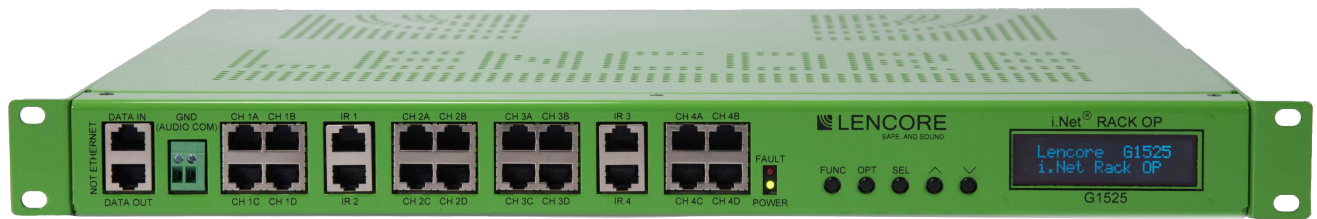




COMFORT. PRIVACY. PRODUCTIVITY.



OPERATIONS MANUAL

QUAD OP OPERATING PLATFORM
(Model G1525)

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In the event of trouble, please contact:

Name:

Address:

Phone Number:

IMPORTANT SAFETY INSTRUCTIONS



**RISK OF ELECTRIC SHOCK- DO NOT OPEN THE UNIT.
THERE ARE NO SERVICABLE COMPONENTS INSIDE.**

- 1) Read these instructions.
- 2) Keep these instructions. Instructions are to be framed and placed adjacent to the control unit for ready reference.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- 14) **WARNING** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture and do not expose to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus

i.Net Quad OP

The primary sound source of the i.Net system is the Quad OP (Operating Platform) - A 1RU rack mount unit that offers 4 OP's in 1, that produces, equalizes and distributes the sound. Each Rack OP includes:

- Multiple, random sound masking sources, coupled with Lencore's technology, produce a sound quality that is random, making it exceptionally comfortable environment.
- Independent equalizers for unprecedented tuning where every channel of the system has a separate and independent 1/3rd octave band equalizer or parametric equalizer.
- Sound frequencies and contour can be adjusted and set to any point on the acoustical curve, from 20 Hz to 20 kHz, making i.Net the first networked sound masking system to make fine-tuning the entire spectrum of sound possible.
- The multi-drop system and network is intelligent enough to bypass any failure in the system to keep communicating throughout the entire network. Point-to-Point networks can not achieve this level of connectivity and diagnostic control.

Groupings of sound sources and channels let you customize an almost limitless number of zones for masking, paging and music, while maintaining the advantages of complete networked operation and control.

Note: The i.Net Quad OP requires a Headend for music and paging applications.

Features and Capabilities:

The i.Net Quad OP includes many built-in features that used to require separately purchased components.

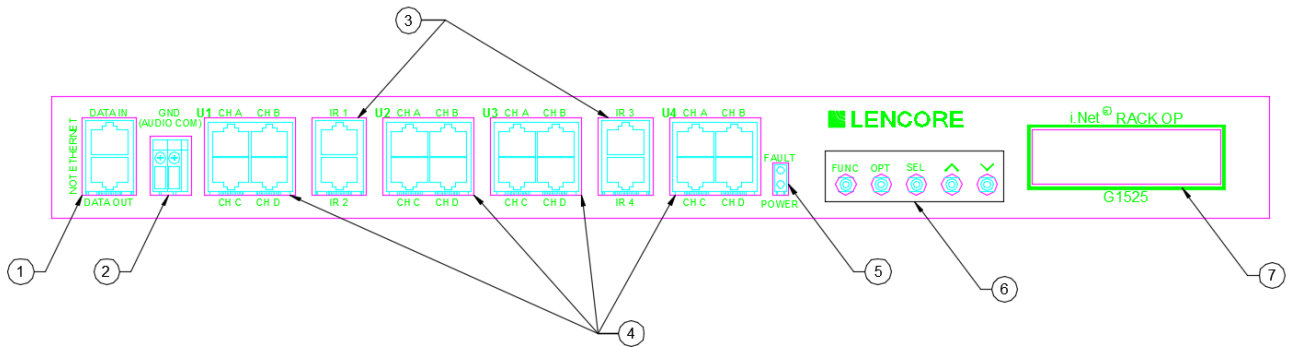
- **Data Entry Switches.** The data entry switches allow the user to make a number of adjustments to the system without using a computer.
- **LCD display.** The front panel display is used for displaying a variety of information.
- Four independent OP's in one unit for a total of 128 speakers on one unit
- Four IR input ports to control each OP separately with IR wall plates.

