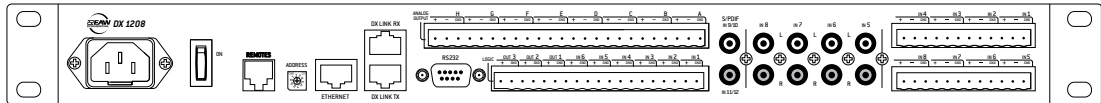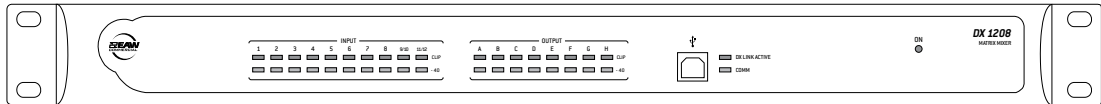# DX1208

12x8 Digital Matrix Mixer and Signal Processor

# 1. IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.

2. Keep these instructions.

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.

**PORTABLE CART WARNING**

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. 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.

15. Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

16. This apparatus has been designed with Class-I construction and must be connected to a mains socket outlet with a protective earthing connection (the third grounding prong).

17. This apparatus has been equipped with a rocker-style AC mains power switch. This switch is located on the rear panel and should remain readily accessible to the user.

18. The mains plug or an appliance coupler is used as the disconnect device, so the disconnect device shall remain readily operable.

19. NOTE: This equipment has been tested and found to comply with the limits for a Class A, digital device, pursuant to Part 15 of the FCC Rules, and the rules for Canada under ICES-003 - Feb 04. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

CAUTION: Changes or modifications to this device not expressly approved by LOUD Technologies Inc. could void the user's authority to operate the equipment under FCC rules.

> *WARNING! This equipment has been designed to be installed by qualified professionals only! There are many factors to be considered when installing professional sound reinforcement systems, including mechanical and electrical considerations, as well as acoustic coverage and performance. EAW Commercial strongly recommends that this equipment be installed only by a professional sound installer or contractor.*

---

## CAUTION   *AVIS*

**RISK OF ELECTRIC SHOCK • DO NOT OPEN**
*RISQUE DE CHOC ELECTRIQUE*
*NE PAS OUVRIR*

**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK**
**DO NOT REMOVE COVER (OR BACK)**
**NO USER-SERVICEABLE PARTS INSIDE**
**REFER SERVICING TO QUALIFIED PERSONNEL**

*ATTENTION: POUR EVITER LES RISQUES DE CHOC*
*ELECTRIQUE, NE PAS ENLEVER LE COUVERCLE. AUCUN*
*ENTRETIEN DE PIECES INTERIEURES PAR L'USAGER. CONFIER*
*L'ENTRETIEN AU PERSONNEL QUALIFIE.*
*AVIS: POUR EVITER LES RISQUES D'INCENDIE OU*
*D'ELECTROCUTION, N'EXPOSEZ PAS CET ARTICLE*
*A LA PLUIE OU A L'HUMIDITE*

**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.**
*Le symbole éclair avec point de flèche à l'intérieur d'un triangle équilatéral est utilisé pour alerter l'utilisateur de la présence à l'intérieur du coffret de "voltage dangereux" non isolé d'ampleur suffisante pour constituer un risque d'éléctrocution.*

**The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.**
*Le point d'exclamation à l'intérieur d'un triangle équilatéral est employé pour alerter les utilisateurs de la présence d'instructions importantes pour le fonction-nement et l'entretien (service) dans le livret d'instruction accompagnant l'appareil.*

**WARNING** — To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

**CAUTION** — Internal lithium battery. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

---

Correct disposal of this product. This symbol indicates that this product should not be disposed of with your household waste, according to the WEEE Directive (2002/96/EC) and your national law. This product should be handed over to an authorized collection site for recycling waste electrical and electronic equipment (EEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority, or your household waste disposal service.

# Table of Contents

# 2. INTRODUCTION

The DX1208 is a 12-input, 8-output DSP matrix mixer designed for use in a variety of commercial and installed sound applications such as churches, courtrooms, convention centers, and hotels. Eight inputs are mic/line capable, with selectable 48-volt phantom power provided for each input. These 8 inputs and the 8 outputs are accessed using Euroblock detachable connectors. Four additional inputs on unbalanced RCA connectors allow the user to "stack" inputs (inputs 5-8), increasing the number of audio sources that can be connected. An additional four digital inputs are available on S/PDIF connectors with sample rate conversion to 48 kHz. All 12 inputs are included in the audio matrix and can be assigned DSP functions prior to distributing signal at line level.

The DX1208 can also receive up to 6 logic inputs and send up to 3 logic outputs, programmable via the included DX Navigator control software. Control of the DX1208 via third party systems (i.e., AMX and Crestron) is easily attained with an RS-232C serial connection (DB9) on the rear panel. Two RJ-45 connections are provided as well for linking multiple (up to eight) DX Link enabled products together in a ring network topology.

A remote control port (RJ-25 connector) is included on the rear panel, facilitating the connection of two different types of remotes (UR-1 and UR-2), all mounted on wall panels. Up to 10 remotes can be attached to the DX1208 (more when external power is supplied), and each is individually addressable and configurable.

The DX1208 is supplied with DX Navigator control software that allows access to all of the system's settings and configurations using a personal computer (PC). The expected range of user-adjustable processing, such as EQ filters, gates, compressors, limiters, AGC, ducking and priority assignment, delay, gain, and crossovers are included. The Automix feature employs a gain sharing automixer, to keep the overall system gain constant. In addition, up to 24 programmable presets are available per DX1208, which can be used to store and recall frequently used settings. The programming interface is flexible, with connection via the USB port on the front panel, or the Ethernet jack or DB9 connector on the rear panel.

The DX1208 is UL and CE approved. It is designed for continuous use in professional fixed installation systems and employs a universal power supply (100-240 VAC, 50/60 Hz).

## KEY FEATURES

- 32-bit DSP and 24-bit Analog/Digital Conversion

- 8 balanced Mic/Line inputs on Euroblock connectors

- Individually selectable 48V phantom power on Mic/Line inputs 1-8

- 4 additional unbalanced line inputs stacked to inputs 5-8 on RCA connectors

- Inputs 9/10 and 11/12 on S/PDIF connectors for digital inputs

- Gate, compressor/AGC, and six band EQ on each input

- Mute and solo button on each input

- 8 balanced line-level outputs on Euroblock connectors

- Limiter, eight band EQ plus two crossover filters, and delay on each output

- 6 logic inputs and 3 logic outputs

- DX Link enables small installation networks, providing an additional 16 inputs (IDX) and 16 outputs (ODX)

- Automix feature maximizes acoustic gain without feedback

- Adjustable ducking with 5 priority levels assignable to each input (inputs 1-12 and IDX inputs 1-16)

- 1 remote control port for connection and control of up to 10 remotes

- 1 USB port on the front panel for control and programming with a PC

- Rear panel DB9 connector for RS-232C communications with third party devices (AMX, Crestron)

- Rear panel Ethernet connection can also be used for control and programming

- Comprehensive graphical user interface using DX Navigator software

## UNPACKING

### Contents

| Qty | Item |
|-----|------|
| 1 | Detachable Line Cord 115 VAC |
| 1 | Detachable Line Cord 230 VAC |
| 16 | 3-position Euroblock connectors for audio I/O |
| 9 | 2-position Euroblock connectors for logic I/O |
| 2 | Rack Ears (installed on product) |
| 1 | CD-ROM containing DX Navigator installer (Windows) |
| 1 | Instruction Manual (this document) |

# FRONT PANEL FEATURES

The front panel consists mostly of indicators showing the status of the DX1208, with the exception of the USB connector for easy programming access with a PC.

## 1. INPUT LEVEL INDICATORS

Each input channel has a pair of level indicators. The green LED indicates the presence of a signal above –40 dBFS. The red LED indicates when the signal is above –2 dBFS and is close to clipping.

## 2. OUTPUT LEVEL INDICATORS

Each output channel has a pair of level indicators. The green LED indicates the presence of a signal above –40 dBFS. The red LED indicates when the signal is above –2 dBFS and is close to clipping.

## 3. USB CONNECTOR

Use this standard USB connector to connect the DX1208 to a PC with DX Navigator installed.

## 4. DX LINK ACTIVE

This red LED lights continuously to indicate when a DX Link enabled device is connected to the DX LINK RX connector on the rear panel and is communicating correctly.

## 5. COMM

This green LED lights to indicate communication activity via the USB, RS-232, Ethernet, Remotes, or Logic Input connections.

## 6. ON

This green LED lights when the power switch is turned on and the DX1208 is connected to an AC mains with sufficient voltage for operation.

# REAR PANEL FEATURES

## 7. IEC AC SOCKET

The DX1208 has a universal power supply, allowing it to operate from any AC mains supply from 100 to 240 VAC, 50-60 Hz. The DX1208 comes with two IEC power cables, one for 120 V operation and one for 220 V operation. Select the power cable appropriate for your local AC power and connect it to the IEC AC socket.

## 8. ON SWITCH

Use the ON switch to turn the DX1208 on and off.

