

**DSP2210 &  
DSP2212**



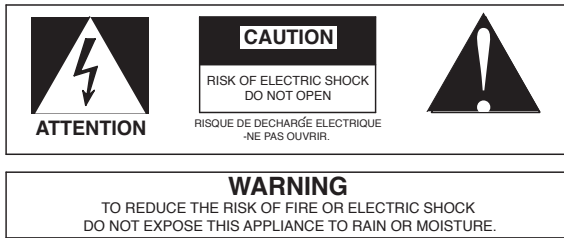
1601 Jack McKay Blvd. • Ennis, Texas 75119 U.S.A.  
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Important Safety Instructions



The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

- 1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this device near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the device.
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 device.
13. Unplug this device during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel.
15. WARNING: To reduce the risk of fire or electric shock, this device should not be exposed to rain or moisture and objects filled with liquids, such as a vase, should not be placed on this device.
16. To completely disconnect this equipment from the mains, disconnect the power supply cord plug from the receptacle.
17. The mains plug of the power supply cord shall remain readily operable.





### CAUTION – When Installing the Product

- Plugging in or unplugging the power cord with wet hands may result in electric shock.
- Never move the device with the power cord plugged into the wall, as damage to the power cord may result.
- When unplugging the cord from the wall, grasp the plug, NOT the cord.
- Never install this device in humid or dusty locations, nor in direct sunlight, near sources of heat, or in areas where sooty smoke or steam are present. Fire and electric shock may result.
- Keep all sides of the device at least 3½" away from objects that may obstruct air flow to prevent the unit's internal temperature rise.



### WARNING – When the Device is in Use

- To prevent electric shock, do not remove the device cover as there are high voltage components inside. Refer all servicing to Atlas Sound.
- Should any of the following irregularities occur during use, immediately switch off the power, disconnect the power cord from the AC outlet and contact Atlas Sound. Do not attempt to continue operation with the device as this may cause fire or electric shock:
  - Smoke or strange smell coming from the unit.
  - If the device falls or the case is damaged.
  - If water or any metallic objects falls into the device.
  - If the power supply cord is damaged in any way.
  - If the device is malfunctioning.
- Do not insert or drop metallic objects or flammable materials into the ventilation holes of the device's cover, as this may result in electric shock or fire.
- Do not place any containers with liquid or metallic objects on the top of the device. If any liquid spills into the unit, fire or electric shock may result.
- Never operate this device or touch the power supply cord during an electrical storm, electric shock may result.
- Never exceed the wattage on the product when connecting equipment. Fire and/or property damage may result.
- Operate the device only with the voltage specified on the unit. Fire and/or electric shock may result if a higher voltage is used.
- Do not modify, kink, or cut the power cord. Do not place the power cord in close proximity to heaters and do not place heavy objects on the power cord, including the device itself, doing so may result in fire or electrical shock.
- Ensure that the safety ground terminal is connected to a proper ground. Never connect the ground to a gas pipe as a catastrophic disaster may result.
- Be sure the installation of the product is stable, avoid slanted surfaces as the product may fall and cause injury or property damage.



### CAUTION – When the Device is in Use

- Never place heavy objects on the product, causing it to fall and/or break, resulting in personal injury and property damage. In addition, the product itself may fall and cause injury and property damage.
- Contact Atlas Sound for instructions on cleaning the inside of the unit. Large accumulations of dust inside the unit may result in heat buildup and fire.
- Ensure that the power supply plug is securely plugged into the wall outlet. Never allow dust to accumulate on the power plug or inside the wall outlet.
- When cleaning the unit or the unit is not to be operated for an extended time period, unplug power cord from the wall.





## Introduction

The Atlas Sound DSP2210/DSP2212 digital processor "Privacy" system is a self contained, compact multi-zone digital DSP-GUI controlled processor and digital amplifier capable of simultaneous distribution of masking, paging, and background music signals for use in Industrial, Institutional, Commercial and Government facilities.

The Atlas Sound DSP2210/DSP2212 is capable of automatic mixing, set up and administration of all inputs/outputs per zone (channel). This is accomplished via an intuitive 'simple to use' Graphic User Interface (GUI) managed via a local laptop or desktop computer that is running Microsoft® Windows®. It provides up to x2 channels of independent on-board digital Class-D amplifiers rated at 25W RMS at 70V. It has a pink noise generator which is random and non-repeating up to (215) hours with EQ adjustments programmable on a per zone basis. The DSP's provide dynamic control and management based on IEEE802.1 AVB standards (Audio-Video Bridging) with independent 1/3 Octave (28) band EQ \*(Filter type is Butterworth @ 19dB and Linkwitz-Riley at 24dB) and Parametric EQ 8-band for calibration of all PA and masking signals on a per zone basis. Paging (PA) levels are adjustable in 0.5dB increments per zone on Line Level (Music) and Microphone paging inputs. The system has the ability to expand up to (32) systems (64 zones) with primary and secondary assignment in a zone paging dialing plan. It also provides the ability to set up "All Zone" and "Group zone" pages through the GUI.