Installing the i.Net Quad OP:

The i.Net Quad OP is designed to be installed in a standard 19" rack. Use four of the appropriate screws designed for the rack to mount to the OP.

Important: A 1RU of empty space is required immediately above the i.Net Quad OP for heat dissipation. Failure to leave 1RU of empty space above the OP can result in the OP overheating and eventual failure.

Front Panel



1. Data In/Out

Connect the Data out from the head-end or previous OP to the OP Data In. Connect the Data out to the next OP Data In using RJ45 cables.

2. GND (Audio Common)

Connection for the ground wires to the head end and next OP ground connector.

3. IR

Connect IR wall units to these inputs using RJ45 cables.

4. Channels

Connect external speakers to the Channel's RJ45 connectors.

5. LEDs.

The PWR LED is on when power is applied to the unit. The Fault LED is on when the system is in a fault condition.

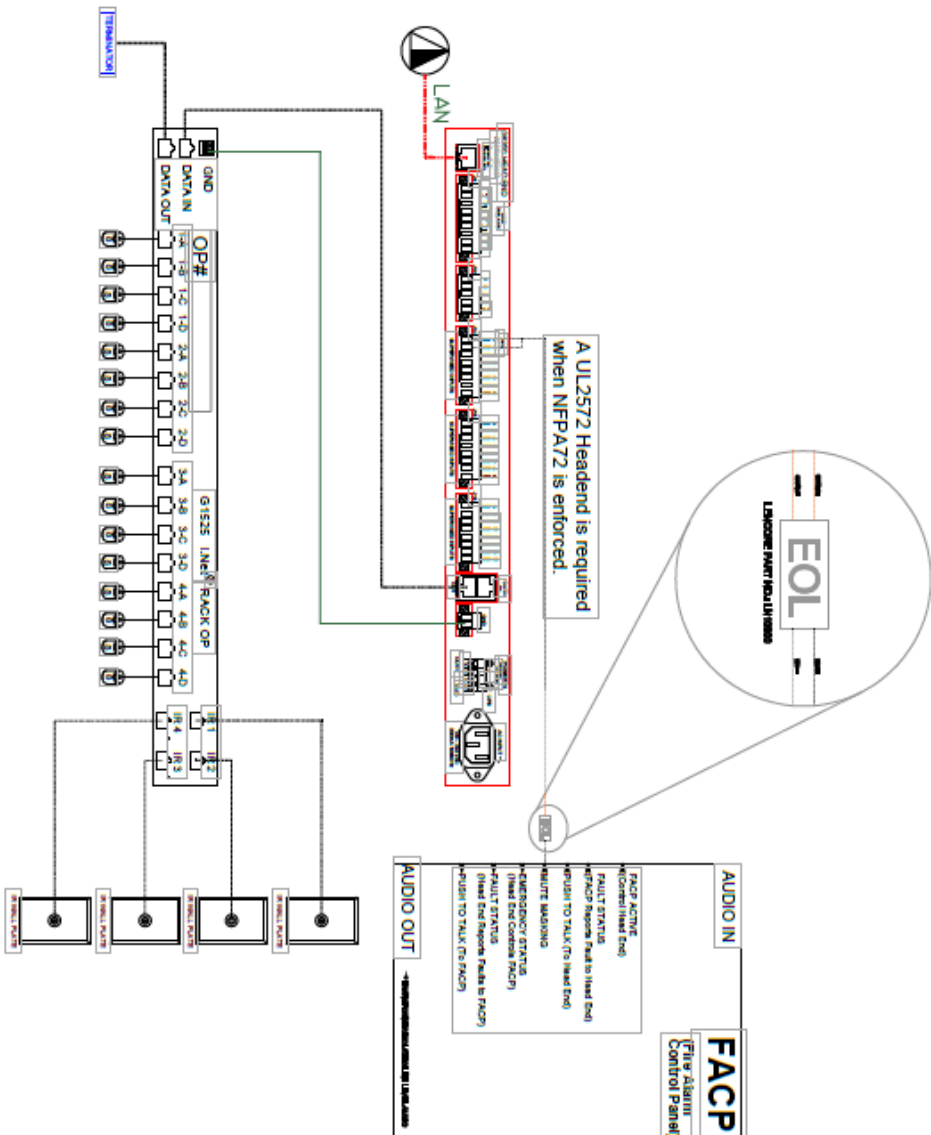
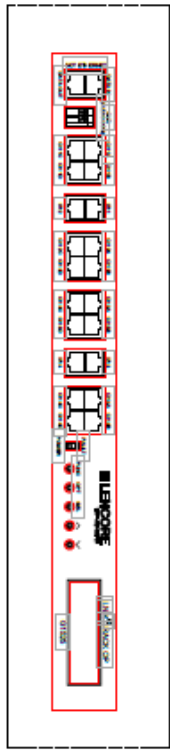
6. Data Entry Switches