## 9. REMOTES

This RJ-25 connector is used to connect to one or more optional remote controls. Up to 10 UR-family remotes may be connected in a daisy-chain to this remote control port (more when external power is supplied). See "Connecting the REMOTES" on page 9 for more information on using the remote controls.

## 10. ADDRESS

Currently disabled, this multi-position rotary switch will be implemented in future software updates.

## 11. ETHERNET

This RJ-45 connector allows the DX1208 to be controlled and programmed by a PC with a 10/100 Base-T Ethernet connection.

## 12. DX LINK RX/TX

These RJ-45 connectors are used to connect multiple DX Link enabled devices together. The DX LINK RX connector receives audio from devices that are located upstream in the audio path, and the DX LINK TX connector transmits audio to devices that are located downstream in the audio path. See "Connecting the DX LINK RX/TX" on page 9 for more information on using the DX Link connections.
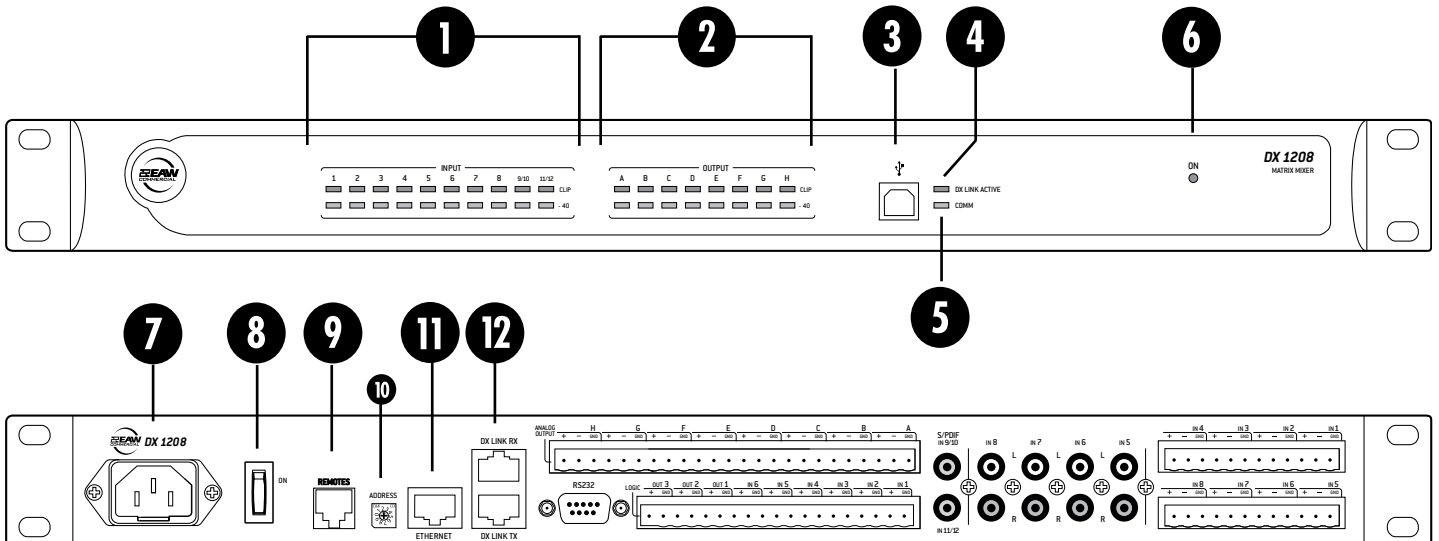
### 13. RS232

This is an RS-232C port on a 9-pin (DB9) connector. It connects to a personal computer or other compatible control system for external control of the DX1208 settings. This may be used instead of the USB port or the Ethernet connection for programming the DX1208.

### 14. ANALOG OUTPUTS A-H

Eight balanced line-level outputs are provided on these Euroblock connectors, labeled A-H.

### 15. ANALOG INPUTS 1-8

Connect eight balanced mic or line-level inputs to these Euroblock connectors. The input gain is adjusted in the DX Navigator software application to accommodate a mic or line-level signal. 48V phantom power can also be applied to a microphone input by activating it in the DX Navigator DX1208 user-interface.

### 16. ANALOG INPUTS 5-8

These RCA connectors accept unbalanced line-level inputs (–10 dBV) to accommodate consumer sources such as CD or MP3 players. The left and right inputs for each channel are summed to mono internally. It is possible to have a signal connected to both balanced (Euroblock) and unbalanced (RCA) connectors for inputs 5-8. The signals are summed together in the analog domain, just prior to A/D conversion.

### 17. S/PDIF IN 9/10 and 11/12

These RCA connectors are used to connect S/PDIF digital inputs to the DX1208. The sample rate is automatically detected and converted to 48 kHz for internal processing.

### 18. LOGIC I/O

The DX1208 provides six logic inputs and three logic outputs on Euroblock connectors. The inputs can be used to control a variety of DX1208 functions via external switching, such as preset recall or channel muting. The outputs can be used to provide logic for external indicators and switches to indicate a range of internal settings and conditions.

Each logic input and output is comprised of two pins, the active pin and ground. See "Connecting the Logic I/O" on page 8 for suggested logic input and output wiring examples.

# 3. HARDWARE INSTALLATION

The DX1208 ships with rack ears installed, which allows the unit to be mounted in a standard 19" rack, requiring one rack unit (1.75"). When mounting in a rack, use plastic washers to protect the rack ears from the mounting screws.

**Note:** Since the DX1208 is convection cooled with ventilation slots on the sides and top, please allow one rack space above the DX1208 to allow proper ventilation.

If you do not rack mount the DX1208, you may remove the rack ears if desired.
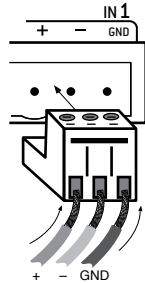
## CONNECTIONS

### Connecting Balanced Sources

Use high-quality three-conductor cable for balanced input connections. The better the shield, the better the audio signal is protected from induced EMI and RFI.

**Note:** With screw-down Euroblock connectors, it's best to use stranded wire that is not tinned. Solder can "flow" under the pressure of the screw-down terminal and cause the connection to become loose.
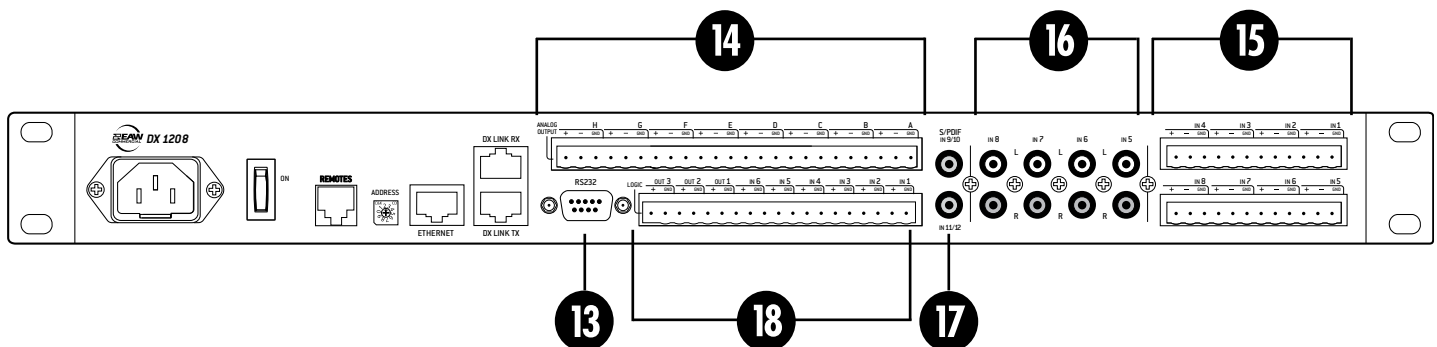
### To connect a balanced mic or line-level signal:

Strip the wire back about 1/4" inch. Insert the wire as far as it will go into the appropriate hole in the supplied Euroblock connector. Tighten down the screw with a small slot-head screwdriver. It is recommended that you use 20 or 22 gauge wire with the Euroblock connectors. Wire the connectors as indicated on the rear panel:
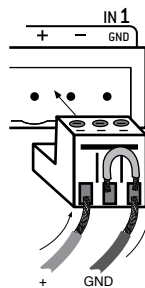


*Balanced input connection (Euroblock)*

## Connecting Unbalanced Sources

It may be necessary to connect a 2-conductor unbalanced input to a balanced input on the DX1208.

### To connect an unbalanced line-level signal to a balanced input:

Follow the instructions for connecting a balanced line-level signal above, but wire the connector as follows:



*Unbalanced input connection (Euroblock)*

### To connect an unbalanced line-level signal to Inputs 5-8:

Inputs 5-8 have unbalanced RCA input connectors as well as balanced Euroblock connectors. This makes it easy to connect input sources such as a CD player, MP3 player, or the audio from a satellite TV receiver.



From Analog
Audio Source
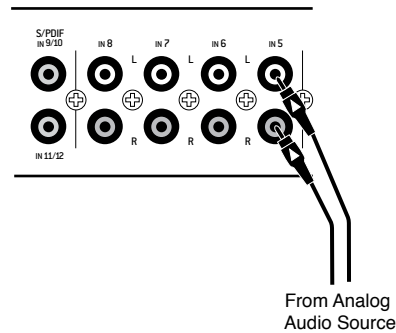
*Unbalanced input connection (RCA)*

These inputs accept a stereo source, but the left and right signals are combined into a mono signal before any processing takes place. If there is a balanced signal connected to the Euroblock connector for Inputs 5-8, the RCA and Euroblock input signals are combined as well.