The Atlas Sound DSP2210/DSP2212 system provides the following basic masking capabilities:

- Create An Acceptable Level of Speech Privacy In Open Work Areas
- Enhance Speech Privacy Between Modular Offices
- Decrease Intelligibility and Noise Distraction Caused By Stand-Up, Casual Conversations and Random Room Noises
- Reduce Awareness of Existing Sounds
- Increase Worker Productivity and Employee Satisfaction
- Enhance Clients Revenue Due to Less Employee Distraction
- Lessen The Need For Unexpected and Expensive Acoustical Upgrades
- Flexibility Which Insures Specific Masking Spectrums For Varying Ceiling Types Including; T-Bar, Open, Wood Slats And Clouds

## Basic Function

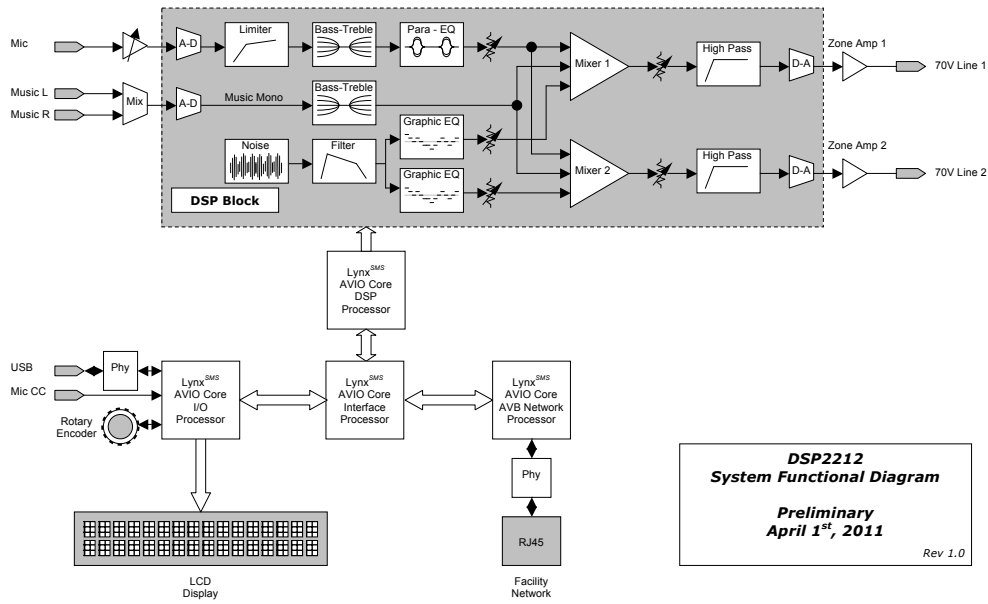
- (2) Channels of random pink noise generator non-repeating up to 215 hours
- (2) Audio outputs of 25WRMS digital Class-D amplification at 85% efficiency
- (2) Independent outputs of 1/3 Octave 28-band EQ defined and shaped in GUI
- IEEE 802.1 AVB (Audio Video Bridging) technology for time aligned networking of multiple units (DSP2212 Only)
- AVB operation allows IP based paging via Ethernet connection (DSP2212 Only)
- Multiple audio source inputs for Background Music and Paging
- Microphone input with system mute
- On-board MAC Address (DSP2212 Only) for IP addressability compatible with DHCP server
- User friendly GUI (Sound Media Interface) for set up
- Zone expansion from 2 to 64 via standard Ethernet LAN (DSP2212 Only)
- All-Call page, Group Zone page and single zone page defined in GUI
- Independent Tone Controls for all paging sources
- Microphone balanced input with on-board Phantom Power at 12VDC
- Non-volatile DSP memory components for all system controls with (10) year memory
- DSP2210/DSP2212 multiple mounting options; Rack, Cabinet, Shelf or wall at 1RU (1.75") height x 10" deep
- Visual status front LCD Display for all major input and output Control functions
- Overload, short and current limit protection with automatic reset for all critical components
- All power components are UL recognized, boards are UL94V0 and RoHS
- DSP2210/DSP2212 is UL/CUL/FCC and CE (International) listed