The data entry switches are used to make a number of adjustments to the system without using a computer.

7. LCD Display

The LCD displays various diagnostic messages and configuration information about the system.

Wiring



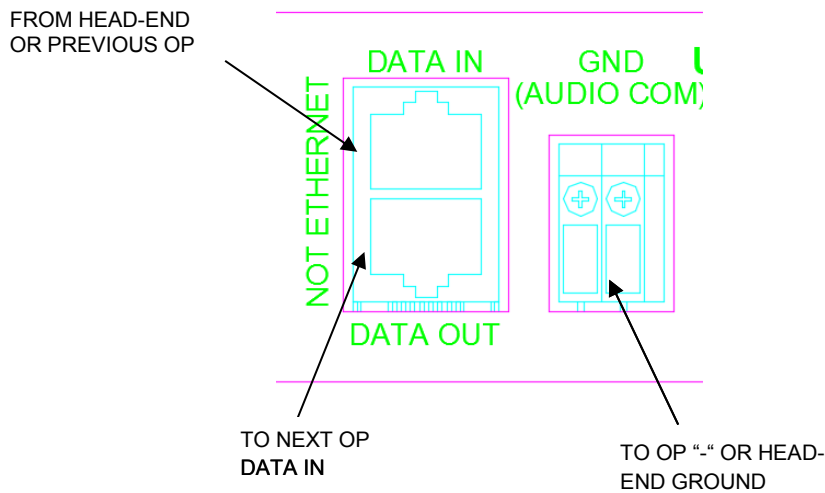
Wiring

Power and Network connections:

1. Plug the unit into a standard 115VAC power outlet. The system will be usable in approximately 10 seconds.

Data, and Ground connections:

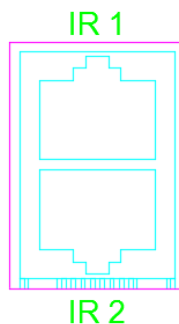
1. Wire the Data in cable to the previous OP or head-end Data out. Wire the Data Out cable to the next OP's Data In. On the last OP only, connect a data terminator to the OP's data out port
2. Wire a ground wire from the GND connector to the previous and next OP ground or to the headend common. Audio Common (not building ground).