## Connecting Digital Sources

The DX1208 provides two S/PDIF input connectors for digital audio sources. Each S/PDIF input connector accepts two channels of digital audio, for a total of four digital inputs (9/10 and 11/12).



From Digital
Audio Sources
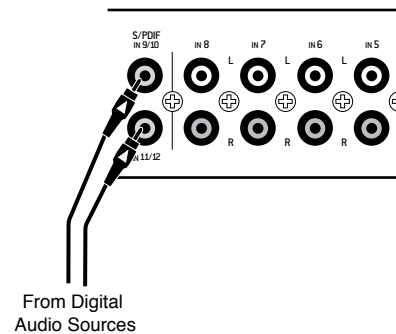
*S/PDIF digital input connection*

## Connecting the Balanced Outputs

As with the balanced input connectors, use high-quality three-conductor cable for balanced output connections.

### To connect to a balanced line-level output:

Strip the wire back about 1/4" inch. Insert the wire as far as it will go into the appropriate hole in the supplied Euroblock connector. Tighten down the screw with a small slot-head screwdriver. It is recommended that you use 20 or 22 gauge wire with the Euroblock connectors. Wire the connectors as indicated on the rear panel:
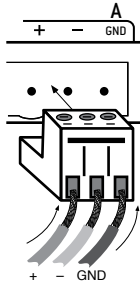


*Balanced output connection (Euroblock)*

## Connecting the LOGIC I/O

There are six programmable logic inputs and three programmable logic outputs. Each logic input and output requires two connections, the active wire and ground.

### To connect to a logic input or output:

Strip the wire back about 1/4" inch. Insert the wire as far as it will go into the appropriate hole in the supplied Euroblock connector. Tighten down the screw with a small slot-head screwdriver. It is recommended that you use 20 or 22 gauge wire with the Euroblock connectors. Wire the connectors as indicated on the rear panel:
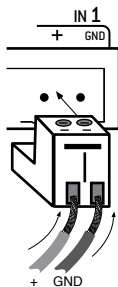


*LOGIC I/O connection*

The logic inputs have internal pull-up resistors connected to +3.3 VDC. Use a normally open switch connected between the logic input and ground. When the switch is open, the logic input is high (+3.3 VDC), and when the switch is closed, the logic input is low (ground). The active state of the logic input is normally low, but can be changed in the Logic I/O screen in DX

Navigator, along with the action (momentary or latching), and the function that is affected by the logic input.
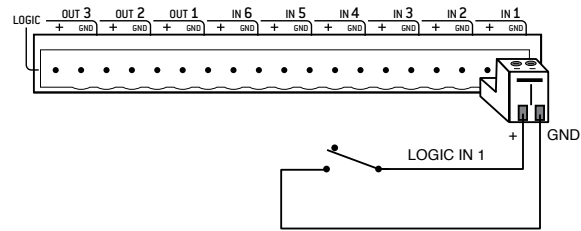


*LOGIC IN wiring example*

The logic outputs are open-collector outputs with internal pull-up resistors. Connect the indicator or activation circuit between the logic output and ground. The logic outputs are normally active high (+5 VDC) and can supply up to 10 mA of current each. The active state can be changed in the Logic I/O screen in DX Navigator, along with the function that generates the logic output.
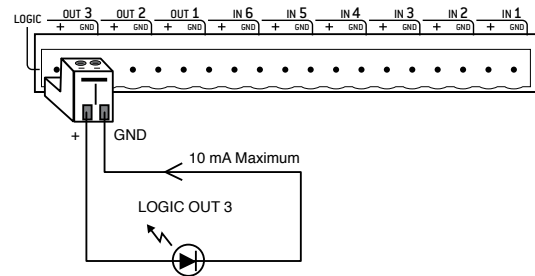


*LOGIC OUT wiring example*

## Connecting a PC or Controller

The DX1208 can be controlled and programmed via the USB port, the Ethernet port, or the RS-232 port.

The most common way to connect to the DX1208 is over the USB port, which is why it is located on the front panel—to provide easy access, especially when the unit is rack mounted.

Simply connect the USB port on the DX1208 to the USB port on a personal computer with DX Navigator installed.
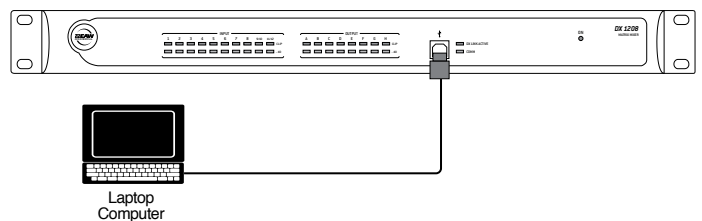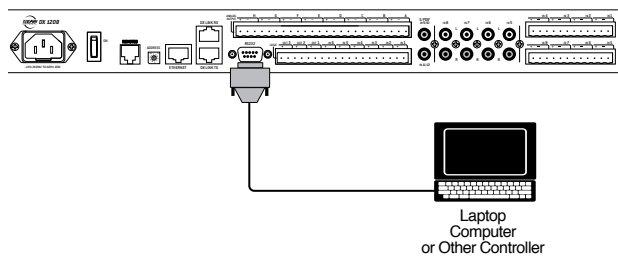


*USB connection*

The DX1208 can also be connected to a PC via the Ethernet port, provided the PC has an Ethernet port as well. Use a Cat5 or Cat5e Ethernet cable with RJ-45 connectors.

**Note:** Use a Cat5 or Cat5e crossover cable when connecting the DX1208 directly to a PC. If you are connecting through an Ethernet switch, use a straight-through cable.
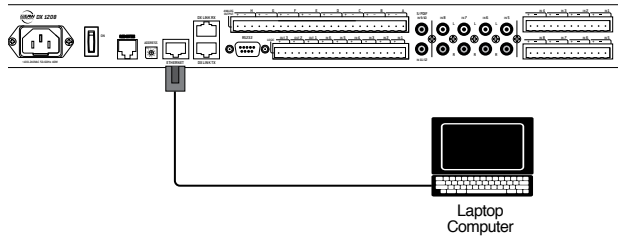


*Ethernet connection*

An RS-232C serial port is also available for connecting a PC or other controller. This is a DB9 female connector on the DX1208 rear panel and requires a cable with a DB9 male connector on the DX1208 end. The DX1208 is configured as a device or Data Communications Equipment (DCE), which is to be connected to a controller or Data Terminal Equipment (DTE) and be controlled.



*RS232 connection*

A separate document is available that provides information on port settings and control protocol for the RS-232 connection. Visit www.eaw.com for more information.
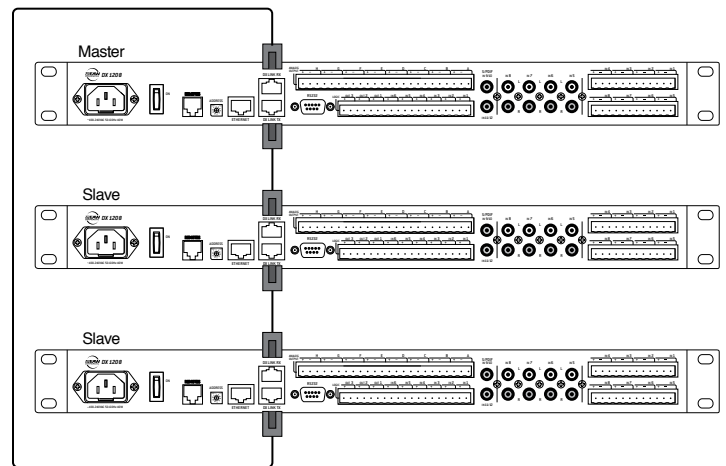
## Connecting the DX LINK RX/TX

These two RJ-45 connectors are provided to connect DX Link enabled devices together and transfer audio among the devices. Up to 16 channels of audio can be transmitted over the DX link ring network using shielded CAT5 cable, and up to 8 DX Link devices can be connected together.

When two or more DX1208s are connected together using DX Link, one must be configured as a Master and the rest as Slaves. This is done in the Settings window of DX Navigator, and the audio is managed in the DXLink window.

**Note:** Although the DX Link uses Cat5 or Cat5e network cable, this is not "audio over Ethernet" and cannot use standard network hardware such as switches or repeaters.

Connect the TX connector on the master device to the RX connector on the first slave device. Then connect the TX on the slave to the RX on the next slave, and so on. Connect the TX on the last slave back to the RX on the master to complete the connection.



*DX LINK connection*

## Connecting the REMOTES

An RJ-25 connector on the rear panel is used to connect the optional remote control peripherals. You can connect up to 10 remotes on the remote bus. More remotes can be connected to the remote bus, provided that external power is supplied to the additional remotes. Refer to the documentation provided with the remote control units for more information.

There are currently two types of remote controls available for the DX1208. Each remote has two RJ-25 connectors, one for connecting the remote bus from the previous device and the other for connecting to the next device. Each remote also has an eight position DIP-switch for assigning its unique address.