## SYSTEM OVERVIEW – SIGNAL FLOW DIAGRAM

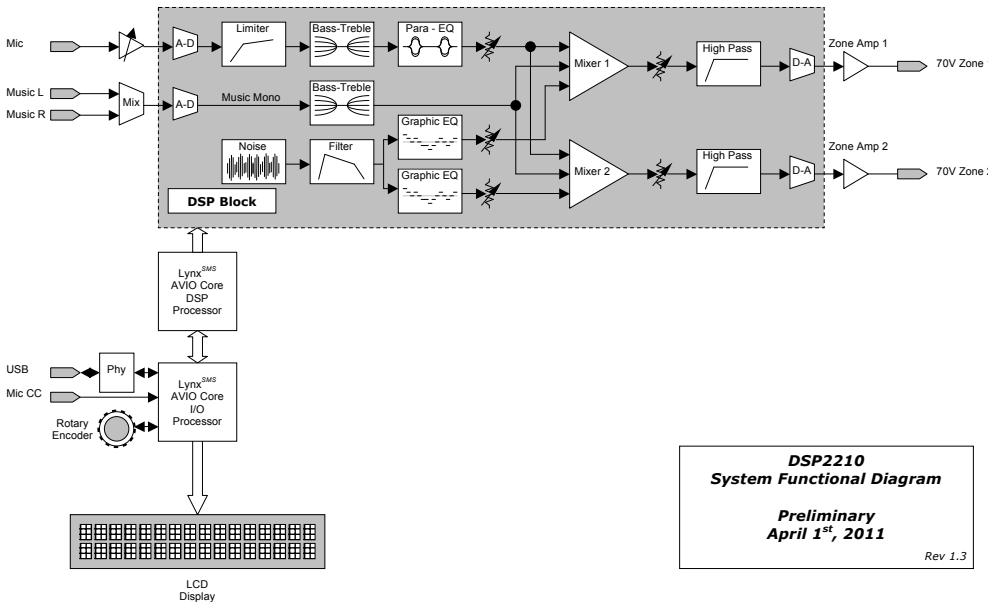
DSP2212 Functional



**DSP2212**  
**System Functional Diagram**  
 Preliminary  
 April 1<sup>st</sup>, 2011  
 Rev 1.0

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DSP2210 Functional



**DSP2210**  
**System Functional Diagram**  
 Preliminary  
 April 1<sup>st</sup>, 2011  
 Rev 1.3

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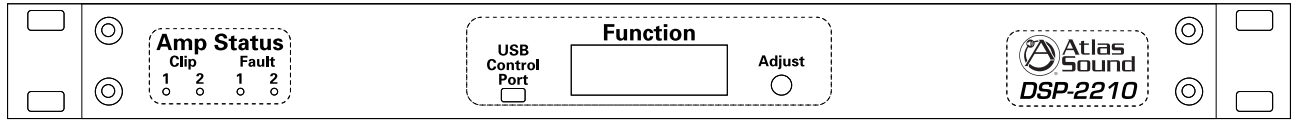


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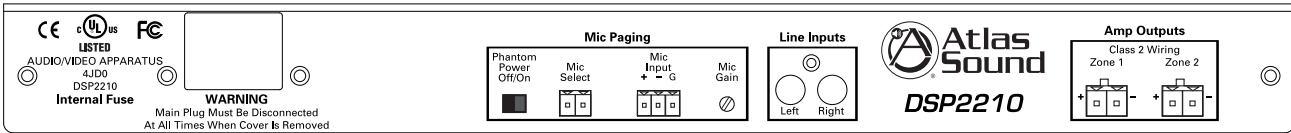


### SYSTEM VIEWS

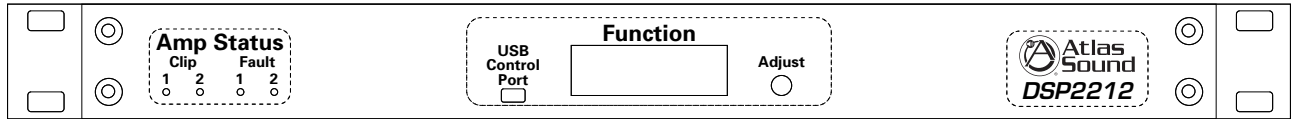
#### DSP2210 FRONT PANEL



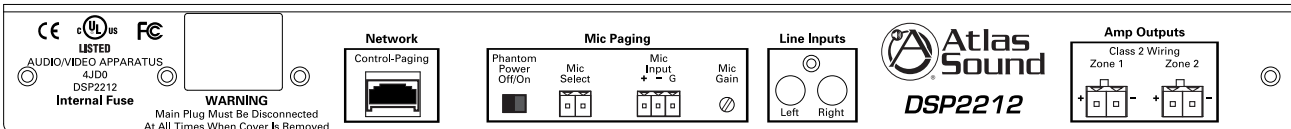
#### DSP2210 REAR PANEL



#### DSP2212 FRONT PANEL



#### DSP2212 REAR PANEL



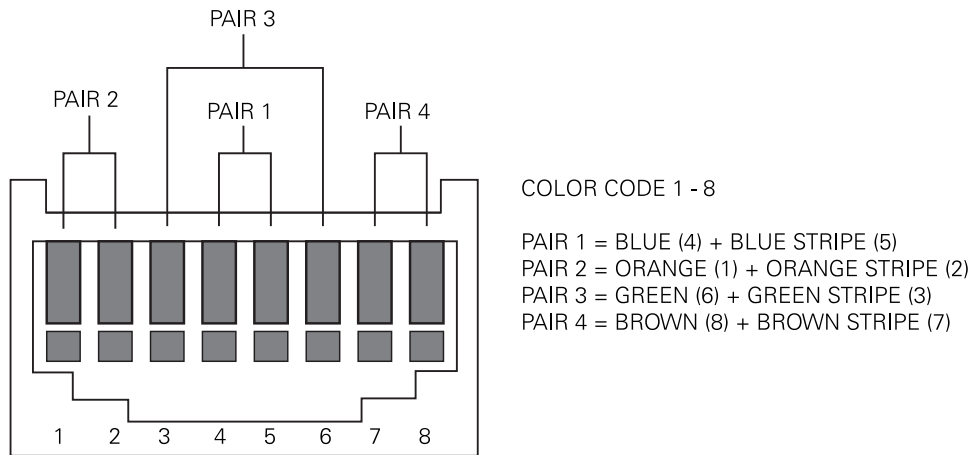
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INSTALLATION

COMPUTER NETWORK TERMINATION (DSP2212 only)

**Important Note:** All network terminations to DSP2210/12 require wiring to meet EIA/TIA568B standard and shall use appropriate agency approved cables; CAT5e / CAT6: UL1661/1685 latest edition, ISO/IEC 11801, NEC 725-800, CSA FT-4



NOTE: All 'RJ45' Network connections must be wired to meet EIA/TIA 568B standard.