IR connections::

1. Connect an IR unit to the IR port.
 - IR1 for U1 speakers.
 - IR2 for U2 speakers.
 - IR3 for U3 speakers.
 - IR4 for U4 speakers.

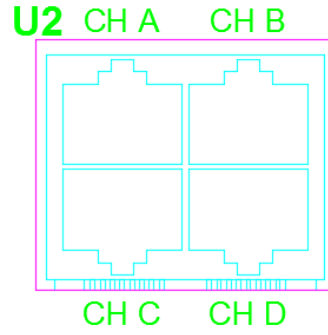
***Note: "U" refers to the unit number, not the OP number.**



Wiring

Speaker connections:

1. Connect the external speakers to the appropriate channel using cat 5 RJ45 cables.
Note: "U" refers to unit number not the OP number.



Wiring

Speaker Cable (RJ45) 568B

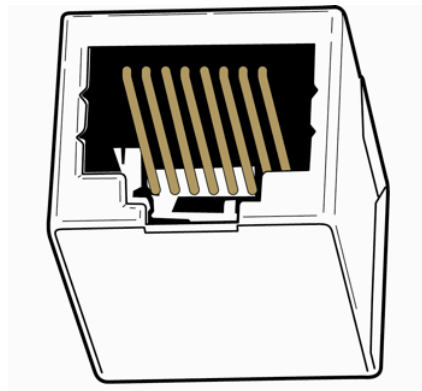
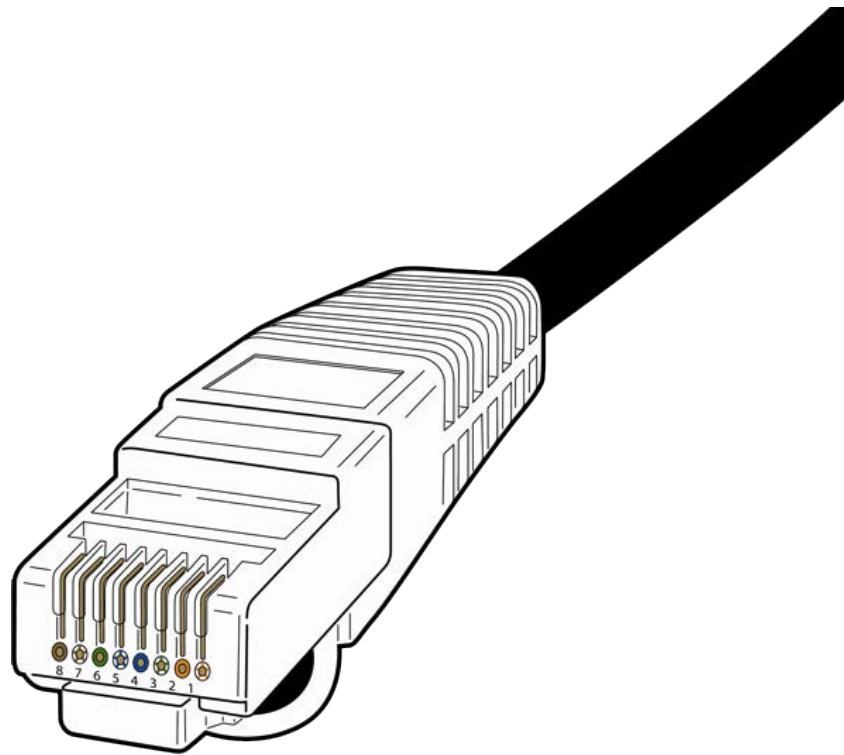
Speaker Cable connections are from the Quad OP to speakers and from speaker to speaker.

The pin out on the RJ45 is 568B.

The RJ45 connectors for the SPEAKER cables are non shielded.