### UR-1

The UR-1 has a rotary encoder and a function button to fit a single-gang decora plate, and mounts in a single-gang electrical box.



*UR-1*

The encoder is used to increase or decrease the volume of an input or output. A ring of 15 LEDs surrounding the encoder indicates the relative audio level. The function button can be programmed for a number of actions, such as "Mute an Input" or "Recall a Priority." When the function is activated, the LED in the button lights. Programming is done in the Remotes window of DX Navigator.

### UR-2

The UR-2 has four function buttons to fit a single-gang decora plate, and mounts in a single-gang electrical box. Each button can be programmed to perform a different action. When a function is activated, the LED in the button lights. Programming is done in the Remotes window of DX Navigator.



*UR-2*

## AC POWER CONSIDERATIONS

The DX1208 has a built-in universal power supply and can accept an AC voltage ranging from 100 V to 240 V. Each DX1208 draws an average of 0.5 amps of AC line current at 120 VAC.

**Warning:** Always use a 3-conductor AC power cord with a safety ground connection. Never remove the ground pin or attempt to bypass it. This is very dangerous.

# 4. SOFTWARE INSTALLATION

The DX Navigator software application is provided on a CD-ROM, which can be installed on a PC. It provides a graphical user interface (GUI) for controlling the digital signal processing (DSP) for multiple DX Series products, including the DX1208.

Check our website at www.eaw.com for software upgrades as they become available.

## COMPUTER REQUIREMENTS

DX Navigator requires an IBM compatible PC with the Windows XP SP2 and above or Windows Vista operating system. It is not designed to work with previous versions of Windows or Macintosh operating systems.

## INSTALLING THE DRIVERS AND DX NAVIGATOR

During the installation process, USB drivers are installed on your computer's hard drive. USB drivers are necessary for the computer to communicate with the DX1208 over the USB port. This software installation is a two-step process and requires running the New Hardware Wizard twice.

*To install the software on a PC:*

1. Make sure no other applications are running.

2. Insert the DX1208 CD into your PC's CD drive, or download the software from www.eaw.com.

3. Click "Start > Run > Browse" and navigate to the CD drive or the location on your hard drive where the file was downloaded.

4. Double-click "DXNavigator_v1_xxx.exe (where xxx is the revision level of the installation).

5. Click "OK" in the Run window.

6. The DX Navigator Setup Wizard will begin installing the software on your computer's hard drive.

   **Note:** The following screenshots were taken on a computer running Windows Vista. If you are using an earlier version of Windows, the screens may appear slightly different.
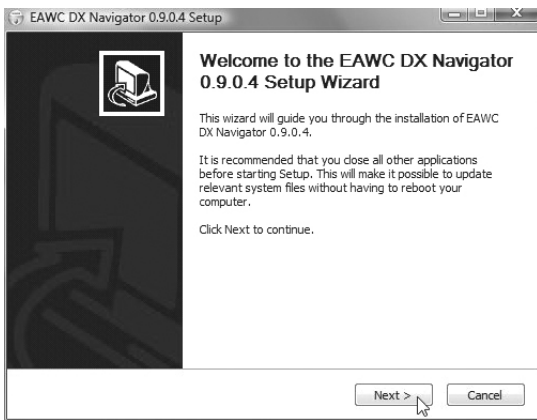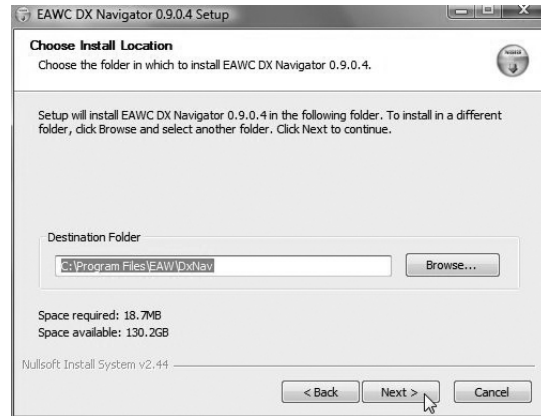


7. Click "Next" and read the License Agreement. Click "I Agree" to continue.
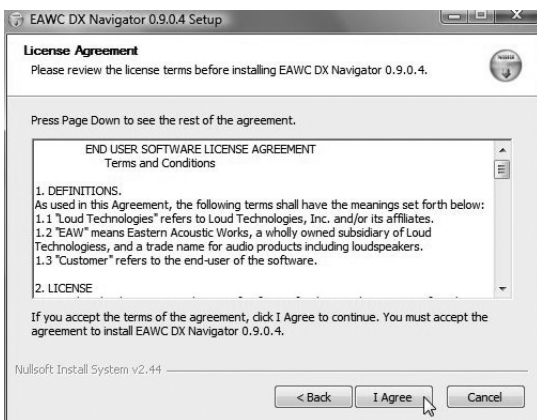


8. A warning about removing previous versions of DX Navigator appears. Click "Next" to continue.
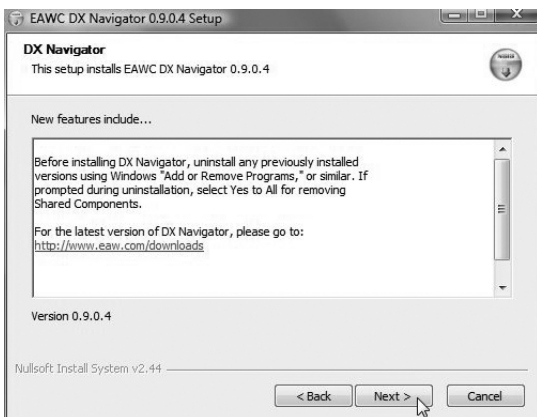


9. You can accept the default directory, or specify a different location to install the application. Click "Next" to continue.



10. Wait a few moments while DX Navigator is installed on the computer. The following window will appear when the installation is complete. Leave the "Run DX Navigator" tick box checked. Click "Finish" to complete the installation of DX Navigator.
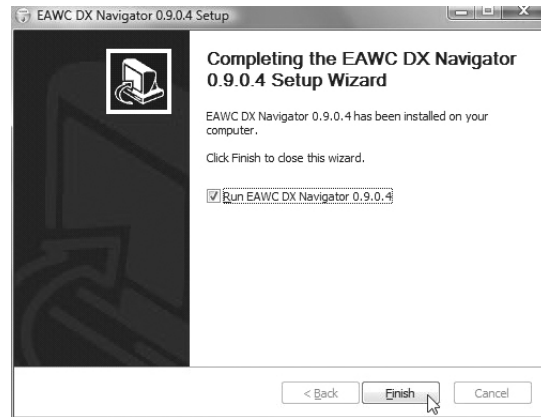


11. When DX Navigator opens, the following dialog box appears, informing you where the drivers are located on the hard drive (Program Files\EAW\Data\FTDI). Click "OK" to continue.
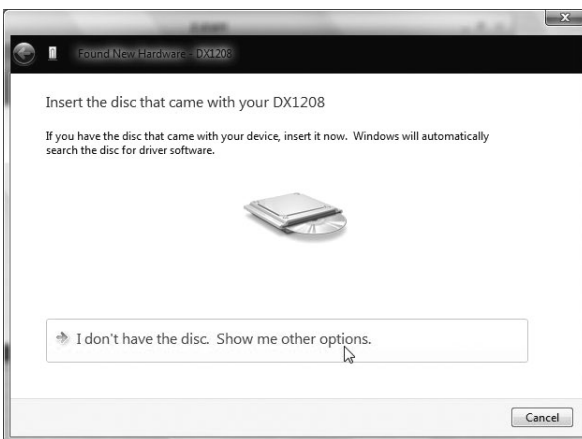
12. Connect the DX1208 USB port to a USB port on your computer using a standard USB cable. Turn on the DX1208 and the New Hardware Wizard will start.
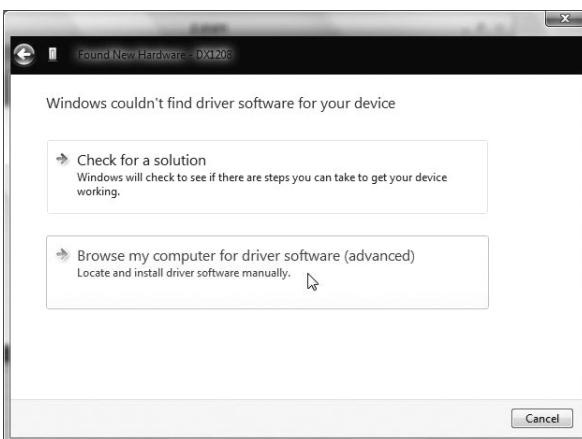


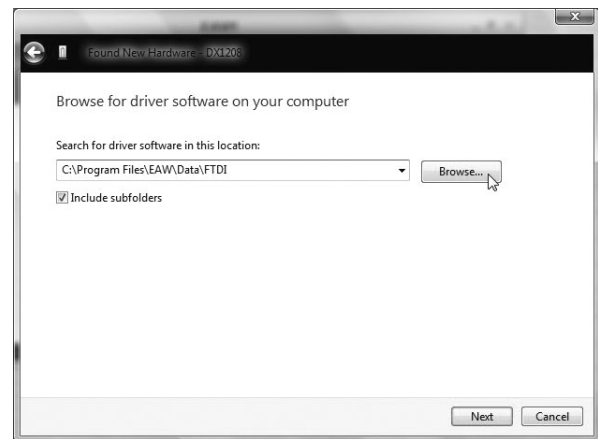Select "Locate and install driver software (recommended)."

