance' and contains three sections: 1. 'Backup / Restore Configuration' with options: 'Download Configuration File' (Download button), 'Restore Configuration File' (Browse... button, No file selected., Restore button), and 'Restore Configuration to Defaults' (Restore Defaults button). 2. 'Reboot' with 'Reboot the device' (Reboot button). 3. 'Upgrade to New Firmware' with 'Method' (radio buttons for 'From Local Files' and 'From URL'), 'Firmware Image' (Browse... button, No file selected.), 'MD5 Checksum' (Browse... button, No file selected.), and an 'Upgrade' button.

Download Configuration File

Save the device settings to a text file for backup or to setup a provisioning configuration file.

Restore Configuration File

Restore settings from a backup file.

Restore Configuration to Defaults

Resets all 8373 Zone Paging Adapter device settings to factory default values.

Reboot the Device

Reboots the device.

Method

Specify whether the firmware files will be downloaded from the local computer or a remote URL.

Firmware Image

Point to the firmware image provided by Algo

MD5 Checksum

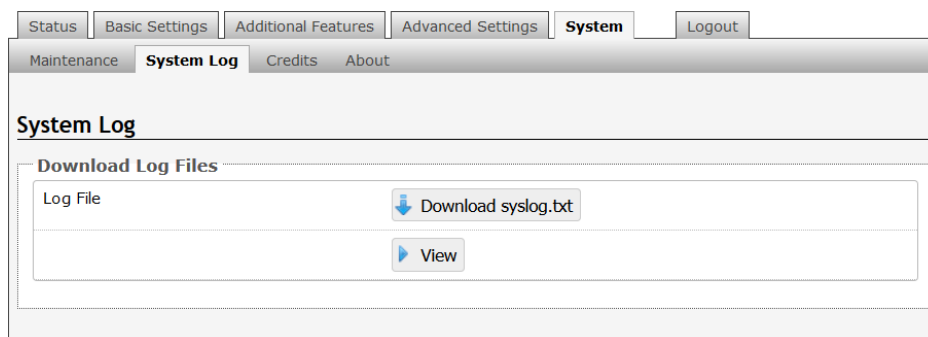
Point to the checksum file provided by Algo

Upgrade 8373 Zone Paging Adapter Firmware

1. From the top menu, click on System, then Maintenance.
2. In the Upgrade section, click on Choose File and select the 8373 Zone Paging Adapter firmware file to upload. Note that both the FW firmware and MD5 checksum files must be loaded.
3. Click Upgrade
4. After the upgrade is complete, confirm that the firmware version has changed (refer to top right of Control Panel).

System – System Log

System log files are automatically created and assist with troubleshooting in the event the 8373 Zone Paging Adapter does not behave as expected.



Specifications

| | |
|---------------------------|--|
| Power Input: | 48 V PoE IEEE 802.3af Class 0 (Max 4.5W - Idle nominal 2.0W) |
| SIP: | Multiple page extensions available |
| Multicast: | Transmit or receive using multicast IP address mapped to paging zone(s). |
| Codec Support: | G.711 A-law, G.711 u-law, G.722, Polycom Group Page |
| Processor: | Linux OS ARM Cortex-A8 32-Bit RISC Processor |
| Line Output: | Low impedance balanced output. Line level -10 dBm / 0 dBm / +4 dBu. Transformer isolated internally. Male mini-XLR connector and pluggable terminal block. Frequency response 100-7000 Hz +/- 3dB. |
| Audio Memory: | 1 GByte |
| Speech Processing: | ALC, filtering, compression |
| Audio Delay: | Programmable 10-1000 ms synchronization delay |
| Page Mode: | Live or delayed (cache and release) |
| Page Zones: | Based on SIP extension called, received multicast IP Address, or keypad events for 8373 configured as page SIP extension. |
| Relay Output: | Normally open or normally closed. Max rating 30V 50 mA. |
| Configuration: | Web interface (HTTP or HTTPS) or autoprovisioning server. |
| Provisioning: | TFTP, FTP, HTTP |
| Supervision: | SNMP |
| NAT: | STUN, CRLF Keep Alive |

| | |
|-----------------------|--|
| Environmental: | +32 to +122 deg F (0 to +50 deg C); Suitable for dry indoor environments only. |
| Dimensions: | 6.5" x 4.3" x 1.3" (16.5 cm x 10.9 x 3.3 cm) |
| Mounting: | Wall mountable or tabletop |
| Weight: | 2.2 lb (1.0 kg) |
| Compliance: | EN60950:2001, IEEE 802.3-2008, RFC3261, RoHS, CE, FCC Class A, CISPR 22 Class A, CISPR 24, CSA/UL (USA & Canada) |

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.