PINS - 568 B

- 1 ORANGE|WHITE
- 2 ORANGE
- 3 GREEN|WHITE
- 4 BLUE
- 5 BLUE|WHITE
- 6 GREEN
- 7 BROWN|WHITE
- 8 BROWN



- 1 AUDIO (+)
- 2 AUDIO (+)
- 3 AUDIO (+)
- 4 AUDIO (+)
- 5 AUDIO (-)
- 6 AUDIO (-)
- 7 AUDIO (-)
- 8 AUDIO (-)

Wiring

Data Cable (RJ45) 568B

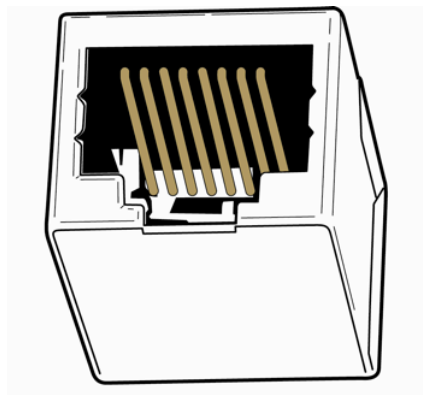
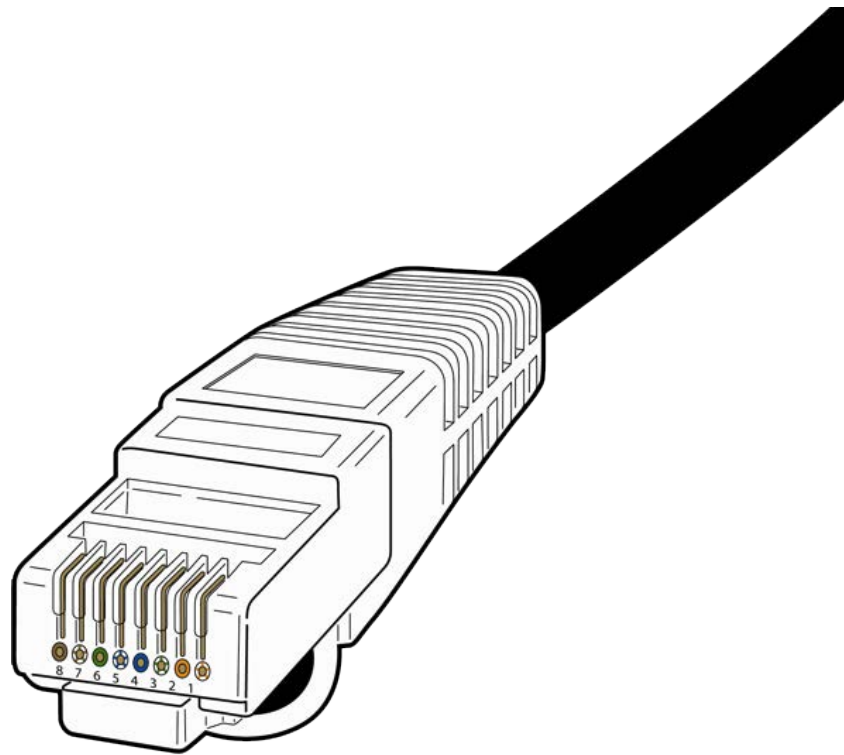
Data Cable connections are from the headend to the Quad OP and from i.Net OP to i.Net OP.

The pin out on the RJ45 is 568B.

The RJ45 connectors for the SPEAKER cables are non shielded.