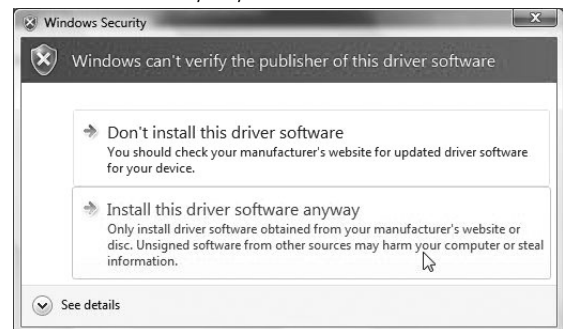13. Select "I don't have the disc. Show me other options."



14. Select "Browse my computer for driver software (advanced)."



15. Click the "Browse" button and navigate to C:\Program Files\EAW\Data\FTDI\DX1208 (or other location if you chose to install the drivers somewhere else). Click "Next" to continue.



16. The installer will begin installing the driver software. A warning may appear indicating that Windows can't verify the publisher of the driver software. Click "Install this driver software anyway."



17. When the driver software has been installed, the following screen notifies you that the software has been successfully installed. This completes the first half of the driver installation. Click "Close" to continue.

18. The "Found New Hardware Wizard" opens again. Click "I don't have the disc. Show me other options."



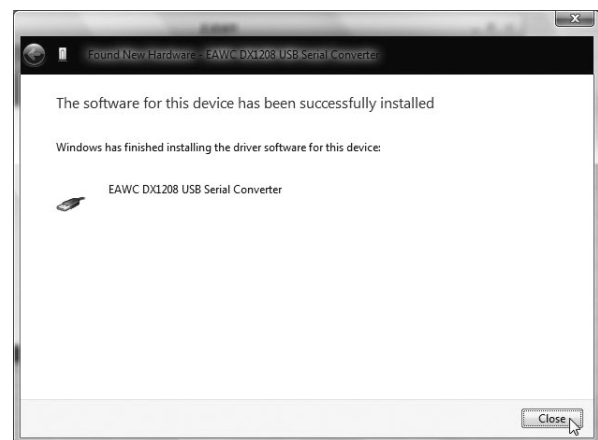19. Select "Browse my computer for driver software (advanced)."



20. Click the "Browse" button and navigate to C:\Program Files\EAW\Data\FTDI\DX1208 (or other location if you chose to install the drivers somewhere else). Click "Next" to continue.
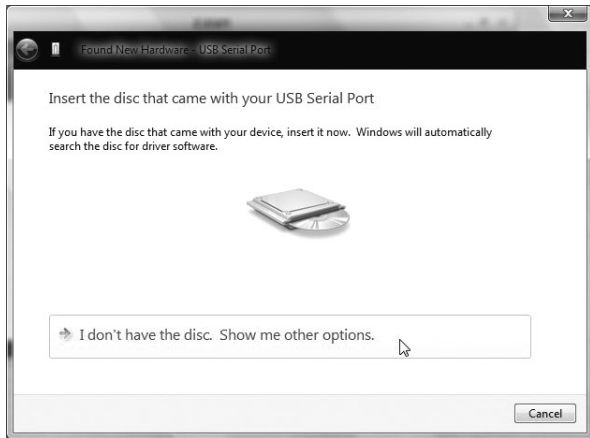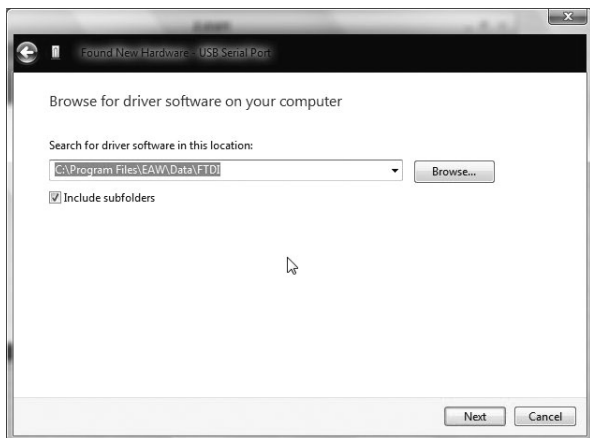


21. The installer will begin installing the driver software. A warning may appear indicating that Windows can't verify the publisher of the driver software. Click "Install this driver software anyway."
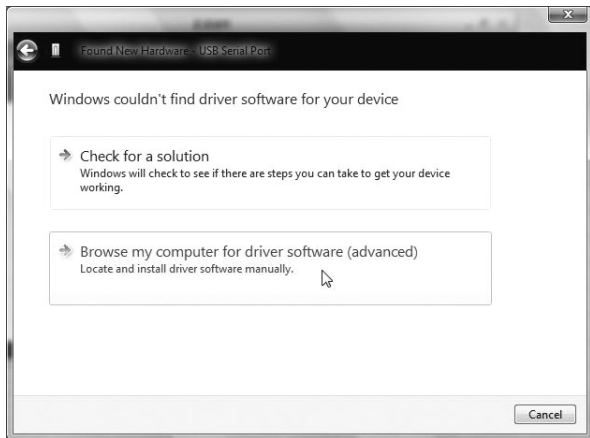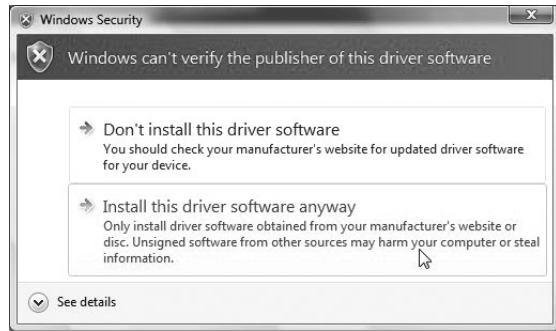


22. When the driver software has been installed, the following screen notifies you that the software has been successfully installed. Click "Close" to complete the driver installation.
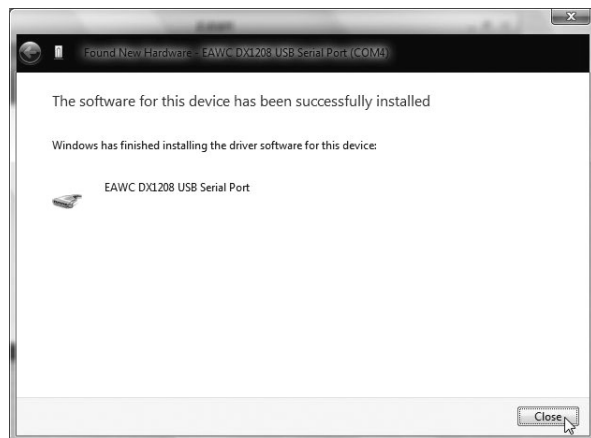
## ESTABLISHING COMMUNICATION OVER USB

There are a few steps required to establish communication between DX Navigator and the DX1208.

1. Click "Tools" in the top menu bar and select "Communications" from the drop-down menu. The Communications window opens.



2. Click the "COM Port" radio button and select the COM Port that is assigned to the USB port that is connected to the DX1208.

   If you are not sure which COM Port is being used, open the Device Manager on your computer, locate "Ports (COM & LPT)" in the list and click the "+" sign in front of it. You should see "EAWC DX Family USB Serial Port" followed by a COM port number. This is the number you should select in DX Navigator's Communications window.

   Click "OK" to close the Communications window.

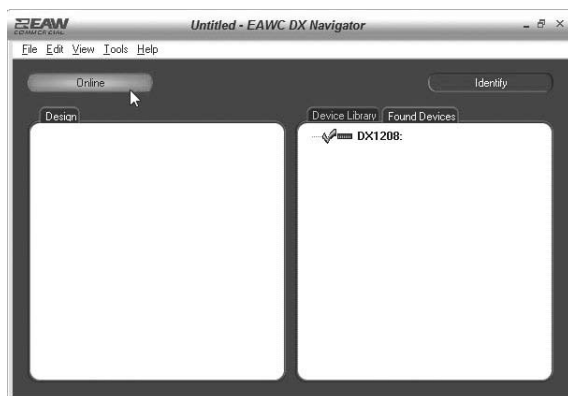3. Click "Go Online." DX Navigator will begin to query the DX1208 and the COMM LED on the DX1208 should light.

4. Once communication is established, the DX1208 icon appears in the "Found Devices" tab with a green checkmark in front of it.



5. Double-click the DX1208 icon in the "Found Devices" tab to open the DX1208 interface. Click on the tabs across the top of the DX1208 interface to open individual screens for accessing controls and settings. The tabs include Input, Priorities, Automix, Output, DXLink, Logic I/O, Remotes, and Settings.

6. Refer to the Help file for detailed information about each of the screens. To open the Help file, return to the DX Navigator window, click "Help" in the top menu bar, and select "DX1208 Help."

