

PRODUCT CATALOGUE

This catalogue provides information regarding the Network components, paging and music capabilities, distribution, client services, installation and specifications.





LogiSon™ Acoustic Network

The LogiSon Acoustic Network is a revolutionary and multiple award-winning sound masking, paging and music system. It combines an unprecedented range of adjustment capabilities with the convenience of centralized control and a streamlined design, establishing the standard for performance, ease of use and aesthetics.

This catalogue provides information regarding the Network components, paging and music capabilities, distribution, client services, installation and specifications. If you require additional information about the Network, please contact the LogiSon Representative for your area. Your Representative can arrange a demonstration and provide you with other useful resources pertaining to sound masking and acoustics.

To locate the Representative nearest you, visit our website:

www.logison.com

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

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The High Performance Workplace



Benefits include

- Increased speech privacy
- Reduced noise disruptions
- Improved concentration
- Increased productivity
- Reduced project costs
- Increased facility flexibility
- Simultaneous paging & music
- Quick return on investment

Clients include

A.C. Nielsen
Agilent Technologies
Capital One
CIBC
CNN
DaimlerChrysler
EDS
Ericsson
Ernst & Young
Fortis Bank
Goldman Sachs
Goodwill/Easter Seals
IBM
Kraft
Manulife Financial
Northwestern Mutual Life
Pentair Corporation
Philips
PricewaterhouseCoopers
Procter & Gamble
Rabobank
Royal Bank of Canada
Shell
Siemens
Smith Barney
Standard Life
Target
Telus
Time Warner
Towers Perrin
Volksbank
Xerox

It is well known that uncontrolled noise and lack of speech privacy negatively affect employees' concentration, slowing task performance, increasing errors and threatening the continuity of creative thought. These acoustical problems can also impact their comfort, stress levels and morale.

The "Quest for Silence"

When attempting to resolve these problems, noise control strategies are often pursued in the "Quest for Silence" – the notion that good acoustics are achieved when the sound levels in a space are as low as possible, with zero being the best. However, just as with ergonomic factors such as light, temperature and humidity, there is a comfort level for the volume of sound – and it is not zero.

The noise floor is the level of continuous sound that characterizes a space at any given time. If this floor is too high, the environment will be irritating and tiring. If this floor is too low, conversations and noises can easily be overheard, compromising both confidentiality and concentration. The noise floor in offices is often so low that conversations are intelligible from up to 50 feet (15.2 meters) away. Noticeable rises and falls in sound over time and across these facilities make it even more difficult for employees to 'block out' noise.

Achieving Acoustic Comfort®

Sound masking is part of a proactive approach to providing employees with the productive space they need to excel. It is the only acoustic treatment that can be used to properly control the noise floor, which should generally range between 42 and 48 dBA.

Sound masking makes conversation and noise more difficult to hear and comprehend, reducing distractions and providing confidentiality for employees' activities and conversations. It also reduces the variations in the volume of sound over time and across the space, making the facility appear quieter and movements from one area to another less disruptive.

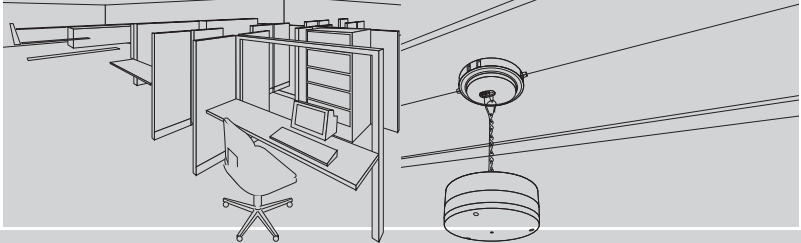
The LogiSon™ Acoustic Network

The LogiSon Acoustic Network is a revolutionary sound masking, paging and music system. Its networked technology ensures that you obtain the best possible results with the speed, ease and versatility expected in the digital age.

The Network has been installed in commercial, financial, government, medical, institutional, educational, hospitality, military and judicial environments, ranging in size from hundreds to millions of square feet.

Continuous Innovation

Our company is exclusively dedicated to developing innovative sound masking system features to meet your needs and incorporated decades of experience into developing the LogiSon Acoustic Network. We strive to continuously increase the functionality of the Network. Recent advances include enabling Ethernet connections, developing addressable Control Panels, and adding Programmable Keypads, in addition to a host of other new features.



Network Overview

In addition to the traditional benefits of sound masking outlined in the introduction, the LogiSon Acoustic Network offers the following unique features:

Multiple Control Options

A centrally-located **Control Panel** provides precise, digital control over all settings for a single speaker, a group of speakers or the entire Network. The ramp-up feature increases acceptance in retrofit installations by gradually increasing the masking volume over a defined period of time, while the timer function allows the volume to vary with activity levels during regular hours or holidays. The priority page feature allows temporary settings to be implemented in emergencies. The Panel also monitors Network performance and security. Centralized control of audio settings and software-based paging, keypad and timer zones keep initial planning requirements low and future flexibility high. The Network can be quickly reconfigured without rewiring or accessing the ceiling.

Ethernet communication between a PC and Control Panel enables adjustments using **Acoustic Network™ Manager** software and provides multiple-floor or entire building control from one location.

Programmable Keypads and the accompanying **Remote** provide on-demand audio control for private offices and conference rooms.



Intelligent Technology

A single line of **Cable** carries power, control and audio signals over the Network. The cable features micro-connectors, enabling quick, accurate and tidy installation.

Hubs are connected to the Control Panel in series. These intelligent components allow the user to program the output of the speakers. Micro-zoning (1 to 3 speakers or 225 to 675 ft², 21 to 63 m²), and fine, digital control over frequency and volume adjustments provide greater customization, effectiveness and comfort than traditional masking systems. The Hubs also provide digital-quality, multiplexed audio without the addition of sound generators, amplifiers or equalizers. This high level of component integration dramatically reduces the costs, energy and space requirements typically needed for audio equipment.

A **Speaker** is connected to each hub and broadcasts the masking sound and other audio signals over the Network. Attractive enclosures and cable enable the Network to be installed in visible applications.

The **Ceiling Mount Adapter** quickly converts the speaker for downward-facing installation in hard ceilings.



Network Control Panel

NCP-2



The Control Panel is the Network's only centralized component. It provides the control, flexibility and functionality of numerous rack-mounted components, reducing costs, energy requirements and the space needed for audio equipment.

The Network Control Panel allows the user to program all Network functions from a central location. Commands can be sent to one, a group or all Primary Hubs on the Network. The Primary Hub then controls the output of the Loudspeaker attached to it and that of the Loudspeakers attached to the Secondary Hubs.

The Control Panel is the Network's only centralized component. It provides the control, flexibility and functionality of numerous rack-mounted components, reducing costs, energy requirements and the space needed for audio equipment.