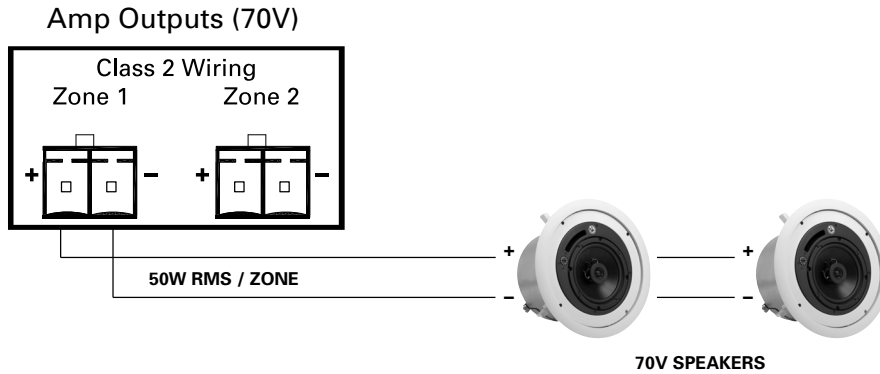
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**70V SPEAKER TERMINATION**

Phoenix connectors are used and are keyed or polarized to fit one way, do not force fit these connectors and follow these basic instructions;

- Do NOT force fit the connectors – they are polarized to fit in one direction
- Follow the +/- wiring polarity for all speakers
- Use only 70V speakers
- Ensure that total speaker wattage taps per channel does NOT EXCEED 80% of the rated output 25W RMS per zone.



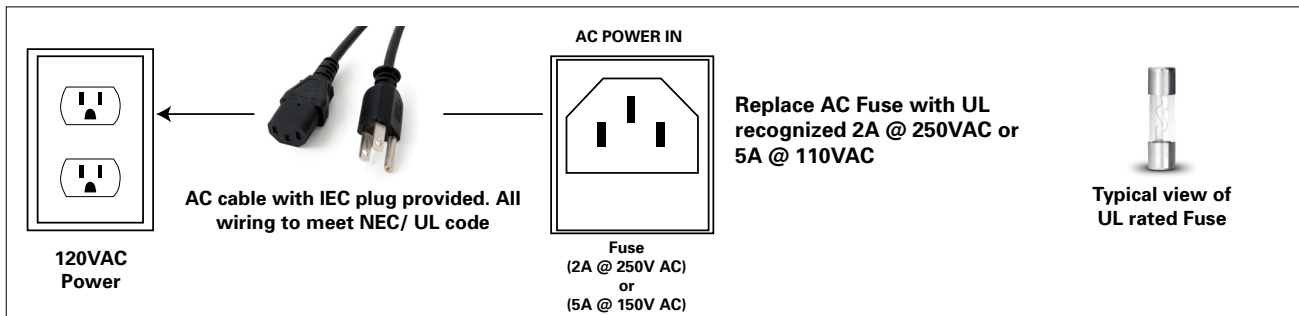
**AC POWER INPUT (120VAC @ 60Hz or 240VAC @ 50Hz)**

As noted in the 'Important Notices', DSP2210/DSP2212 utilize a UL recognized IEC AC power plug and cord (provided with the unit) which must not be changed or defeated. Please follow these important instructions. Failure to do so will void the product warranties.

The Mains Plug is the main disconnect device for the product, and shall be located so as to be readily accessible.

NOTE: Once the AC power is switched 'ON' it will take approximately '30' seconds to initialize and start up.

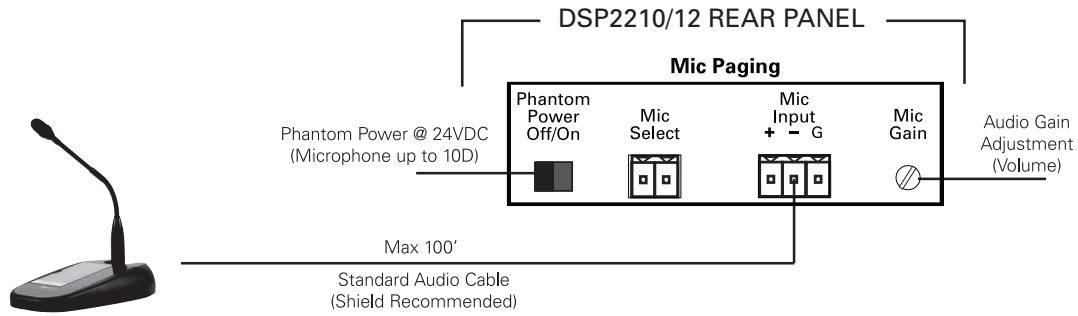
- Do not defeat the safety purpose of polarized, keyed or grounding type connectors. A polarized plug has two (or multiple) contacts with one wider or longer than the other. A grounding type plug has two blades and a third grounding plug. The wide blade or third prongs are provided for your safety. Do not defeat or change these. If the provided IEC power plug does not fit into your outlet, consult an electrician or your local authority having jurisdiction to replace the outlet to insure meeting local building codes while assuring proper connection
- Protect the power cord from being walked on or pinched particularly at the plug, receptacle outlet, and the exit point of the unit





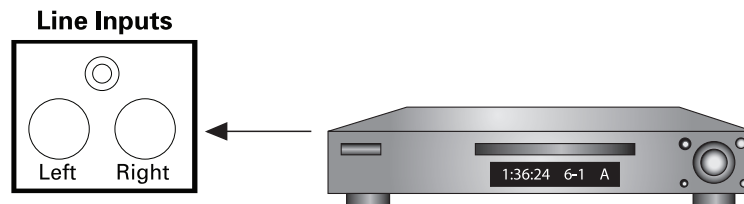


**PAGING MICROPHONE INPUT TERMINATION**



**BACKGROUND MUSIC AND LINE INPUT TERMINATION**

**DSP2210/12 REAR PANEL**



**MOUNTING**

DSP2210/DSP2212 unit is designed to mount into standard EIA cabinets, free standing racks, or consoles using the (x4) front slots.  
 NOTE: Allow a minimum one (1) rack space above and below (at 3.5") between DSP2210/DSP2212 and any other electronic equipment to insure proper thermal ventilation. This unit may also be mounted on a shelf using the pads provided (x4).