## COMMUNICATING OVER ETHERNET

You can connect your computer to the DX1208 directly with an Ethernet connection, or indirectly over an Ethernet switch or local area network (LAN).

### Direct Connection

The DX1208 can be connected directly to your computer using a crossover Cat5/Cat5e Ethernet cable.

When the DX1208 is connected via Ethernet, it requires an IP address and will initiate a DHCP (Dynamic Host Configuration Protocol) request for an IP address from a DHCP server. Since no DHCP server exists on a direct connection, it is necessary to assign a static IP address to the DX1208 in order to communicate over Ethernet.

**To assign a static IP address:**

1. Connect your computer to the DX1208 using the USB port.

2. Open DX Navigator, click "Go Online," and open the "Settings" tab in the DX1208 GUI. In the IP section, select "Static IP" and enter 169.254.xxx.xxx, where xxx can be any number between 1 and 254. This is a private IP address used for link-local addressing, but you can enter a private-use IP address if you prefer. Remember the number that you entered. You will need it again.

   In the Subnet field, enter 255.255.0.0.

   **Note:** Refer to RFC-3927 for information on link-local addressing, and RFC-1918 for information on address allocation for private internets.

3. Go offline and turn the DX1208 off.
   **Note:** You must power cycle the DX1208 in order for the Static IP address to take effect.

4. Connect the DX1208 to your computer with an Ethernet cable and turn the DX1208 on.

5. In DX Navigator, click "Tools > Communications" in the top menu bar.

6. Click the "Specify Target IP Addresses" radio button. Enter the same IP address that you entered previously for the DX1208 and click "Add" to add it to the list of IP Addresses that DX Navigator will search for when it goes online.

7. Click "OK." Click "Go Online" and the DX1208 icon will appear in the "Found Devices" tab.

### Indirect Connection

If you have multiple DX1208s installed in a system, you may want to have them connected together in a LAN. This allows you to connect your computer to the LAN and access each DX1208 individually without having to physically change connections.

Again, the DX1208 will send out a request for an IP address. If there is a DHCP server on the network, it will assign a unique IP address to each DX1208 on the network. If there isn't a DHCP server, then a unique static IP address will have to be manually assigned to each DX1208 (see "To assign a static IP address" above).

Once an IP address has been assigned to each DX1208:

1. Open DX Navigator and click "Tools > Communications" in the top menu bar.

2. Select "Obtain IP Addresses By Broadcast" and click "OK."

3. Click "Go Online." DX Navigator will find all devices on the network with an IP address and they will appear in the "Found Devices" tab.

**Note:** The "Obtain IP Addresses By Broadcast" may not work with Windows Vista yet. If you are running the Vista operating system, it may be necessary to assign a static IP address to each DX1208, even if there is a DHCP server on the network, and select "Specify Target IP Addresses" in the Communications window (see "To assign a static IP address" in the previous section).

## COMMUNICATING OVER RS232

A rear panel RS-232C serial port is provided for additional third party control options. Nearly every parameter that can be controlled with DX Navigator can also be controlled using a third party controller (i.e., AMX and Crestron models).

Port settings and control protocol will be provided in a separate document. Visit our website for more information at www.eaw.com.

## UPGRADING THE FIRMWARE

From time to time, EAW Commercial will release upgrades for the internal operating firmware in the DX1208. This can be downloaded from our website (www.eaw.com) to a PC-compatible computer along with instructions on how to upgrade the firmware.

# 5. TYPICAL HOOKUP DIAGRAM
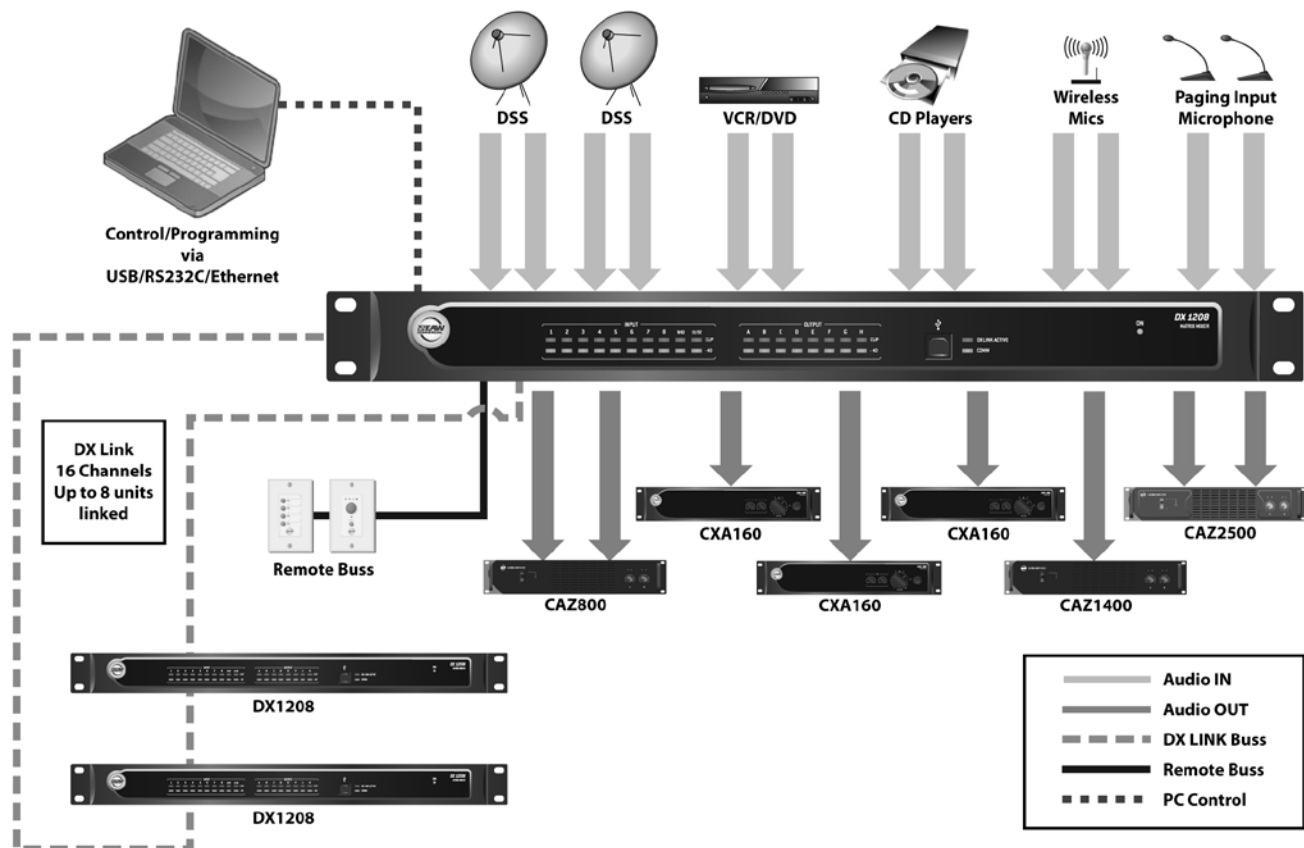
# 6. SPECIFICATIONS

## DX1208 SPECIFICATIONS

### INPUTS / OUTPUTS

| | |
|---|---|
| **Inputs 1-8:** | Balanced, Euroblock terminals |
| **Inputs 5-8:** | Unbalanced, RCA connectors (summed with Inputs 5-8 on Euroblock connectors) |
| **Inputs 9-12:** | S/PDIF with SRC, RCA connectors<br>SRC range: 32 kHz to 96 kHz |
| **Outputs A-H:** | Balanced, Euroblock terminals |
| **DXLink TX:** | 16 channel output bus, RJ-45 connector |
| **DXLink RX:** | 16 channel input bus, RJ-45 connector |
| **Ethernet:** | 1 RJ-45 connector, rear panel |
| **USB:** | 1 "B" type connector, front panel |
| **RS232:** | 1 RS-232C serial port on a DB9 connector, rear panel |
| **Logic Inputs:** | 6 inputs, contact closure, Euroblock terminals |
| **Logic Outputs:** | 3 outputs, open-collector, Euroblock terminals |
| **Remote:** | 1 remote bus with 24 VDC, RJ-25 connector |

### PANEL CONTROLS

| | |
|---|---|
| **Power On:** | Rocker switch, rear panel |
| **Address:** | 10-position rotary DIP switch |

### PANEL INDICATORS

| | |
|---|---|
| **Input Levels:** | 2-segment LEDs per channel<br>1 Green (–40 dBFS), 1 Red (Clip) |
| **Output Levels:** | 2-segment LEDs per channel<br>1 Green (–40 dBFS), 1 Red (Clip) |
| **Communication:** | 1 Green LED, lights to indicate communications activity |
| **DX Link:** | 1 Red LED, lights when valid signal is received at DX LINK RX port |
| **Power:** | 1 Green LED |

### SIGNAL PROCESSING

| | |
|---|---|
| **General:** | 1 x 32-bit DSP<br>24-bit A/D and D/A converters<br>2M x 16 Flash<br>1M x 16 SDRAM |