Network settings, such as volume and equalizer levels for masking and paging, timer, paging and keypad zones, timer schedules, and paging channel selection can be easily and conveniently established, reviewed or changed without entering the ceiling. The Network uses non-volatile memory so that settings are preserved in the event of a power failure.

Each Panel can control up to 125 components, including up to 25 Programmable Keypads. The Control Panels can also be networked together so that the user can control up to 99 Panels from a single PC using Acoustic Network™ Manager software.

Zoning

The Control Panel enables the user to establish independent paging, timer and keypad zones. Hubs are selected and assigned to a group (or zone), which is then named and assigned unique characteristics. Each Control Panel provides three paging zones, as well as an "off" zone, nine timer zones, in addition to an "off" zone, and up to 25 keypad zones. There are no restrictions on the size of these zones and they can be non-contiguous. A single cable between the Network Control Panel and the hubs can provide hundreds of zones.

Paging & Music

The Control Panel accepts up to three paging inputs, which are multiplexed and distributed over the Network. Each Primary Hub can be programmed to play any one of the three channels.

Volume

No amplifiers are required between the audio source and the Control Panel because each Primary Hub features an integrated amplifier. Volume adjustments for each Primary Hub are made from the Control Panel. Masking and paging volume adjustments are independent and can be made in precise 0.5 dBA increments over a range of 35 to 85 dBA. The masking or paging volume can also be set to zero in areas that only require one or the other.

Equalization

The Network offers DSP-based, 1/3-octave equalization for masking and 1/1-octave equalization for paging at each Primary Hub. A wide range of pre-set equalization profiles are available and can be modified as required. Such fine-tuning capabilities allow the user to customize the masking curve to suit the space, increasing the effectiveness of the masking sound.

Timer Functions

The Control Panel features an advanced, calendar-based timer utility that allows the masking settings to be programmed to accommodate varying levels of office activity. Different masking volume schedules can be established for each day of the week and for individual days during the year when unique schedules may be required, such as holidays. Volume changes are made at a user-defined rate, with gradual transitions between events. There is also an introductory acclimatization or ramp-up feature for retrofit installations, which gradually increases the masking volume over a period of 15 days. The ramp-up period can be programmed to begin on a defined date. The Control Panel automatically adjusts for daylight saving time.

Priority Paging

The Control Panel also features a priority page input. When a priority signal is relayed to the Control Panel, it sets the volume to a pre-programmed level and plays the announcement over all Loudspeakers. The LogiSon Network Administrator can set the masking to either continue to run or to mute during the priority page. Once the priority page is complete, the Network returns to its original settings.

Security Features

A key is required to open the Control Panel's enclosure and access the keypad. A password is required to access and program the Network settings. The Control Panel also features two integrated alarm relays, which can be connected to warning lights, sirens or security systems.

Ethernet Connection

Ethernet communication between a PC and the Control Panel enables adjustments using Acoustic Network™ Manager software. The user-friendly software provides all of the Control Panel functions, as well as an expanded range of adjustment options due to the ability of the PC's large screen to display more information simultaneously. The software can also be utilized for diagnostic and record-keeping purposes.

Third Party Control

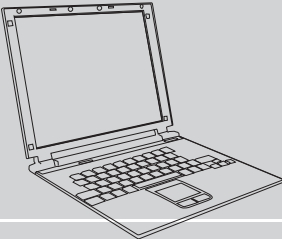
The Control Panel can also be controlled using third party systems.

"The advantages of centralized, networked control of individual speakers, digital accuracy and ease of future reconfiguration or expansion ensure that this latest generation of sound masking technology will keep pace with the ever-changing workplace."

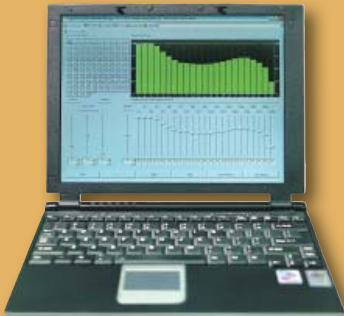
Ericsson Canada Inc.

Manager of Facilities & General Services





A PC equipped with LogiSon™ Acoustic Network™ Manager Software can be used to communicate with the Network when linked to the Control Panel by Ethernet. The user has the ability to control up to 99 Network Control Panels from one location. The PC’s large screen allows more information to be displayed simultaneously, permitting a greater range of adjustment than is directly available through the Control Panel. The user-friendly Software can be used to perform Network configuration and to establish the masking, paging/music, timer and keypad settings. These settings can be saved or printed for diagnostic or record-keeping purposes.



Control Performance

Functions	Control Panel setup, Network setup, masking, paging, timer, keypad settings, audio inputs, and diagnostics
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Masking Performance

Volume	35 to 85 dBA, 0.5 dBA steps, mute
Equalization (w/ PC)	1/3-octave, 23 bands
Preset Contours	50 options

Paging Performance

Audio Input Modules	3, any combination of auxiliary, telephone and/or microphone
Zone Configuration	Zone 1, 2, 3 or none (per Primary Hub)
Volume	35 to 85 dBA, 0.5 dBA steps, mute
Equalization (w/ PC)	1/1-octave, 8 bands
Preset Contours	50 options

Timer Performance

Number of Zones	1 to 9
Size of Zones	Unrestricted
Timer Schedules	Unique schedules for each weekday
Volume Changes Per Day	9
Rate of Change	0 to 9 minutes per increment
Volume Increments	0.5 dBA steps
Masking Acclimatization	1 to 15 days, user-defined schedule, option of 0.5 or 1 dBA steps
Exception Schedules	3 user-defined exception schedules; up to 30 exception dates
Delayed-On Feature	Yes
Daylight Savings Adjustment	Automatic; option of preset international or user-defined schedule

Network Size (Per Control Panel)

Max. # of Network Components	125, including a maximum of 25 Programmable Keypads
Max. # of Loudspeakers	375

Connections

Power Input	3-pin, screw terminal
Network Output	6-pin
Ethernet Connection	10 Base-T RJ-45
Audio Inputs (3)	3-pin, screw terminal
Priority Page	2-pin, screw terminal

Power

Relay Outputs (2)	2-pin, screw terminal
Input	40 Vdc
Output	40 Vdc
Consumption	0.3 A Max or 12 W
Ground	Earth ground

Battery

Size	½ AA
Voltage	3.6 V
Life Expectancy	10 years

Physical Specifications

Dimensions (W x H x D)	28 x 23 x 7.6 cm; 11 x 9 x 3 inches
Enclosure Material	Steel with powdercoat finish
Color	Charcoal grey
Weight	5 lb; 2 kg
Keypad	20-key membrane panel
Display	4 x 20 backlit LCD

Mounting

Methods	4 keyhole mounting positions
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Security

