NHI Intercom™ System Features: (in addition to the LightHouse™ Platform Features)

Description:

The ***NHI Intercom™*** system is a network IP based intercom system that operates as a unified system with the ***LightHouse™*** security platform via its communication portal. The ***NHI Intercom™*** *System* provides intercom functionality to your ***LightHouse™*** security system. Unlike traditional security intercom systems, the ***NHI Intercom™*** *System* is an all-digital system providing features and expandability that cannot be matched by any system, new or traditional All data is transmitted on IP networks to simplify wiring and reduce costs, is completely secure and uses industry-standard control and communication protocols.

Innovative Features

The ***NHI Intercom™*** *System* provides features unavailable in many traditional security intercom systems, such as no limit on the number of substations or master stations*, conference calling, automatic call forwarding, paging, voice messaging, text messaging, listen mode, digital audio recording and audit trail.

Substations can be programmed to call any number of master stations, with prioritized call forwarding. If a primary master station does not answer the call in a predetermined time, the call is forwarded to any number of secondary master stations.

Conference calls and paging are easy and flexible. Unlike most traditional intercom systems, conference and paging groups can be created on-the-fly. For example, a user at a master station can select a group of stations from a list and conference them at will, rather than being limited to selecting a predefined conference group (which can be done as well!). When trying to locate an individual, a page can be sent to any, some or all stations and the paged person can answer at any paged station.

Hardware and Software Options

The ***NHI Intercom™*** *System* uses industry-standard SIP protocols for control and communication. This gives the customer a variety of hardware options. The system can use Network Harbor IP substations, which are similar in appearance and operation to typical intercom substations, Network Harbor Master Stations, which come in a variety of configurations, or even off-the-shelf SIP phones.

IP Substations

Network Harbor IP Substations function like typical intercom substations. However, wiring is simplified – using standard CAT-5 Ethernet cabling. Power can be supplied locally (with a wall plug-in-type power supply) or to a group of stations (with a Network Harbor Multi-Station Power Supply). Since the communication is TCP/IP, standard networking cabling and hardware, such as switches and routers, are all that's needed to wire the substations.

Master Stations

Network Harbor Master Stations provide the user with easy control and calling capabilities, as well as user-based permissions. The Master Station module is an optional component to the Network Harbor Modular System Keyboard. This allows the user to select stations and control calls using buttons and a color LCD touch screen controller. The Network Harbor Video Controller module can be added for a unified keyboard – allowing control of video and intercom functions from one control point.

SIP Phone Stations

Standard SIP phones can be used as intercom stations. These phones can dial other stations, dial master stations, substations, or even outside lines. Depending on system configuration and phone capabilities, SIP Phone Stations can do double-duty – functioning as intercom stations on the ***NHI Intercom™*** *SIP based System* and as normal phones on a SIP-based IP phone system, again depending on configuration and capabilities of the IP phone system.

SIP Phone Stations do not have user-based permissions (no user logon required) but hardware-based permissions can be configured in the ***NHI Intercom™*** System to limit what stations can be called.

Client Workstation Master Stations

The ***NHI Intercom™*** *System* includes software components that allow a ***LightHouse™*** *Graphical* Client Workstation to function as a 'soft phone' master station, with all the capabilities of the Network Harbor Modular Keyboard Master Stations. The user can use the PC microphone and speakers, or a headset, to carry on conversations with other stations. In addition, a graphical user interface is provided allowing users to select stations to call, or answer calls, using Graphical Objects (icons) overlaid on floor-plan maps.

Advanced System Architecture and Networking

The ***NHI Intercom™*** System software is hosted by the ***LightHouse™*** *System*. Each ***LightHouse™*** *System* hosts an independent intercom system. Because of the advanced networking capabilities of the ***NHI Intercom™*** system, users at Network Harbor Modular Keyboard Master Stations and Client Workstation Master Stations, can place and answer calls on stations hosted at any ***LightHouse™*** *System* (with proper permissions). This means that users at any location can call stations at any other location, even on different 'systems', with proper permissions.

With this capability, a system can be designed to allow local master stations to call and answer stations at their facility, while a centralized control center can call and answer stations at any number of facilities. And, unlike traditional intercom systems, this requires no additional intercom hardware and has no limitations on the number of stations that can be called or the number of locations either.

Secure Authenticated Communications

The ***NHI Intercom™ system*** uses industry-standard encryption and authentication methods to insure that your communications are secure. Not only are all stations authenticated, but the system maintains status of each station, notifying designated users if any station loses communication. With ***NHI Intercom™*** you can be sure your communications are private and your system is supervised.

Network Audio Recording

The ***NHI Intercom™*** *System* provides Network Audio Recorder (NAR) capabilities. The system can be configured to record the audio streams from designated stations for archiving on Network Audio Recorders (optional software required). These audio streams are linked to system event logs so the audio files can be played back while reviewing system event logs.

A listen mode is also available (announce tone configurable per station) for monitoring of conversations. ** Although it is totally configurable to meet all local laws, please check local laws concerning monitoring or recording of voice conversations**

The ***NHI Intercom™*** *System* is the perfect solution to voice communication requirements in today's security systems.

*Number of substations, master stations and SIP phone stations limited only by network capabilities and computer hardware.