**Inputs**

| | |
|---|---|
| EQ Filters: | 6 per input channel |

Parametric
| | |
|---|---|
| Type: | Symmetrical boost/cut |
| Frequency: | 20 Hz to 20 kHz |
| Gain: | ±15 dB |
| Bandwidth: | 0.016 to 4.000 octaves<br>(Q = 65 to 0.25) |

Low/High Shelf
| | |
|---|---|
| Slope: | 6 dB / 12 dB per octave |
| Frequency: | 20 Hz to 20 kHz |

Low/High Pass
| | |
|---|---|
| Slope: | 12 dB per octave |
| Frequency: | 20 Hz to 20 kHz |

Bypass
| | |
|---|---|
| Bypass Filter: | For each individual filter |
| Bypass EQ: | For all EQ filters |

Compressor
| | |
|---|---|
| Threshold: | +20 to –60 dB |
| Ratio: | 1:1 to 20:1 |
| Attack: | 1 to 5000 ms |
| Release: | 50 to 5000 ms |
| Gain Makeup: | 0 to +40 dB, 0.5 dB steps |
| AGC: | Enable/Disable |
| Bypass: | For each compressor |

AGC (Automatic Gain Control)
| | |
|---|---|
| Target: | +20 to –40 dB |
| Threshold: | +20 to –60 dB, Target ≥ Threshold |
| Attack: | 1 to 5000 ms |
| Ratio: | 1:1 to 20:1 |

Gate
| | |
|---|---|
| Threshold: | –60 to +20 dB |
| Attack: | 1 to 200 ms |
| Hold: | 1 to 5000 ms |
| Release: | 1 to 5000 ms |
| Depth: | –100 to 0 dB |

Ducker
| | |
|---|---|
| Priority: | Select 1 of 5 priority levels |
| Depth: | 0 to –60 dB, 0.5 dB steps |

**Outputs**

| | |
|---|---|
| EQ Filters: | 10 per output channel (8 parametric, 1 HP, 1 LP) |

Parametric
| | |
|---|---|
| Type: | Symmetrical boost/cut |
| Frequency: | 20 Hz to 20 kHz |
| Gain: | ±15 dB |
| Bandwidth: | 0.016 to 4.000 octaves<br>(Q = 65 to 0.25) |

Low/High Shelf
| | |
|---|---|
| Slope: | 6 dB / 12 dB per octave |
| Frequency: | 20 Hz to 20 kHz |

Low/High Pass
| | |
|---|---|
| Slope: | 12 dB per octave |
| Frequency: | 20 Hz to 20 kHz |

Crossover HP/LP
| | |
|---|---|
| Slope: | 6 dB per octave, Butterworth/Bessel<br>12, 18, 24 dB per octave, Butterworth<br>12, 18, 24 dB per octave, Bessel<br>12, 24 dB per octave Linkwitz-Riley |

Bypass
| | |
|---|---|
| Bypass Filter: | For each individual filter |
| Parametric EQ Bypass: | |
| | For all EQ filters (excluding Xover filters) |

Limiter
| | |
|---|---|
| Threshold: | +20 to –60 dB |
| Ratio: | 1:1 to 20:1 |
| Attack: | 1 to 5000 ms |
| Release: | 50 to 5000 ms |
| Gain Makeup: | 0 to +40 dB |
| AGC: | Enable/Disable |
| Bypass: | For each limiter |

| | |
|---|---|
| Delay: | 0 to 2000 ms |

## AUDIO PERFORMANCE DATA

**Sampling Rate:** 48 kHz

**A/D - D/A Converters:** 24 bit

**Maximum Input Level:** Mic/Line = +24 dBu balanced
RCA = +10 dBV

**Maximum Gain:** 60 dB (Mic in to line out)

**Maximum Output Level:** +24 dBu balanced

**Output Impedance:** 200Ω balanced

**Total Harmonic Distortion (THD+N)**
(1 kHz @ +22 dBu)
Analog In to Analog Out: < 0.01%

**Common Mode Rejection Ratio (CMRR)**
(1 kHz @ +60 dB Gain)
Mic In to Analog Out: > 80 dB

**Crosstalk**
(any analog input to adjacent channel):
< –90 dB

**Equivalent Input Noise (EIN)**
Mic in to Analog out, max gain, 150 ohm termination:
–128 dBm unweighted

**Frequency Response**
Analog input to analog output:
20 Hz–20 kHz, ±1 dB

**Dynamic Range**
Analog input to analog output:
>110 dB (A-weighted)

## ELECTRICAL

**AC Power:** 100–240 VAC, 50/60 Hz

**Phantom Power:** +48 VDC

## PHYSICAL

**Dimensions (HxWxD):** 1.75 in (1 RU) / 44mm x 19.00 in / 483 mm x 9.38 in / 238 mm

**Net Weight:** 8.0 lb / 3.6 kg

## SAFETY STANDARDS

UL 60065, 7th Edition, 2006-11-20
CAN/CSA-C22.2 No. 60065-03, 1st Edition, 2006-04 + A1:2006
IEC 60065:2001 + Amd 1:2005
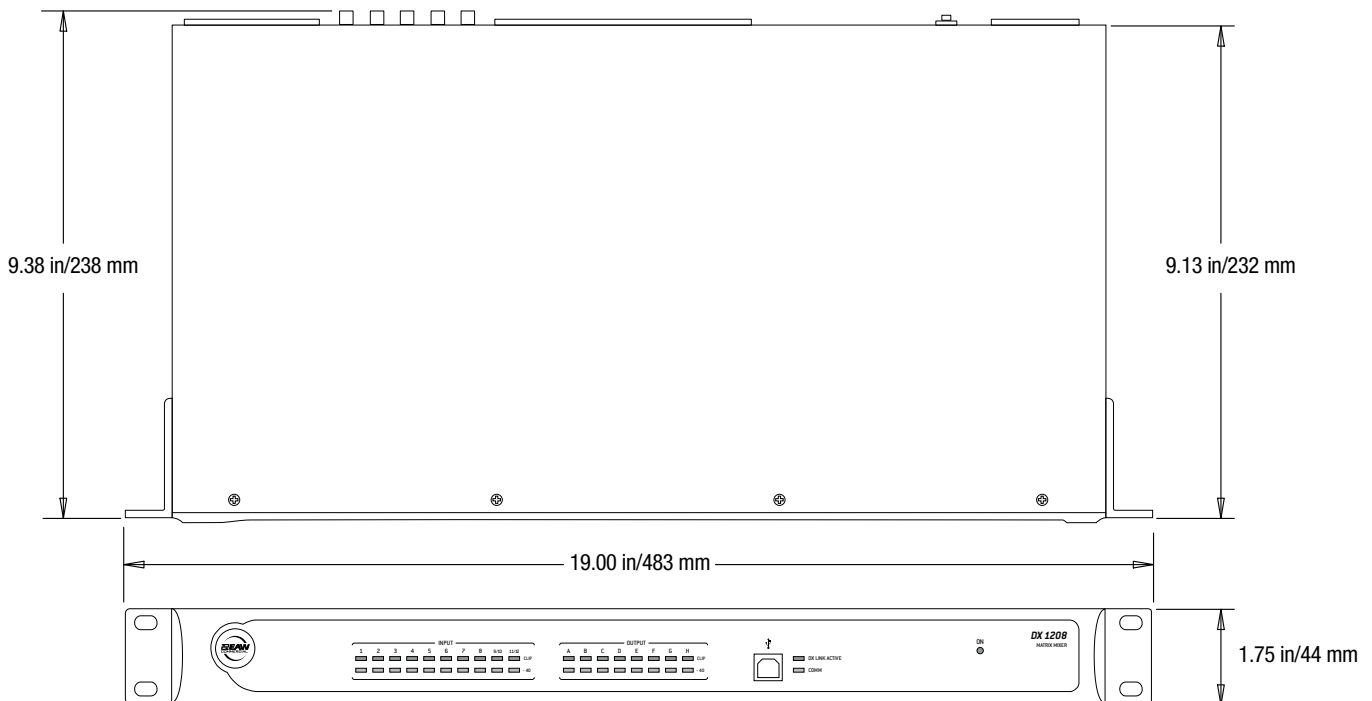EN 60065:2002