Physical	Key-lock enclosure
Electronic	Password required to access settings; 2 levels

Control Performance

Functions	Communication setup, Network setup, masking, paging, timer, keypad settings, file management, diagnostics and reporting.
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Masking Performance

Volume	35 to 85 dBA, 0.5 dBA steps, mute
Equalization	1/3-octave, 23 bands
Preset Contours	50 options

Paging Performance

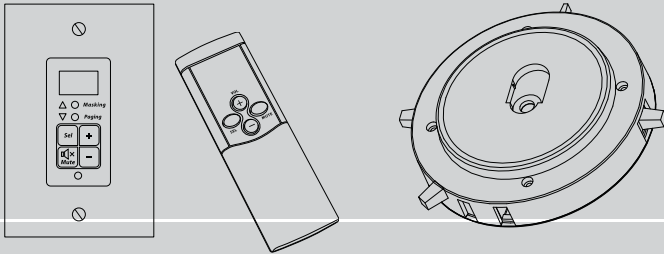
Zone Configuration	Zone 1, 2, 3 or mute (per Primary Hub)
Volume	35 to 85 dBA, 0.5 dBA steps, mute
Equalization	1/1-octave, 8 bands
Preset Contours	50 options

Timer Performance

Number of Zones	1 to 9
Size of Zones	Unrestricted
Timer Schedules	Unique schedules for each weekday
Volume Changes Per Day	9
Rate of Change	0 to 9 minutes per increment
Volume Increments	0.5 dBA steps
Introductory Ramp Up	1 to 15 day user-defined schedule; option of 0.5 or 1 dBA steps
Exception Schedules	3 user-defined schedules; up to 30 exception dates
Delayed-On Feature	Yes
Daylight Savings Adjustment	Automatic; option of preset international or user-defined schedule

Programmable Keypad

PK-1



The Programmable Keypad can be used to adjust or mute the masking and/or paging volume in a defined area of the LogiSon Acoustic Network. Prior to this, the LogiSon Network Administrator will have used the Control Panel or Acoustic Network™ Manager software to establish what area the Keypad controls, what functions are available on it, and the amount by which the user can increase or decrease the volume of the masking or paging. For more information, please see the *LogiSon™ Network Control Panel User Manual* and the *LogiSon™ Acoustic Network™ Manger User Manual*. The Programmable Keypad can be installed in a standard single-gang wall box using a white, Decora-style faceplate.

Control Performance

Functions	Masking/paging volume control, masking/paging mute, remote control receiver
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Masking Performance

Volume Adjustment Range	-99 to +99 (0.5 dBA per increment)
Volume Restriction	User-defined maximum and minimum
Function Restriction	User able to enable or disable the adjustment function

Paging Performance

Volume Adjustment Range	-99 to +99 (0.5 dBA per increment)
Volume Restriction	User-defined maximum and minimum
Function Restriction	User able to enable or disable the adjustment function

Connections

Network Output	6-pin
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Zoning

Method	Electronically zoned using Network Control Panel (V 4.1 or later)
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Zone Size	No limit
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Physical Specifications

Dimensions (W x H x D)	4 x 10.4 x 4.6 cm; 1.58 x 4.1 x 1.825 inches
Color	White
Weight	120 g; 4.2 oz

Remote Control

Remote Receiver	IR remote control receiver for use with PKR-1
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Mounting

Methods	Single-gang wall box with white, Decora-style faceplate
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Programmable Keypad Remote

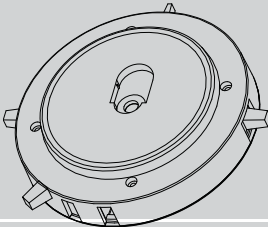
PKR-1



The Keypad also features a remote control receiver, enabling the user to adjust the Keypad's settings using the Programmable Keypad Remote.

Primary Network Hub

PNH-1



The Primary Network Hub is a sophisticated electronic device offering a complete range of audio-related functions. The Primary Hubs are installed throughout the ceiling in a grid-like pattern and a Loudspeaker is attached to each one. These Hubs are connected to the Control Panel in series and are automatically assigned an operating address during initial start-up of the Network. The Control Panel uses this operating address to identify and communicate with the Primary Hubs, allowing the user to program all of the output variables of the Loudspeakers.

The Primary Hub features Digital Signal Processing (DSP) random masking sound generation, a 1/3-octave masking equalizer, a 1/1-octave paging equalizer, integrated volume controls for masking and paging, multiplexed paging selection, an amplifier, and communication technology. This sophisticated level of component integration provides digital-quality audio and industry-leading flexibility, while eliminating the need for centrally-located audio equipment.

Masking Performance

Masking Sound Generation	Digital Signal Processor (DSP)
Volume	35 to 85 dBA, 0.5 dBA steps, mute
Equalization	1/3-octave, 23 bands
Preset Contours	50 options

Paging Performance

Zone Configuration	Zone 1, 2, 3 or none
Volume	35 to 85 dBA, 0.5 dBA steps, mute
Equalization	1/1-octave, 8 bands
Preset Contours	50 options

Timer Performance

Programming	Programmed through Control Panel or Software
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Secondary Hubs Supported

# of Secondaries Per Primary	0 to 2
# of Loudspeakers Per Primary	1 to 3

Connections

Network Input	6-pin
Network Output	6-pin
Secondary Hub Outputs	2-pin (2)
Loudspeaker Assembly Output	2-pin

Cabling

Primary to Primary	CA6 series cable
Primary to Secondary	CA2 series cable

Power

Input	40 Vdc
Consumption	At typical settings, 3.6 W; at maximum settings, 6.4 W

Integrated Amplifier

Power	5 Watts
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Physical Specifications

Dimensions (W x H)	13.0 x 4.5 cm; 5.1 x 1.75 inches
Enclosure Material	Plenum-rated resin
Colour	White or charcoal grey
Weight	0.2 kg; 0.4 lb

Mounting

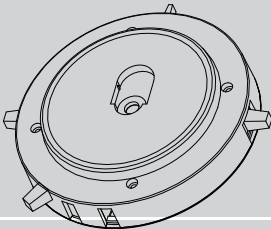
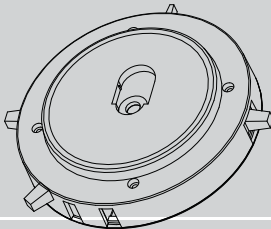
Methods	Flexible mounting options; see installation manual
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Security

Physical	No physical controls on Hub
Electronic	Monitored communication with Control Panel

Primary Power Hub

PNH-1P



Primary Accessory Hub

PNH-1A



The Primary Power Hub contains the same integrated components and provides the same functions as the Primary Network Hub. In addition, it features a power input used to provide the additional power required for larger Networks. Plenum-rated, 2-conductor cabling should be used to connect the Power Supply to the Power Hub and terminated with the supplied connector.