SIP Features via the ***NHI Intercom™/ LightHouse™*** security system

Device State – The system can see which SIP devices are functional, as well as which are currently engaged in a call, and with whom.

Blind Transfer – When devices A and B are in a call and the user of device B decides to transfer A to C blindly the following occurs: Device C rings. Once C picks up, B is dropped from the call, and both A and C are connected.

Transfer with Consultation – When Devices A and B are in a phone call and user of device B decides to transfer A to C with consultation the following occurs: The system places device A on hold; Device C rings, and is connected to Device B. Once B and C have spoken, the transfer is completed by connecting both A and C, while B is dropped from the phone call.

Pending Calls w/ Dynamic Routing – The SIP plug-in will inform ***NHI Intercom™*** users that a call has been made and is on hold allowing the ***NHI Intercom™*** user to route that call to any other device.

Initiate Calls – This will cause any single intercom or to ring and connect to a conference, either new or in progress.

End Calls – This will cause any single phone or intercom to hang up.

Conference Calls – This allows a call to any number of intercoms/ phones and conference all audio. Conference groups can be set up statically (call a single number configured by System Manager and the device will conference all phones in Accounting), or dynamically (start a single call and then invite other devices individually to the same conference via System Manager).

Department Calls - By dialing a single number configured on System Manager, one device will call n phones; the first to answer is placed into the call. All others go silent and are unable to connect to the call.

Participant Audio Control - Set any call/conference participant to mute, deaf, or both.

Paging Calls - By performing a conference call with devices that pick up automatically and have loudspeakers, while muting all other participants, a paging system can be created.

Call Recording - All calls are recorded, with each audio stream being tracked and saved separately. When played back, any number of the audio streams can be played back, in order to hear individual participants clearly.

Authenticated Call Recording - Audio records are time stamped and digitally signed to ensure authenticity. The addition, removal, or manipulation of audio record data will result in a failure to authenticate, thus establishing the providence of the data.

Secured Call Recording - Call records can be exported from the main system by authorized users. They are securely encrypted with AES-256, while still being authenticated as above. Thus audio can be taken off-site if necessary with assurance that lost call records cannot be accessed by unauthorized individuals, while retaining proof of authenticity and the audio data for authorized individuals.

Single Device Calls – A device can be connected to a conference where it is the only user. While this does nothing for communication, the audio is still being recorded. This can be useful for System Manager Users wishing to take notes.

Dynamic Per Device Number Aliasing - A very powerful service. Each device can be configured via System Manager with specific rules dictating behaviors. *Examples of Some of the behaviors that can be scripted:*

- If device A dials "1", connect A with device B.
- If device A dials "1", perform a Department Call between A and the devices associated with the Security department.
- If device A dials "1", perform a Conference Call with A and device associated with the department A is in.
- If device A dials "1", perform a Paging Call between A and any or all intercoms in a building.
- If device A dials "1", perform a Pending Call, which will then be routed by a System Manager user.
- If device A dials "1", between the hours of 8am and 5pm, connect A with the device associated with the Site Security Manager. Outside of those hours, perform a Department Call between A and any or all of the devices associated with the Security department.
- If device A dials "1", perform a Single Device Call with A. When this particular call is finished, the recording will be placed into records with a flag to bring it to the attention of a particular System Manager user. In this way, a user can leave audio notes for ***NHI Intercom™*** users.

NHSC-1100 *IP based Substation*:

The NHSC-1100 IP based intercom substation used with the ***NHI Intercom™ system*** supports all of the ***NHI Intercom™ System*** features. The following technical features are also provided as standard features on the NHSC-1100.

Basic Features:

- Standard substation to Master and Master to substation single calls
- All-Call and Group Call
- IP based networking
- SIP signaling with Digest Authentication
- RTP Transport
- Codec's: G.711
- 64 Kbits/second (80 Kbits with IP overhead)
- 10/100 Mbit Ethernet with Auto Negotiation
- ROHS Compliant- The NHSC-I100 conforms to Restriction of Hazardous Substances Act, which restricts the use of lead and other dangerous substances

Advanced Features:

- Music On Hold
- Eavesdropping Mode (configurable with or without alert depending on local laws)
- Endpoint status reports
- Remote Fault Logging
- Additional Codec's: Wide-Band Speex (others available if required call for information)
- Acoustic Echo Cancellation
- Independent (waterproof) Microphone and Speaker. – Each optimized for best performance task specific rather than a single dual purpose transducer/speaker

Advanced high Level Features:

- SIPS Support (Authentication and Privacy for Control Signals) - Prevents unauthorized parties from controlling the system.
- SRTP Support (Media Authentication and Privacy) – Only Authorized parties can listen to the media streams.
- SIPS/TLS – RSA Authentication – AES Encryption
- Differential Audio Amplifiers- Differential Hardware audio codec and differential audio amplifiers for both speaker and microphone- for advanced noise reduction.
- Variable power supply – ranges from 11V to 24VDC
- Only High Quality Ceramic Capacitors are used to maintain high audio quality and extended product life. Electrolytic Capacitors are not used because the electrolyte degrades within n five years.

NHSC-1100 Hardware Correctional Grade:

- Tamper resistant
- Water Resistant
- Impact resistant
- Installs in standard 2-gang back box
- Call Status LED