**START UP - BOTH DSP2210 AND DSP2212**

Needed equipment:

PC Based Computer running Windows® XP Professional or Higher

SMI Software Application

Ethernet Router with DHCP Server (DSP-2212 only)

**CONNECTING THE USB PORT**

Connect a PC running the Atlas Sound Application Software to the USB Port on the Front Panel

Switch Power to the Unit On

The Unit will take approximately 30 seconds to start up

The LCD Display on the Front Panel will Show "MiniMaskIt" when startup is complete



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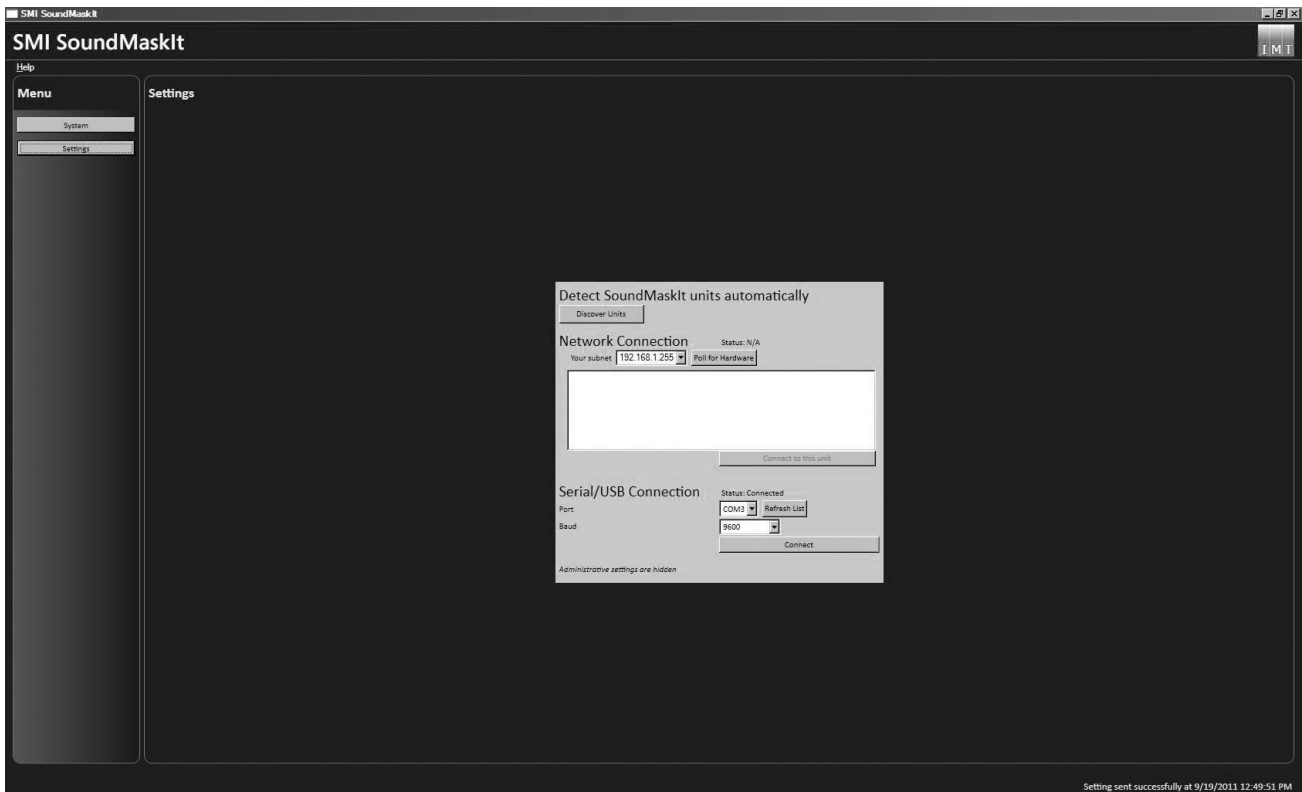
## SYSTEM OVERVIEW – SYSTEM HARDWARE / SOFTWARE REQUIREMENTS

The DSP2210/DSP2212 unit has the following hardware and software computer requirements;

- Microsoft® Windows® Operating system shall be: XP Professional, Windows® Vista, Windows® 7 or better
- 50MB of available hard disk space
- 512MB of RAM of higher
- A network connection with a minimum data transfer rate of 10Mbps or higher (100Mbps is recommended)

## DISCOVER UNITS

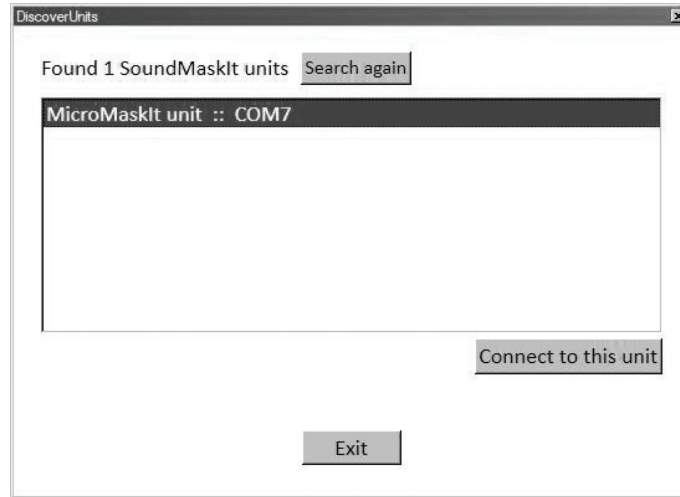
Select the “Settings” screen from the Menu



Click “Discover Units”

The software should find the Unit Under Test (UUT) similar to the following screen





Select the Unit and click the "Connect to this unit" button

The Software should now be able to access and control the unit – eg. Select GEQ 1



As controls are selected, the various functions/settings will appear in the screen below the system functional map for review/adjustment.