Masking Performance	
Masking Sound Generation	Digital Signal Processor (DSP)
Volume	35 to 85 dBA, 0.5 dBA steps, mute
Equalization	1/3-octave, 23 bands
Preset Contours	50 options
Paging Performance	
Zone Configuration	Zone 1, 2, 3 or none
Volume	35 to 85 dBA, 0.5 dBA steps, mute
Equalization	1/1-octave, 8 bands
Preset Contours	50 options
Timer Performance	
Programming	Programmed through Control Panel or Software
Secondary Hubs Supported	
# of Secondaries Per Primary	0 to 2
# of Loudspeakers Per Primary	1 to 3
Connections	
Power Input	2-pin
Network Input	6-pin
Network Output	6-pin
Secondary Hub Outputs	2-pin (2)
Loudspeaker Assembly Output	2-pin
Cabling	
Primary to Primary	CA6 series cable
Primary to Secondary	CA2 series cable
Power	
Input	40 Vdc
Consumption	At typical settings, 3.6 W; at maximum settings, 6.4 W
Integrated Amplifier	
Power	5 Watts
Physical Specifications	
Dimensions (W x H)	13.0 x 4.5 cm; 5.1 x 1.75 inches
Enclosure Material	Plenum-rated resin
Colour	White or charcoal grey
Weight	0.2 kg; 0.4 lb
Mounting	
Methods	Flexible mounting options; see installation manual
Security	
Physical	No physical controls on Hub
Electronic	Monitored communication with Control Panel

The Primary Accessory Hub contains the same integrated components and provides the same functions as the Primary Network Hub. In addition, it features an accessory input used to attach accessories, such as the Programmable Keypad, to the Network.

Masking Performance	
Masking Sound Generation	Digital Signal Processor (DSP)
Volume	35 to 85dBA, 0.5dBA steps, mute
Equalization	1/3-octave, 23 bands
Preset Contours	50 options
Paging Performance	
Zone Configuration	Zone 1, 2, 3 or none
Volume	35 to 85dBA, 0.5 dBA steps, mute
Equalization	1/1-octave, 8 bands
Preset Contours	50 options
Timer Performance	
Programming	Programmed through Control Panel or Software
Secondary Hubs Supported	
# of Secondaries Per Primary	0 to 2
# of Loudspeakers Per Primary	1 to 3
Connections	
Accessory Connection	6-pin
Network Input	6-pin
Network Output	6-pin
Secondary Hub Outputs	2-pin (2)
Loudspeaker Assembly Output	2-pin
Cabling	
Primary to Primary	CA6 series cable
Primary to Secondary	CA2 series cable
Power	
Input	40 Vdc
Consumption	At typical settings, 3.6 W; at maximum settings, 6.4 W
Integrated Amplifier	
Power	5 Watts
Physical Specifications	
Dimensions (W x H)	13.0 x 4.5 cm; 5.1 x 1.75 inches
Enclosure Material	Plenum-rated resin
Colour	White or charcoal grey
Weight	0.2 kg; 0.4 lb
Mounting	
Methods	Flexible mounting options; see installation manual
Security	
Physical	No physical controls on Hub
Electronic	Monitored communication with Control Panel



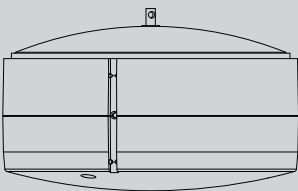
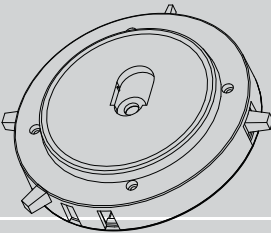
Secondary Network Hub

SNH-1P



Secondary Hubs connect to a Primary Hub and a Loudspeaker is attached to each one. The Secondary Hub's output then duplicates that of the Primary Hub to which it is attached.

Output Performance	
Masking, Paging and Timer Settings	Inherited from Primary Hub
Loudspeakers Supported	
# of Loudspeakers Per Secondary	1
Connections	
Signal Input / Output	2-pin (2)
Loudspeaker Assembly Output	2-pin
Cabling	
Secondary to Primary	CA2 series cable
Secondary to Secondary	CA2 series cable
Power	
Consumption	0 W
Physical Specifications	
Dimensions (W x H)	13.0 x 4.5 cm; 5.1 x 1.75 inches
Enclosure Material	Plenum-rated resin
Color	White and charcoal grey
Weight	0.2 kg; 0.4 lb
Mounting	
Methods	Flexible mounting options; see installation manual
Security	
Physical	No physical controls on Hub



Loudspeaker Assembly

LA-1

A Loudspeaker Assembly is connected to each Hub and used to broadcast the masking, paging and/or music. This component was designed to provide significant flexibility. The same Loudspeaker model is used with all Hubs. A threaded chain mount enables the installer to reverse the Loudspeaker's orientation – up or down – on site. The custom clip allows the length of the chain suspending the Loudspeaker to be adjusted without using tools. The cable retracts into the enclosure to take up slack and ensure tidy installation. In open ceilings, the chain can be replaced with an attractive braided steel cable.

Audio Performance	
Maximum Masking Output	87 dBA
Maximum Paging Output	87 dBA
Driver Specifications	
Frequency Range	90 to 10500 Hz
Dimension	10.1 cm; 4 inches
Power Handling	25 W (RMS)
Sensitivity	88.6 dBA / W / 1 m
Magnet Structure	510 g; 18 oz
Impedance	16 Ohms
Physical Specifications	
Enclosure Type	Sealed
Width	16.5 cm; 6.5 inches
Height	9.0 cm; 3.5 inches
Weight	0.95 kg; 1.9 lbs
Color	White and charcoal grey
Connections	
Loudspeaker Input	2-pin
Cabling	
Loudspeaker to Hub	Integrated cable assembly
Mounting	
Methods	Suspend from hub or from deck or bolt to hub (with CMA-1)
Chain Length	51 cm; 20 inches
Chain Length Adjustment	Tool-free chain clip
Loudspeaker Orientation	Upwards or downwards facing; tool-free reversibility on site
Cable Management	Slack cable retracts into enclosure



Ceiling Mount Adapter

CMA-1

Mounting	
Attachment to Loudspeaker	Lay-in (with option for screw attachment)
Cut Through Diameter	17.2 cm; 6.8 inches
Suspension to Ceiling	3-point suspension
Bolt Size for Suspension	8-32 x 2.5 inches
Backup Suspension	Additional suspension option from d-ring on Hub
Physical Specifications	
Faceplate Diameter	22.0 cm; 8.7 inches
Depth	2.8 cm; 1.1 inches
Material	Plenum-rated resin
Color	White
Weight	0.1 kg; 0.2 lb

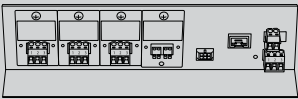
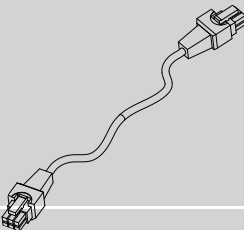


The Ceiling Mount Adapter is used to quickly convert the Loudspeaker for downward-facing installation in gypsum or other hard ceilings. The Hub is mounted directly on the Loudspeaker and this configuration is then lowered into the Adapter once it has been mounted to the ceiling. A steel back plate offers support.