PINS - 568 B

- 1 ORANGE|WHITE
- 2 ORANGE
- 3 GREEN|WHITE
- 4 BLUE
- 5 BLUE|WHITE
- 6 GREEN
- 7 BROWN|WHITE
- 8 BROWN

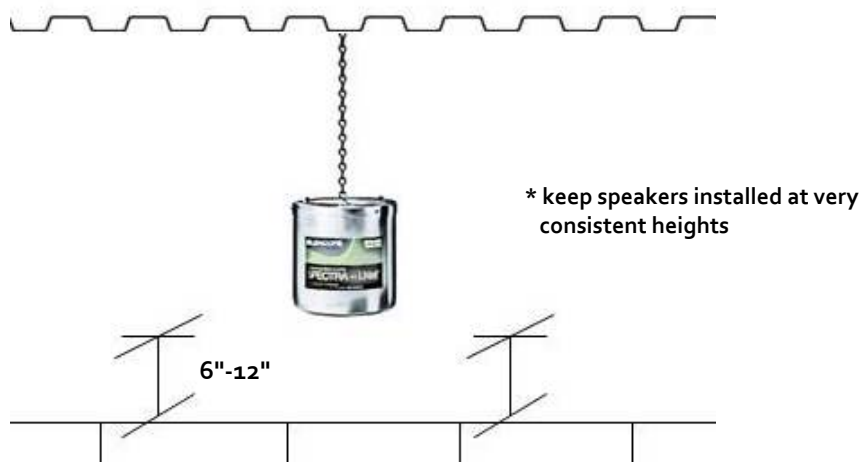


- 1 LON A | ILON® DATA NETWORK
- 2 LON B | ILON® DATA NETWORK
- 3 INITIALIZATION (SEQUENCER)
- 4 PAGE (+)
- 5 PAGE (-)
- 6 INITIALIZATION (SEQUENCER)
- 7 MUSIC (+)
- 8 MUSIC (-)

Hang Speakers

Data Cable (RJ45) 568B

- 1 Climb ladder and access the ceiling plenum
- 2 Hang speaker units in plenum area at marked locations using preferred hanging method (powder action gun such as a Hilti-gun™ or drill and screw; check your local building codes for allowable hanging methods and standards)
- 3 Drive a nail holding the clip with the speaker chain and speaker into ceiling
- 4 Pull and connect audio cables to speakers by channel



NOTE: If installing Inline speakers, make sure the potentiometer on the bottom of the speaker is set to the MAXIMUM (clockwise) setting.

Configuring the System

The system must be configured before any paging or music functions are used. The data entry switches can be used to configure and adjust the system for many functions. System Manager must be used to create any zones or to make more detailed adjustments such as equalizer settings. See below for switches usage and the System Manager manual for using System Manager.

Front Panel Switches:

The switches allow the user to make a number of adjustments to the system without using a computer, although, a computer and System Manager are still required for full control of all functions. A selection can be made by continually pressing and releasing the switch.



The display shows OP operational data:

The upper left part of the display displays the function. The upper right displays the current option, within that function. The lower left displays the Channel or Zone # that is related to the function. The lower right displays the value associated with that channel or zone.



The **FUNCTION** button selects the function to be changed within each mode.

The **OPT** button selects the operation.

The up and down *arrows* increment and decrement the settings.

The **SEL** key is used to select operations.

Options and Functions:

OP Status

Function	Option	Action
Masking Volume	OP/Channel	Select
	Zone	Select
Masking Contour	OP/Channel	Select
	Zone	Select
Mask Mute	OP/Channel	Select
	Zone	Select
Music Volume	OP/Channel	N/A
	Zone	N/A
Music Mute	OP/Channel	N/A
	Zone	N/A
Paging Volume	OP/Channel	N/A
	Zone	N/A
Paging Mute	OP/Channel	N/A
	Zone	N/A
Voltages	Voltage	N/A
Neuron Version	N/A	N/A
Start OP #	N/A	OP # Up/Down

Operation Examples:

Masking Volume:

Press the **FUNC** button until “Mask Vol” is displayed.

OP/Channel:

Press the **OPT** button until “OP” is displayed.

Press the **SEL** button until the curser is on the value to change (OP number, channel letter, or volume).

Use the up and down *arrows* to increment and decrement the selected value.

Zone:

Press the **OPT** button until “ZN” is displayed.

Press the **SEL** button until the curser is on the value to change (Zone number or volume).

Use the up and down *arrows* to increment and decrement the selected value.