## PC SYSTEM REQUIREMENTS

**OS:** Windows XP SP2, Windows Vista

**Processor:** Pentium or faster

**RAM:** 16 MB minimum
32 MB recommended

**Storage:** 25 MB free disk space

**Display:** 1024 x 768 pixels, 16-bit color (65,536 colors) or better
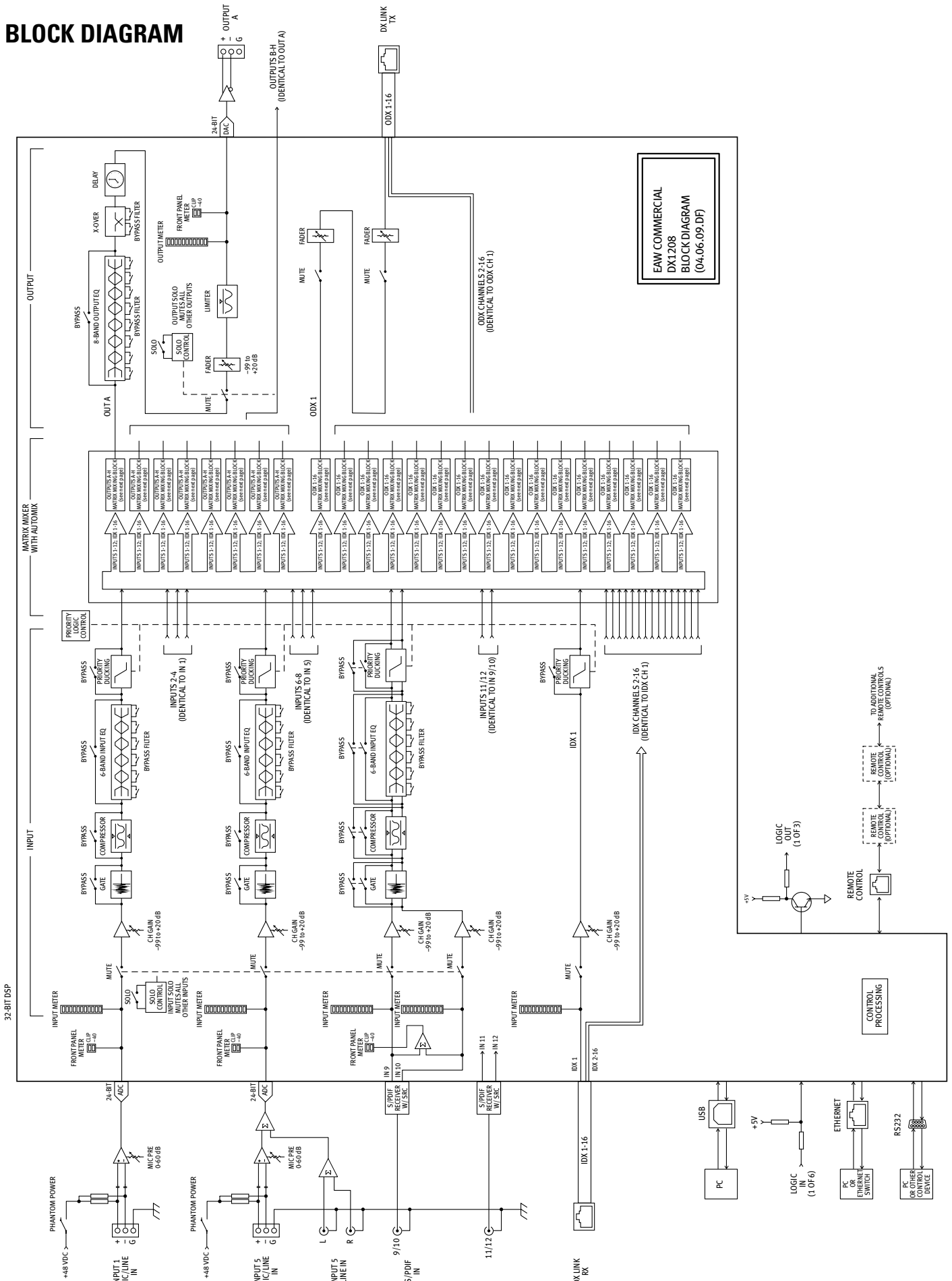
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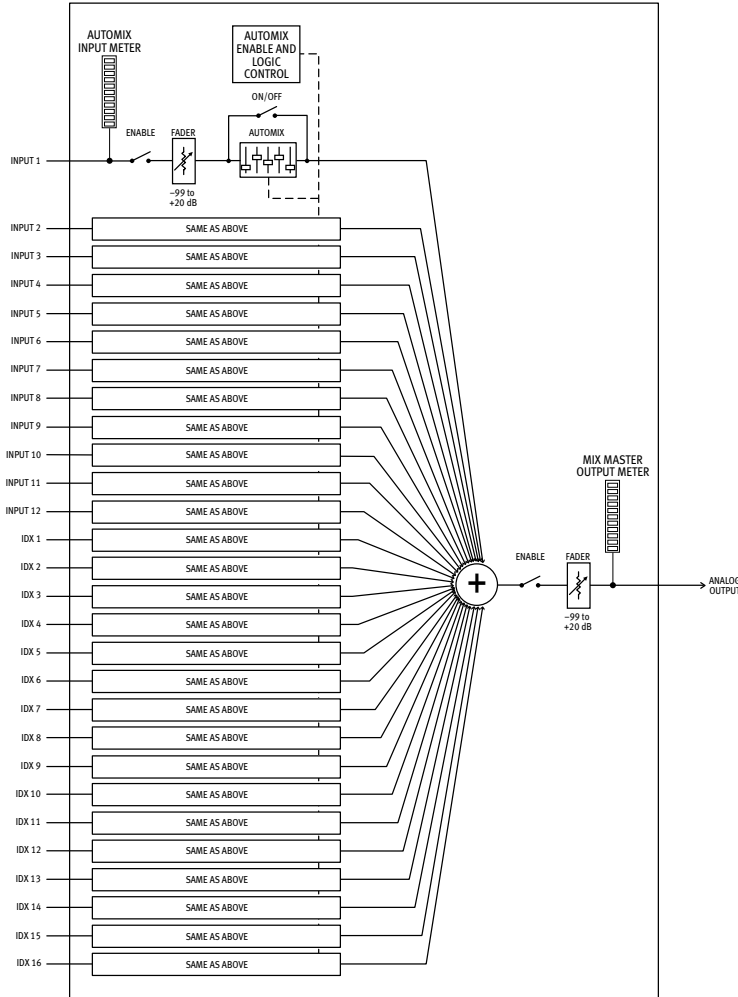
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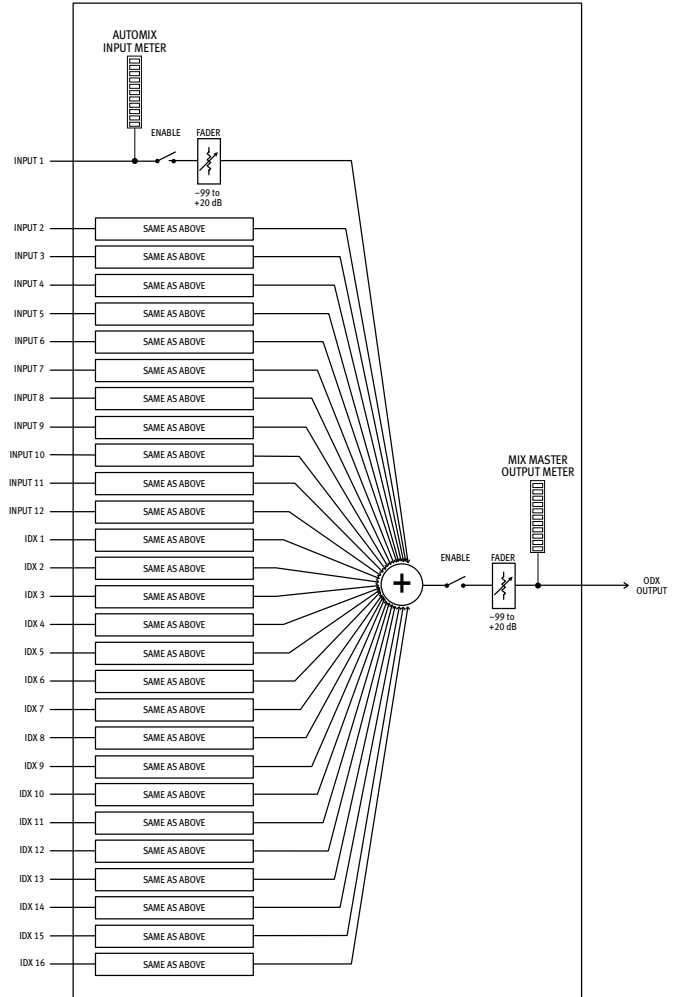
9.38 in/238 mm

9.13 in/232 mm

19.00 in/483 mm

1.75 in/44 mm

# BLOCK DIAGRAM



EAW COMMERCIAL
DX1208
BLOCK DIAGRAM
(04.06.09.DF)

## OUTPUTS A-H
## MATRIX MIXING BLOCK



## ODX 1-16
## MATRIX MIXING BLOCK



# 7. SERVICE INFORMATION

In the event that your DX1208 should require servicing, please follow these instructions:

1. Call EAW Commercial Tech Support at 1-800-992-5013, 7 am to 5 pm PST (Monday-Friday) to verify the problem and obtain a Return Authorization (RA) Number. Be sure to have the serial number of the unit when you call. You must have a Return Authorization Number in order to obtain warranty service at an authorized service center. You can also contact EAW Commercial via email at *service@eaw.com*, or through our website at: *www.eaw.com/ContactUs*

2. Pack the unit in its original packaging. ***This is very important.*** LOUD Technologies is not responsible for any damage that occurs during shipping due to non-conventional packaging. Original packaging helps to minimize the possibility of shipping damage.

3. Include a legible note stating your name, return shipping address (no P.O. boxes), daytime phone number, and Return Authorization Number. Give us a detailed description of the problem, including how we can duplicate it.

4. Write the Return Authorization Number in **BIG BOLD PRINT** on the top of the box.

5. Tech Support will tell you where to ship the unit when you call for an RA Number. We suggest insurance for all forms of cartage.

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