Cable Assemblies

CA2-5, CA2-18, CA2-25

CA6-5, CA6-18, CA6-25, CA6-50, CA6-100



Audio Input Modules

AIM-2A, AIM-2M, AIM-2T



Cable Assemblies connect the components, carrying power, control and audio signals over the Network. The plenum-rated 2-conductor cables are available in standard 5-, 18- and 25-foot (1.5-, 5.5- and 7.6-meter) lengths. The plenum-rated 6-conductor cables are available in standard 5-, 18-, 25-, 50-, and 100-foot (1.5-, 5.5-, 7.6-, 15.2-, and 30.4-meter) lengths. Cable Couplers are used to combine the cables when longer lengths are required. All Cable Assemblies feature custom over-molded micro-connectors with positive lock devices and orientation guides, enabling quick, accurate and tidy installation.

Physical Specifications

Lengths	5 ft, 1.5 m; 18 ft, 5.5 m; 25 ft, 7.6 m; 50 ft, 15.2 m; 100 ft, 30.4 m
Connectors	6- and 2-pin over-molded micro-connectors
Gauge	20 AWG
Material	Copper stranded
Color	White and charcoal grey

Safeguards

Physical	Orientation guides and positive-locking mechanism
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Cable Couplers

CC2, CC6, PC2



Cable Couplers (CC2 and CC6) are used to connect two Cable Assemblies together to offer a longer cable run. They are available in 2- and 6-conductor sizes and feature micro-connectors, permitting quick connections between cables.

If the paging, timer or keypad functions are not needed, the Control Panel can be removed after the user configures the Network. In this case, a Power Coupler (PC2) is used to provide power to the Network. The Power Coupler connects the output from the Power Supply to the cable running to the Hubs.

Physical Specifications

Connectors	6- and 2-pin over-molded micro-connectors
Color	White and charcoal grey

Safeguards

Physical	Orientation guides and positive-locking mechanism
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The Audio Input Modules are used to connect paging and/or music sources to the Control Panel. The Modules offer analog to digital conversation and automatically adjust for input sensitivity. Each Control Panel accepts any combination of three inputs: auxiliary, microphone and telephone.

Auxiliary

Input impedance	100 kohm
Input maximum level	10 V
Input sensitivity for maximum output	300 mV
Gain	Max. 20 dB, adjustable in 32 1 dB steps
Frequency response	20 to 10000 Hz

Microphone

Input impedance	600 ohm
Input maximum level	30 mV
Input sensitivity for maximum output	1 mV
Gain	Max. 70 dB, adjustable in 32 1 dB steps
Frequency response	20 to 10000 Hz

Telephone

Input impedance	600 ohm
Input maximum level	10 V
Input sensitivity for maximum output	300 mV
Gain	Max. 20 dB, adjustable in 32 1 dB steps
Frequency response	20 to 10000 Hz

Relay Output Module

ROM-2

The Relay Output Module is used to connect the Control Panel to up to two external devices, such as warning lights, sirens or security systems.

Relay Output

Rated load	0.5 A at 125 VAC; 1 A at 24 VDC
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Keypad Control

A Programmable Keypad can also be used to adjust or mute the paging volume in a defined area of the LogiSon Acoustic Network. Prior to this, the LogiSon Network Administrator will have used the Control Panel or Acoustic Network Manager Software to establish what area the Keypad controls, what functions are available on it, and the amount by which the user can increase or decrease the volume of the paging.

Overview

Each Control Panel accepts up to three line-level audio inputs, which it multiplexes and distributes over the Network. Sources can include any combination of microphones, music sources and telephone system inputs. When required, mixers can be used to combine signals before they are relayed to the Control Panel.

Paging zones are software-generated rather than hardwired. Each Primary Hub is programmed to broadcast one of the three channels in areas where paging or music is required. The Control Panel or PC is used to manage these zones, as well as the volume and equalizer settings.

A Programmable Keypad can be used to adjust or mute the paging volume in a defined area of the LogiSon Acoustic Network. Prior to this, the LogiSon Network Administrator will have used the Control Panel or Acoustic Network Manager Software to establish what area the Keypad controls, what functions are available on it, and the amount by which the user can increase or decrease the volume of the paging.

High Quality Audio

The LogiSon Acoustic Network provides digital-quality audio. The 25-watt RMS, high sensitivity driver has a wide, flat frequency response and clean audio output of up to 85 dBA. The high density of masking speakers ensures there is a uniform distribution of sound.

Minimal Equipment Requirements

The Control Panel is the Network’s only centralized component. It provides the control and functionality of numerous rack-mounted audio components, reducing costs, energy requirements and the space typically needed for such equipment. Furthermore, no independent amplifiers or equalizers are required because these components have been integrated into each Primary Hub. Volume adjustments can be made in precise 0.5 dBA increments over a range of 35 to 85 dBA. Each Primary Hub includes a 1/1-octave equalizer for paging output. The paging volume and equalization settings are independent of the masking settings.

Priority Page Feature

The Control Panel features a priority page input. When a priority signal is relayed over this line, the Control Panel sets the paging volume to a pre-programmed level and plays the announcement over all Loudspeakers. The Network Administrator can set the masking to either continue to run or to mute during the priority page. Once the priority page is complete, the Network returns to its original settings.

Quick, Easy Changes

All Network settings are handled digitally. There is no need to rewire the Network or access the ceiling in order to rezone or reconfigure the audio settings, permitting fast and inexpensive changes as required.

Site Inspection

Your Representative can visit your facility to ensure the conditions required by the Network are in place and provide you with the opportunity to ask questions and better familiarize yourself with the functions and benefits of the Network. At this time, your paging and/or music requirements can also be reviewed.

Network Design

To properly design the Network, your Representative requires blueprints or CAD files of 1) the reflected ceiling plan, 2) the furniture layout and 3) the partition plan, including a legend showing deck-to-deck wall construction or any other plenum obstructions. Upon provision of these blueprints and other basic information, your Representative will plan the installation of the LogiSon Network. Your Representative will also consult contractors, designers, telephone companies, and other trades as required.

Quotation

After planning the Network design, your Representative will provide you with a quotation.

Installation

Network design and component selection are performed by your LogiSon Representative; however, installation can be handled by the Representative’s in-house technicians, by third-party installation companies, or by your own electrical or audio contractor.