Masking Contour:

Press the **FUNC** button until “Mask Cntr” is displayed.

OP/Channel:

Press the **OPT** button until “OP” is displayed.

Press the **SEL** button until the curser is on the value to change (OP number, channel letter, or volume).

Use the up and down *arrows* to increment and decrement the selected value.

Zone:

Press the **OPT** button until “ZN” is displayed.

Press the **SEL** button until the curser is on the value to change (Zone number or volume).

Use the up and down *arrows* to increment and decrement the selected value.

Masking Mute:

Press the **FUNC** button until “Mask Mute” is displayed.

OP/Channel:

Press the **OPT** button until “OP” is displayed.

Press the **SEL** button until the cursor is on the value to change (OP number, channel letter, or volume).

Use the up and down *arrows* to increment and decrement the selected value.

Zone:

Press the **OPT** button until “ZN” is displayed.

Press the **SEL** button until the cursor is on the value to change (Zone number or volume).

Use the up and down *arrows* to increment and decrement the selected value.

Voltages:

Press the **FUNC** button until Voltages is displayed.

Press the **OPT** button to select the various voltages to display.

Note: Voltages cannot be changed, they can only be monitored.

Neuron Version:

Press **FUNC** button until version neuron is displayed.

The display will show the current Neuron version.

Start OP #:

Press **FUNC** button until start OP # is displayed.

Use the up and down arrows to increment and decrement the OP number of unit 1.

Units 2-4 will automatically be numbered

Press **SEL** then cycle power to save values.

PWR/SER

A green PWR (Power) LED indicates that the internal power supplies are operating.

The fault LED is on when the system is in a fault condition.

Using the System

Front Panel Indicators

Fault/Power

The FAULTLED LED indicates that the system is in a fault condition.

The POWER LED indicates that the internal power supplies are operating.



When power is first applied, the unit will begin a countdown from 20 seconds. The display will show the countdown from 20 seconds to 1 second, then the status of the four OP's will be displayed. If the OP powers-up properly, its number will be displayed. If the OP is in a fault condition, its OP number will be "00".

Manual System Access & Tuning

- A. i.Net system will automatically default to the acoustical handbook's preferred curve.
- B. Using a quality sound level meter to check the setting:
 - Set the entire environment to 47.5 dBA as measured four feet above the finished floor. You can make adjustments using the System Manager or hand-held remote.

NOTE: This measurement should be accomplished in the evening or after normal working hours and the ceiling tiles should be 90-95% installed for an accurate reading.

- C. For fine tuning
 - Leave all of the ceiling tiles that have an OP hanging above them exposed so that incremental adjustments can be made with the hand-held remote control prior to closing up the ceiling.

Final Wiring Checklist

BEFORE POWERING UP SYSTEM	
Have you checked all home runs? Have you	<input type="checkbox"/> YES
checked all wiring between floors (risers)?	<input type="checkbox"/> YES
Are you sure all audio commons are properly tied between power zones?	<input type="checkbox"/> YES
Have you made sure all Data and Audio wires are tested?	<input type="checkbox"/> YES



TIP Check data wires by going to the i.Lon® and refreshing OP's after each OP is connected. This will help to eliminate large trouble shooting issues at the end of the job.



TIP Check all speaker wires and speakers for good integrity, simply unplug the 1st speaker wire from the OP and connect an RJ45 to a 8 conductor CAT5e wire on one end and twist wire/pins 1,2,3,4 together and 5,6,7,8 together. This will give you two leads + & -. Attach an OHM meter to the wire with the leads and attach the other end into the first or last speaker in a run of speakers. If all is connected correctly, you will approximate the following correct results on your OHM meter:

i.Net Speaker Test	
# of Speakers	OHMs-K
1	26
2	13
3	8.67
4	6.5
5	5.2
6	4.33
7	3.71
8	3.25

*Values are approx. based on 25' cable run from OP to speaker and speaker to speaker.

*For further technical support, please email support@lencore.com

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