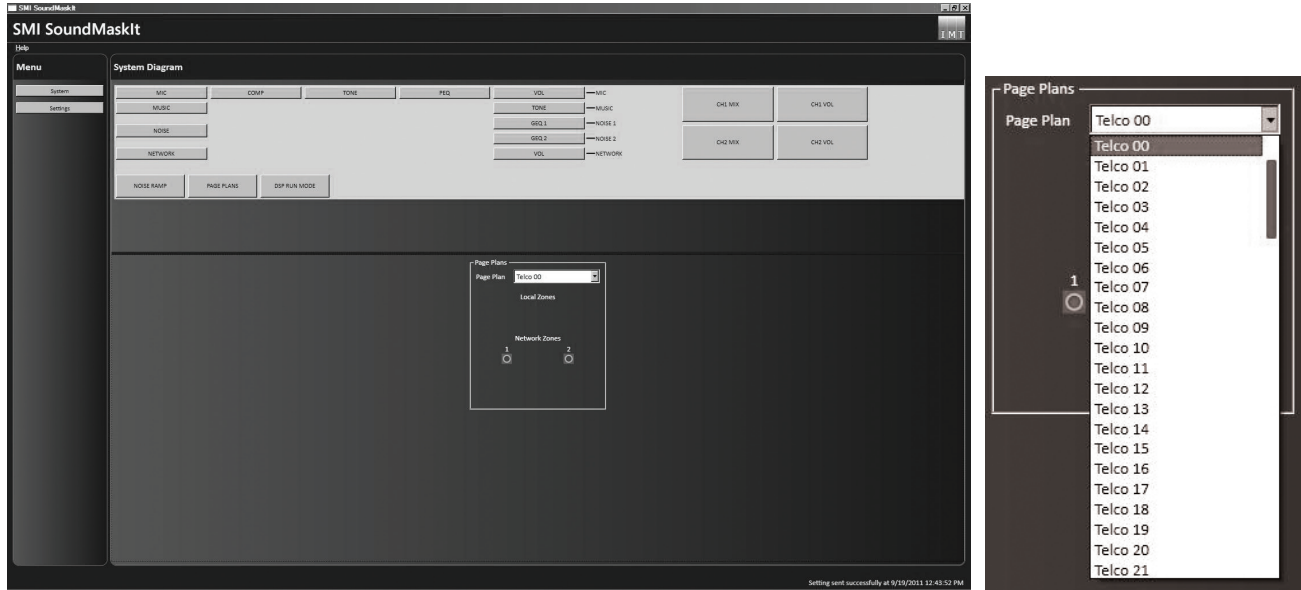
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PAGE PLANS

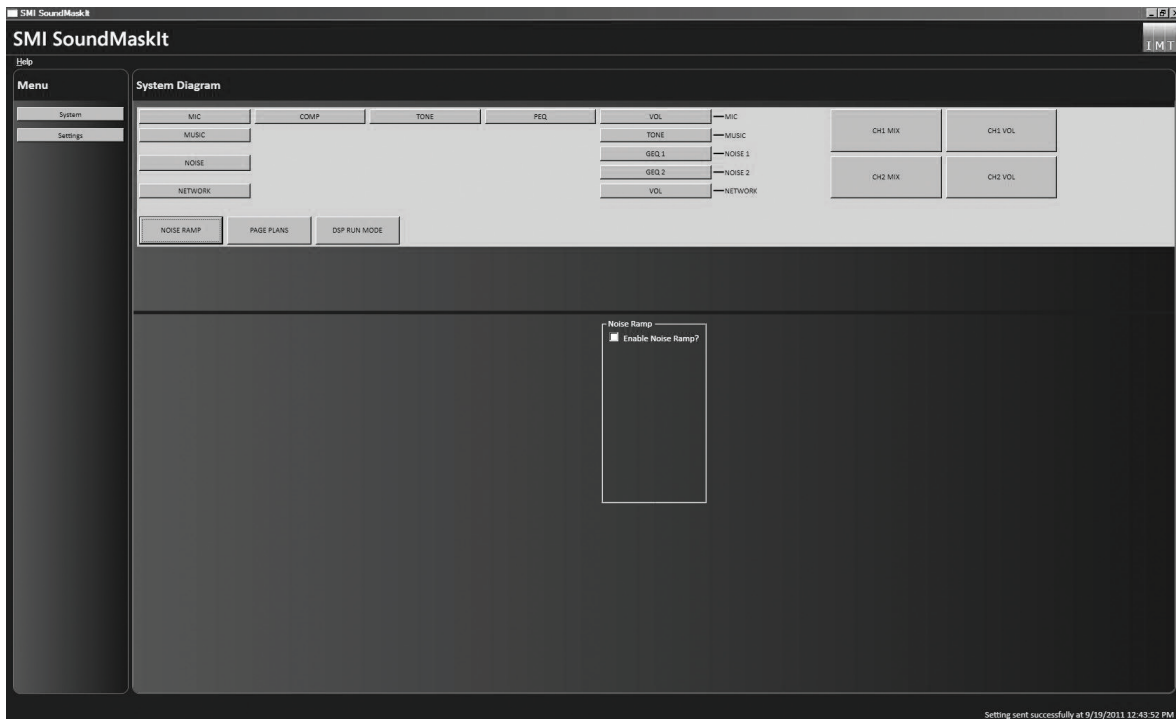
Select Page Plans Button

Turn on the "Zones" to be active during Telco 00 (Mic Input) Page, (and Network Pages – DSP-2212 only)



NOISE RAMP

Select Noise Ramp Button – "On" ramps the noise level 1dB every 10 seconds to its previous level after power up.