Configuration

To ensure maximum performance of the Network, your Representative will perform the Network configuration either independently or in conjunction with your acoustical consultant. Configuration includes tuning the masking sound, programming timer, keypad and paging zones, timer functions, paging channel selection, volume and equalizer settings.

Maintenance

After installation, your Representative will follow up with you to ensure your satisfaction with the Network’s performance. To ensure the Network operates effectively throughout its lifecycle, we encourage you to maintain contact with your Representative. The Representative can determine if any office changes have been implemented that necessitate retuning the masking sound or other reconfiguration.

Relocation

If you move, your Representative can remove the Network from your current location and install it in your new premises. If necessary, it can easily be expanded.



Overview

Success demands more than just the right product. It requires the expertise of a group of individuals who are dedicated to the proper design and implementation of your sound masking system and can provide you with ongoing service as your organization grows and changes.

Our international representatives bring expertise from numerous facility-related fields and pride themselves on their commitment to customer satisfaction.

“They did an excellent job in all aspects of the project. They kept in steady contact, worked well with the construction company, stayed on budget, and presented no surprises. I would definitely recommend them for any sound masking or related work.”

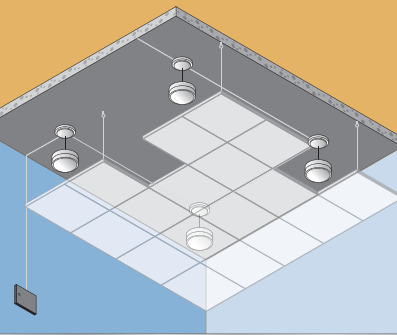
Director of Facilities
Monster

Installation



A Typical Installation

The Hubs are typically installed in a grid-like pattern above the suspended ceiling and a Loudspeaker is attached to each Hub. Primary Hubs are connected to the Control Panel in series. Secondary Hubs are connected to a Primary Hub. The Network can be installed without hard-wiring precise paging, timer or keypad zones, because all zones are software-generated.



If timer and paging and/or music functions are required, the Control Panel can be installed in any specified location. If these functions are not needed, the Control Panel can be removed after your Representative configures the Network. If changes or additions need to be made at a later date, a Control Panel can be reconnected to the Network.

Overview

The Network can be installed in new or retrofit, open and/or closed plan spaces of any size. Installation can be handled by your LogiSon Representative's in-house technicians, by third party companies, or by your own electrical or audio contractor. To ensure maximum performance of the Network, your Representative will perform the Network configuration independently or in conjunction with your acoustical consultant.

The Hubs are typically installed in a grid-like pattern above the suspended ceiling and a Loudspeaker is attached to each Hub. Primary Hubs are connected to the Control Panel in series. Secondary Hubs are connected to a Primary Hub. The Network can be installed without hard-wiring precise paging, timer or keypad zones, because all zones are software-generated.

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If you move, your Representative can remove the Network from your current location and install it in your new premises. If necessary, it can easily be expanded.

Installation is exceptionally efficient because LogiSon components were designed to:

Ensure Accuracy

All cabling connections are clearly marked with embossed icons on the Hubs. The Cable Assemblies feature micro-connectors with positive lock devices and orientation guides that prevent improper connections.

Provide On-Site Flexibility

Loudspeakers can be modified on site to accommodate various installation requirements. The threaded chain mount and flexible enclosure design allow the Loudspeaker to be suspended from the Hub in either upward or downward orientation. The Hub, Loudspeaker and Ceiling Mount Adapter can be quickly attached for downward-facing installation in gypsum or other hard surface ceilings. Hubs can also be installed in a variety of ways, including bolted to the deck, suspended from the deck or suspended from other approved structures within the ceiling. There is also a backup suspension option.

Minimize the Number of Required Tools

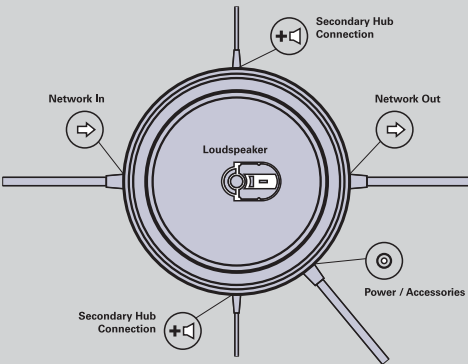
The Cable Assemblies and Cable Couplers feature micro-connectors that simply snap together. Disconnecting the Cable Assemblies from the Hubs only requires disengaging the locking mechanism. The custom clip allows the length of the chain suspending the Loudspeaker to be adjusted without using tools.

Complement the Facility's Appearance

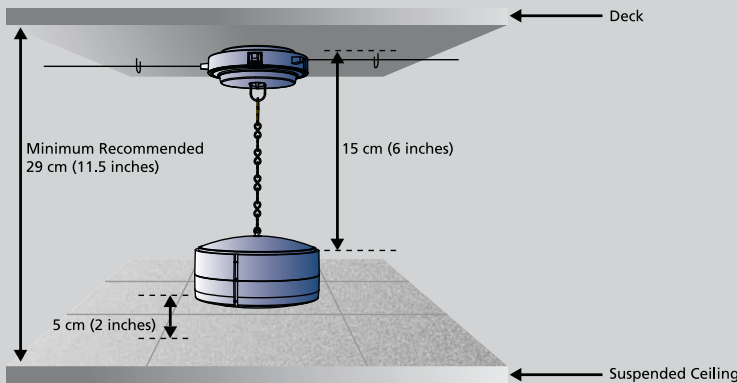
Though the Network is typically installed above the suspended ceiling, it has been designed for visible applications. Modern Loudspeaker enclosures, micro-connectors and fitted Ceiling Mount Adapters complement the investment you make in your facility's professional appearance.

For additional information, please refer to the *LogiSon™ Acoustic Network™ Installation Manual*.

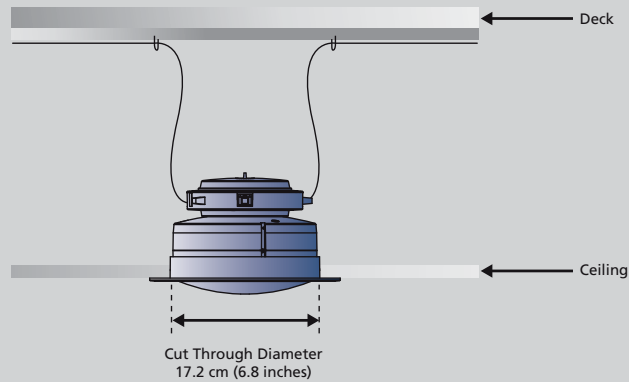
Hub Connections & Icons



Plenum Installation



Cut-Through Installation



MASTERFORMAT™ 2004 EDITION SECTIONS

27 51 19 – SOUND MASKING SYSTEMS
27 51 13 – PAGING SYSTEMS

PREVIOUS MASTERFORMAT™ SECTION

16820 – SOUND REINFORCEMENT / SOUND MASKING SYSTEMS

NOTE TO SPECIFIER

LogiSon™ Acoustic Network – Networked sound masking, paging and music system.