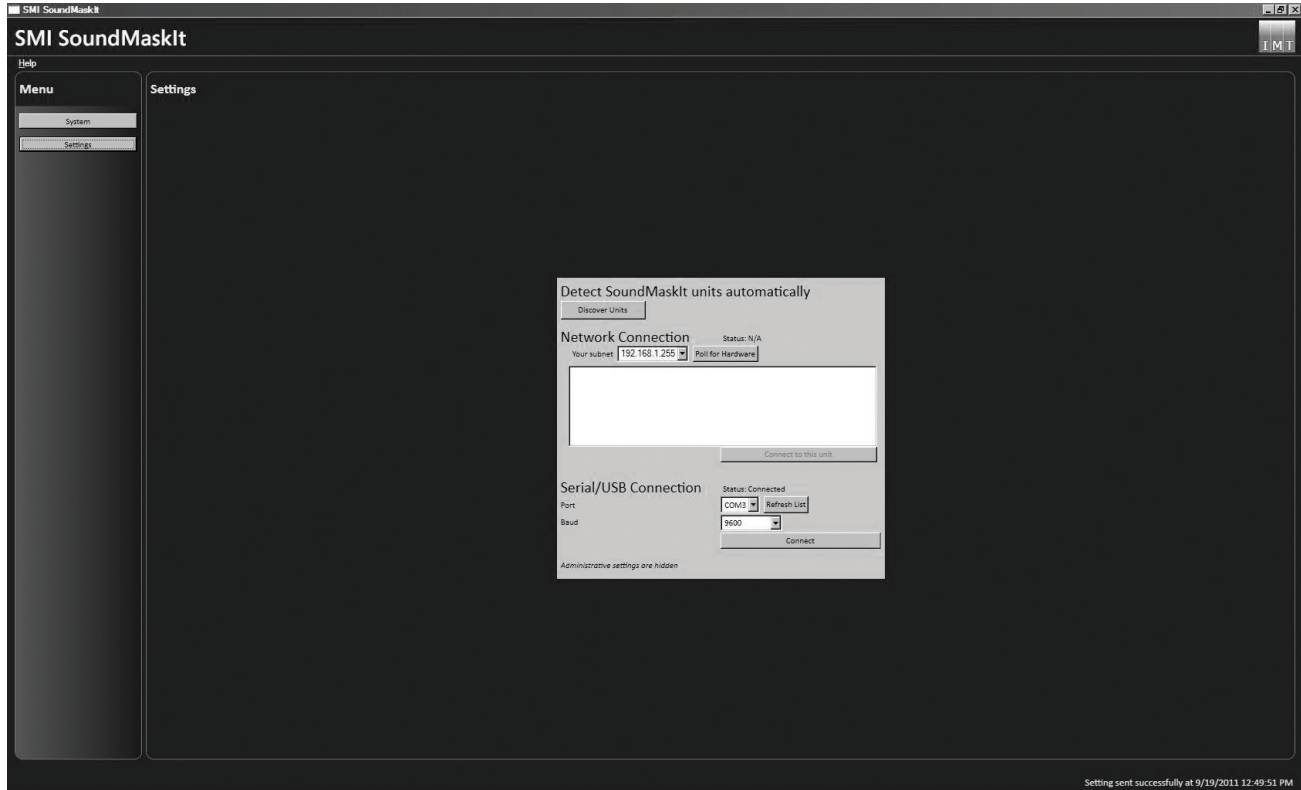




### CONNECTING TO THE LAN (DSP2212 only)

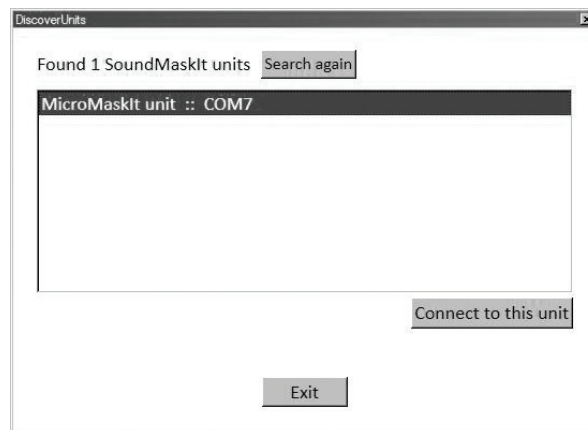
Connect both the Computer running the Application Software and the unit RJ45 ports to the LAN ports on the Ethernet Router with DHCP Server

Select the "Settings" screen from the Menu



Click "Discover Units"

The software should find all available units on the network similar to the following screen



Select the unit you wish to control and click the "Connect to this unit" button

The Software should now be able to access and control the unit



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## SPECIFICATIONS

### SYSTEM PERFORMANCE / DSP PROCESSORS

- Dynamic range >102dB A-weighted
- Frequency response 80Hz – 20kHz  $\pm$  3dB at rated output
- Distortion THD+N .001% typical at +4dBu, 1kHz, 0dB gain
- Input sensitivity 2Vrms Max 20K $\Omega$
- Interchannel crosstalk > 80dB typical
- Crosstalk input to output > 80dB
- Channel separation > 100dB at 1kHz (in thru out)
- Common mode rejection ratio (CMRR) > 50dB, 20Hz – 20kHz typical > 55dB at 1kHz
- Processor capacity Fixed Point, Audio Specific
- Sample rate audio conversion 48kHz
- D/A converter type (Audio) 24-bit Sigma Delta
- D/A performance dynamic range (converter) > 100dB A-weighted
- A/D performance dynamic range > 110dB A-weighted
- Non-volatile memory Memory storage for all programs and set up protected for (24) hours in power brown out, interruption or computer shut down. Data settings good for (10) years w/o refresh
- CODEC – DSP protection All I/O protected with buffers from spikes and transients or sneak currents

### SYSTEM INPUTS (unless noted located on rear panel)

- Power AC Mains IEC 3-pin with ground, 80-240VAC, 50-60HZ
- Network (DSP2212 only) RJ45 module jack (EIA 568B)
- Microphone 3-pin dockable keyed connector
- Background Music RCA connector 10K Ohm (sum to mono)

### SYSTEM OUTPUTS (unless noted located on rear panel)

- Zone Speakers 2-pin dockable keyed connector (70V @ 25W RMS)
- Network system link RJ45 modular jack (EIA 568B) [unit #2 - #32]





### SYSTEM AMPLIFIERS (x2)

- Frequency response 80Hz – 20kHz,  $\pm$  3dB
- Total distortion .001% typical at +4dB, 1kHz, 0dB gain
- Transformer output 70.7V
- Efficiency 85% or better
- Gain control adjustable to 34dB
- Power supply UL / CUL recognized
- Input impedance 50k $\Omega$
- Carrier frequency 400kHz
- Peak current 1.2A
- MTBF (Mean Time Between Failure) 100,000 hours
- EMC / EMI radiation FCC Part 15 Class B, EN6100, CISPR 22

### SYSTEM MECHANICAL DATA

- Dimensions (L x W x H) 10.0" (254mm) x 19.0" (482.6mm) x 1.75" (44.45mm)
- Material (outer housing) CRS (cold roll steel) 18AWG (.047" nominal)
- Finish Flat black powder coat with zinc undercoat corrosion resistant
- Printed circuit boards UL recognized UL94VO
- Electronic components RoHS
- Operating temperature 0° to +50°C
- Storage temperature -40° to + 85°C
- Humidity 95% non-condensing (max.)

### TROUBLESHOOTING GUIDE

1. Read and review all sections and follow instructions in this manual
2. Before terminating speakers to 'Speaker Output (70V)' Zones 1 and 2, verify that all wiring is free from shorts, opens, crosses, ground problems or loose or frayed wiring. Ensure wiring follows the correct polarity ( $\pm$ ) as shown in Section 4.2
3. Ensure AC power is correctly terminated with the IEC power cord provided. If after power is activated and system input and output terminations are verified and no audio is detected, ensure all volume and activation settings have been properly set and applied in the operating GUI / Sound Media Interface per instructions in Section 5.0 Ensure that all speakers are connected to DSP2210/DSP2212.
4. If you continue to experience difficulty please contact Atlas Sound Customer Service department by telephone at 1-800-876-333, online at [www.AtlasSound.com](http://www.AtlasSound.com), or by email at [atlasusser@atlasound.com](mailto:atlasusser@atlasound.com).



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## Limited Warranty

All products manufactured by Atlas Sound are warranted to the original dealer/installer, industrial or commercial purchaser to be free from defects in material and workmanship and to be in compliance with our published specifications, if any. This warranty shall extend from the date of purchase for a period of three years on all Atlas Sound products, including SOUNDOLIER brand, and ATLAS SOUND brand products except as follows: one year on electronics and control systems; one year on replacement parts; and one year on Musician Series stands and related accessories. Additionally, fuses and lamps carry no warranty. Atlas Sound will solely at its discretion, replace at no charge or repair free of charge defective parts or products when the product has been applied and used in accordance with our published operation and installation instructions. We will not be responsible for defects caused by improper storage, misuse (including failure to provide reasonable and necessary maintenance), accident, abnormal atmospheres, water immersion, lightning discharge, or malfunctions when products have been modified or operated in excess of rated power, altered, serviced or installed in other than a workman like manner. The original sales invoice should be retained as evidence of purchase under the terms of this warranty. All warranty returns must comply with our returns policy set forth below. When products returned to Atlas Sound do not qualify for repair or replacement under our warranty, repairs may be performed at prevailing costs for material and labor unless there is included with the returned product(s) a written request for an estimate of repair costs before any nonwarranty work is performed. In the event of replacement or upon completion of repairs, return shipment will be made with the transportation charges collect.

EXCEPT TO THE EXTENT THAT APPLICABLE LAW PREVENTS THE LIMITATION OF CONSEQUENTIAL DAMAGES FOR PERSONAL INJURY, ATLAS SOUND SHALL NOT BE LIABLE IN TORT OR CONTRACT FOR ANY DIRECT, CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE ARISING OUT OF THE INSTALLATION, USE OR INABILITY TO USE THE PRODUCTS. THE ABOVE WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Atlas Sound does not assume, or does it authorize any other person to assume or extend on its behalf, any other warranty, obligation, or liability. This warranty gives you specific legal rights and you may have other rights which vary from state to state.



Should your DSP2210/DSP2212 require service, please contact the Atlas Sound warranty department at 1-608-325-8717, to obtain an RA number.

Atlas Sound Tech Support can be reached at 1-800-876-3333.

Visit our website at [www.AtlasSound.com](http://www.AtlasSound.com) to see other Atlas products.

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