This section is based on the products manufactured by K.R. Moeller Associates Ltd., located at:

3-1050 Pachino Court
Burlington, Ontario
L7L 6B9
Canada

Toll Free	1-866-564-4766
Tel	(905) 332-1730
Fax	(905) 332-8480
Email	info@logison.com
Web	www.logison.com

K.R. Moeller Associates Ltd. also manufactures the Scamp® and AccuMask™ Sound Masking Systems.

(Spec Version 2.0)

1. PART ONE – GENERAL

1.1. SECTION INCLUDES

- A. Sound masking systems
- B. Paging systems

1.2. RELATED SECTIONS

- A. 27 51 19 – Sound Masking Systems
- B. 27 51 13 – Paging Systems

1.3. REFERENCES

- A. UL6500 – Standard for Audio/Video and Musical Instrument Apparatus for Household, Commercial and Similar General Use
- B. UL 2043 – Standard for Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces; 1996
- C. ASTM E 1374-02 – Standard Guide for Open Office Acoustics and Applicable ASTM Standards
- D. ASTM E 1573-02 – Standard Test Method for Evaluating Masking Sound in Open Office Using A-Weighted and One-Third Octave Band Sound Pressure Levels
- E. ASTM E 1130-02e1 – Standard Test Method for Objective Measurement of Speech Privacy in Open Offices Using Articulation Index

F. FCC – EN 55103-1&2 – Audio, Video and Entertainment Lighting Control

1.4. PERFORMANCE REQUIREMENTS

A. General Performance

- 1. The sound masking and paging system shall be entirely centrally controllable from a control panel and / or an attached computer (including over multiple floors).
- 2. The system shall be able to automatically assign an address to individual network components.

B. Sound Masking Performance

- 1. The system shall use digital signal processing (DSP) technology for masking sound generation and adjustment of masking and paging signals.
- 2. The masking sound shall be random and provide no noticeable repetitive pattern.
- 3. The primary network devices shall provide a 1/3 of an octave equalizer for the masking signal, capable of equalizing zones of 1 to no more than 3 speakers.
- 4. The masking volume shall be digitally adjustable in 0.5 dBA increments at each primary network device (controlling 1 to no more than 3 speakers) over a range of 35 dBA to 85 dBA @ 1m.
- 5. The system shall be capable of muting the masking volume at each primary network device.
- 6. After adjustment, the system shall provide a spatial uniformity of +/-½dBA for the masking volume with furnishings in place.

C. Paging Performance

- 1. The primary network devices shall provide a 1/1-octave equalizer for the paging signal, capable of equalizing zones of 1 to no more than 3 speakers.
- 2. The paging volume shall be digitally adjustable in 0.5 dBA increments at each primary network device (controlling 1 to no more than 3 speakers) over a range of 35 dBA to 85 dBA @ 1m.
- 3. The system shall carry three digital multiplexed paging channels.
- 4. The network control panel shall accept up to three audio input modules with any combination of auxiliary, telephone or microphone inputs.
- 5. The system shall be able to assign one of the three paging channels to each primary network device.
- 6. The system shall be able to change the paging channel assigned to a primary network device without rewiring.
- 7. The system shall be capable of muting the paging signal at each primary network device.
- 8. The system shall provide a priority paging override of existing paging settings.

D. Timer Performance

- 1. The system shall provide a timer function allowing masking volume levels to be automatically adjusted according to a programmed schedule.
- 2. The system shall provide a calendar-based programmable timer function. Timer schedules shall be assigned to an individual or group of primary network devices.
- 3. The system shall provide automatic daylight saving time adjustments.
- 4. The system shall provide an acclimatization process that automatically increases the masking volume over a period of time according to a programmed schedule. The system should allow for independent acclimatization schedules for each timer zone.
- 5. The system shall allow for up to nine independent timer zones per control panel/programmable timer.
- 6. The system shall allow independent timer schedules for each day of the week.
- 7. The system shall allow variable rates of volume adjustment.
- 8. The system shall provide optional exception timer schedules for calendar days requiring a different schedule from the norm.

9. The system shall offer a programmed system activation date.

E. In-Room Occupant Control

1. The system shall capable of including wall mounted, in-room programmable keypads giving the facility occupants manual control over the masking and paging volumes
2. The keypads shall be capable of adjusting masking and paging volumes independently.
3. The keypads shall be capable of restricting access to masking and/or paging volume control.
4. The keypads shall be capable of restricting the range of allowable volume adjustment for masking and paging independently.
5. The keypads shall be capable of individually muting the masking and paging output.
6. The keypads shall provide an infrared remote control receiver.

F. Diagnostic Performance

1. The system shall be capable of ensuring that the expected number of primary network devices is present and communicating properly with the network control panel.
2. The system shall be capable of identifying the primary network devices that are not communicating properly over the network.

G. Reporting Performance

1. The network control panel shall be capable of reading and displaying the current settings for all primary network devices.
2. The system shall be capable of generating detailed reports of all system settings down to the level of individual primary network devices.

H. Security Performance

1. The network control panel shall be contained in a locked metal enclosure.
2. Access to the control panel functions shall be password protected.
3. No physical controls shall be located on the system loudspeakers or primary network devices.
4. The system shall allow for all settings to be backed up on an electronic storage medium
5. The system shall monitor performance at each network component.

1.5. SUBMITTALS

- A. Product Data: Manufacturer’s specifications and installation instructions
- B. Network Design: Schematics of the network showing quantity and location of network components and related cabling and accessories
- C. Warranty Documents: Warranty documents covering the network components.

1.6. QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum of 10 years manufacturing sound masking systems.
- B. Network Design – Performed by an approved manufacturer representative.
- C. Installer Qualifications – Approved by manufacturer representative and are trained with the specified products or have demonstrated experience with the installation of similar products to those specified.
- D. Network Adjustment – Done by an approved manufacturer representative or trained contractor
- E. Single Source Responsibility – Source Network Control Panels, Primary and Secondary Network Devices, Loudspeaker Assemblies, Programmable Keypads and Cable Assemblies from a single manufacturer.

1.7. DELIVERY, STORAGE AND HANDLING

- A. Protect from moisture during shipping, storage and handling.
- B. Deliver in manufacturer’s original unopened and undamaged packages with manufacturer’s labels legible and intact.
- C. Inspect manufacturer’s packages upon receipt.
- D. Handle packages carefully.

1.8. WARRANTY AND MAINTENANCE

- A. Provide a written warranty that products installed shall be free from defects in parts or assembly for a 5-year period from date of first use (the date of network initialization)

2. PART TWO – PRODUCTS

2.1. MANUFACTURERS

- A. Acceptable Manufacturer: K.R. Moeller Associates Ltd.; 3-1050 Pachino Court, Burlington, Ontario L7L 6B9 Canada. Toll Free: 866 LOGISON (1-866-564-4766). Tel: (905) 847-8633. Fax: (905) 847-7709. Email: info@logison.com. Web: www.logison.com.
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered provided that the all performance requirements in Section 1.4 of this specification are met. Other manufacturers seeking approval must provide a signed compliance statement from an executive officer of the manufacturer.

2.2. NETWORK COMPONENTS

General System Overview: The sound masking and paging system shall be a networked decentralized system with complete digital, central control down to individually addressable speakers. The system shall be comprised of a selection of a) distributed primary network devices; b) distributed secondary network devices; c) loudspeaker assemblies; d) one or more network control panels; e) pc network control software; f) programmable keypads; g) cable assemblies h) audio input modules; i) ceiling mount adaptors and j) one or more power supplies.

A. Each primary network device shall provide:

1. A DSP-based masking sound generator
2. An individual 1/3 of an octave, 23-band equalizer for masking
3. An individual 1/1 octave, 8-band equalizer for paging
4. An individual volume control for masking
5. An individual volume control for paging
6. Network communication components
7. A paging channel selector and demultiplexer
8. An audio amplifier
9. Overall dimensions of:

- | | |
|-------------|---------------------|
| i. Diameter | 5.1 inches; 13.0 cm |
| ii. Height | 1.75 inches; 4.5 cm |

B. Each secondary network device shall provide:

1. A loudspeaker connection
2. Signal connections to/from other primary/secondary devices
3. Overall dimensions of:

- | | |
|-------------|---------------------|
| i. Diameter | 5.1 inches; 13.0 cm |
| ii. Height | 1.75 inches; 4.5 cm |

- C. Each loudspeaker assembly shall provide:
1. A connection to the network devices
 2. A suspension chain at least 20 inches (51 cm) in length and tool-less length adjustment clip
 3. An acoustically damped enclosure
 4. Tool-less, on-site adjustment of upward / downward loudspeaker orientation
 5. Overall dimensions of:

i. Diameter	6.5 inches; 16.5 cm
ii. Height	3.5 inches; 9.0 cm
 6. A loudspeaker driver with:

i. Diameter	4.0 inches; 10.0 cm
ii. Power Rating	25 Watts RMS
iii. Sensitivity	87 dBA @ 1W / 1m
iv. Frequency Response	100 - 10,000 Hz (+/- 6 dB)
v. Impedance	16 Ohms
vi. Magnet Structure Weight	17.6 oz; 500 g
- D. Each network control panel shall provide:
1. Network communication components
 2. Network control electronics for masking, paging and timer functions
 3. Connections for audio input modules
 4. Paging multiplexing circuitry
 5. Connections to network devices, additional control panels and a computer
 6. Ethernet connection and IP addressability
 7. Overall dimensions of:

i. Height	9.4 inches; 23.8 cm
ii. Width	11.0 inches; 28.0 cm
iii. Depth	3.2 inches; 8.0 cm
- E. The PC network control software to:
1. Allow control of all system adjustments from a computer, including:

i. Network setup
ii. Sound masking volume and equalization
iii. Paging volume and equalization
iv. Sound masking timer programs
v. Paging zoning
vi. Programmable Keypad setup
 2. Allow the reporting of all system settings
 3. Perform network diagnostics
- F. Programmable Keypads shall provide:
1. Network communication components
 2. A display indicating function selection and volume adjustments
 3. A keypad interface for controlling all functions (masking/paging selection, volume increase/decrease, mute)
 4. An infrared remote control receiver
 5. An enclosure capable of being installed in a single gang box
- G. Cable assemblies to:

1. Provide power, audio and control signals over a single cable assembly
 2. Provide overmolded micro-connectors
- H. Audio Input Modules to provide:
1. Audio input for microphone, telephone or auxiliary audio sources
 2. Level adjustment controls
- I. Ceiling Mount Adaptors to:
1. Attach on-site to convert plenum loudspeakers to ceiling plate loudspeakers
- J. Power Supplies to:
1. Power the network devices and control panels

3. PART THREE - EXECUTION

3.1. NETWORK DESIGN

- A. Design network according to manufacturer's specifications.

3.2. EXAMINATION

- A. Ensure that facility build out is at a stage suitable for the system installation.
- B. Ensure that facility is constructed according to plans including wall locations, ceiling types and plenum barriers.
- C. Ensure that the plenum height is appropriate as per manufacturer's recommendations and as per plan.
- D. Ensure power requirements have been provided as per plan.
- E. Ensure sufficient space for centrally located components is available as per plan and manufacturer's specifications.
- F. Ensure any third-party components required to be interfaced with the network have been provided.

3.3. PERMITS

- A. Obtain necessary permits for installation work.

3.4. INSTALLATION

- A. Follow all applicable codes for the area
- B. Follow manufacturer's recommendations regarding installation as found in the LogiSon Acoustic Network Installation Manual
- C. Follow the system design for location of loudspeakers and wiring
- D. Record any necessary changes to the system design on the plan
- E. Ensure that supplementary materials used meet applicable safety standards

3.5. FIELD QUALITY CONTROL

- A. Ensure that plenum heights meet the minimum recommended by the manufacturer for the loudspeakers
- B. Ensure that distance between the top of the loudspeaker and the deck meets manufacturer's minimum specifications
- C. Ensure that loudspeakers are suspended in a level manner
- D. Ensure that loudspeakers are not obstructed as much as possible
- E. Ensure cables are properly supported in the ceiling
- F. Ensure cables are securely terminated

3.6. NETWORK CONFIGURATION AND ADJUSTMENT

- A. Follow manufacturer's recommendations for system settings as found in the LogiSon User Manual

3.7. CLEANING

- A. Ensure that empty packaging is removed.
- B. Ensure that any material waste is removed
- C. Ensure the product is clean and presentable where required

3.8. DEMONSTRATION AND TRAINING

- A. Demonstrate operational system to customer by walking the space
- B. Demonstrate functionality of the system to the customer or customer's representative
- C. Train customer employee to maintain system as required

3.9. TESTING AND REPORTING

- A. Test area for consistency of masking volume and quality
- B. Verify that paging zoning and levels are appropriate and as per plan
- C. Test masking volumes with mechanicals off and with space unoccupied
- D. Provide a printed report detailing system settings

Acoustic Control at Your Fingertips™



info@logison.com

www.logison.com

1.866.LOGISON

Patents pending in U.S., Canada and other jurisdictions.
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