Quick Start Guide
Orion 8088
8x8 Analog I/O DSP

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Engineered by **Symetrix**

To download the latest version of Studio Matrix Designer, the Windows application that controls all Studio Matrix hardware, go to: www.airtoolsaudio.com

What Ships in the Box
☑ An Orion hardware device.

☑ Studio Matrix Designer CD-ROM (Windows).

☑ A SymLink patch cable.

☑ A detachable power cord.

☑ This Quick Start Guide.

☑ An RJ-45 Incompatibility Warning sheet.

What You Need to Provide
☑ A Windows PC with 300MHz or higher Pentium and:

- WIN 98SE, ME, 2000 or XP.
- 10-15 MB free storage space.
- 1024x768 graphics capability
- 16-bit or higher colors
- CD-ROM drive or Internet connection.
- 64MB RAM (WIN 98SE/ME), 128MB RAM (WIN 2000/XP).

☑ An available serial port capable of operating at 57.6 or 115.2 kilobaud.

☑ A straight-through RS-232 cable to connect the serial port of your PC to the Orion's rear RS-232 port. The Orion's RS-232 input is a female DB-9 connector.

Getting Help
Studio Matrix Designer, the Windows application that controls all Studio Matrix hardware, includes a help module which acts as a complete user's guide for both hardware (including the Orion) and software.

If you have questions beyond the scope of the help module, contact our Customer Support Group in the following ways:

Tel   (425) 778-7728
         8:00 am to 4:30 pm
         Monday through Friday, Pacific Time

Email   tech@airtoolsaudio.com

Web   www.airtoolsaudio.com

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.
This Class A Digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations
Cet appareil numerique de la classe A respecte toutes les Exigences du Reglement sur le materiel brouilleur du Canada.

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 only 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. 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 cord 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.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE

AVIS: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

SEE OWNERS MANUAL. VOIR CAHIER D'INSTRUCTIONS. No user serviceable parts inside. Refer servicing to qualified service personnel. Il ne se trouve a l'interieur aucune piece pouvant entre reparée l'usager. S'adresser a un reparateur compétent.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of 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 of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product (i.e. this Quick Start Guide).

CAUTION *To prevent electric shock, do not use the polarized plug supplied with the unit with any extension cord, receptacle, or other outlet unless the prongs can be fully inserted.*

Power Source. AirTools Orion hardware uses a switching power supply that automatically adjusts to the applied voltage. Ensure that your AC mains voltage is somewhere between 100-240 VAC, 50-60 Hz. Use only the power cord and connector specified for the product and your operating locale. A protective ground connection, by way of the grounding conductor in the power cord, is essential for safe operation.

User Serviceable Parts. There are no user serviceable parts inside the AirTools Orion. In case of failure, customers inside the U.S. should refer all servicing to the Symetrix factory. Customers outside the U.S. should refer all servicing to an authorized AirTools distributor. Distributor contact information is available online at www.airtoolsaudio.com.

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Introduction, Overview, Mechanical Data, Performance Data　　　**2/9**

Introduction

The AirTools Studio Matrix is a powerful, multi-function, DSP-based audio routing system. Modular and scalable, the Studio Matrix consists of several different hardware modules, which connect to give you a flexible routing and signal processing solution tailored to your needs. In addition to audio routing, the system also provides EQ, gain, mute, and level control as well as dynamics functions including AGC and compression. Setup is fast and simple using Studio Matrix Designer software which runs on a PC connected to Studio Matrix hardware. Using standard CAT-5 cable for passing audio between rack room and studios, the system performs with a dynamic range in excess of 112 dB. In a typical Studio Matrix equipped facility, on-air and production rooms are fitted with Homer 7000 Breakout boxes each capable of receiving four mono channels from, and sending four mono channels back to, the rack room via CAT-5 cable. In the rack room the required Studio Matrix modules are digitally interconnected via SymLink, our 64-channel digital audio bus. Each rack room module hosts two 66MHz SHARC™ floating-point processors to cover all your signal processing requirements. With the Studio Matrix from AirTools your station's audio will move to a new level of sound quality, flexibility, and reliability.

Overview

The Orion is a 1 rack space AirTools Studio Matrix hardware device which provides the system with eight (8) analog line level audio inputs and eight (8) analog line level audio outputs. The Orion is one of the core DSP hardware devices in the AirTools Studio Matrix family. It features two (2) 66 MHz SHARC™ processors which manipulate audio with 40-bit floating-point precision. All analog-to-digital and digital-to-analog audio conversion in the Studio Matrix system is 24 bit/48 kHz. The Orion also provides the same control and configuration features as the other core Studio Matrix hardware devices (the Icarus, Ulysses, Narcissus, Oedipus and Iliad) and all of these features are detailed in this Quick Start Guide.

Mechanical Data

Item	Discussion	Remarks
Space Required	1U (WDH: 48.26 cm x 26.6 cm x 4.369 cm / 19 in x 10.475 in x 1.72 in). Depth does not include connector allowance.	Allow at least 1 inch additional clearance for rear panel connections. Additional depth may be required depending upon your specific wiring and connections.
Electrical	100-240 VAC, 50-60 Hz, 60 Watts maximum.	No line voltage switching required.
Ventilation	Fan located at equipment right, pulls cold air into unit. Air exit at equipment left. Maximum recommended ambient operating temperature is 30 C / 86 F.	Ensure that the left and right equipment sides are unobstructed (2 in / 5.06 cm minimum clearance). The ventilation should not be impeded by covering the openings with items such as newspapers, tablecloths, curtains, etc.
Weight	4.45 kg / 9.82 lbs.	

Performance Data

Analog Inputs		
Nominal Input Level	+4 dBu or -10 dBv line level (software selectable) with 20 dB of headroom	Note: For unbalanced use, either reference the minus input terminal to the signal source ground (preferred) or ground the minus input to the adjacent ground terminal (tie low to ground). Using the second method deprives you of the common mode rejection inherent in a balanced input, even when coming from an unbalanced source.
Maximum Input Level	+24 dBu	
Input Impedance	20k Ohms	
Dynamic Range	> 114 dB (20 Hz to 20 kHz, A-weighted)	
THD + Noise	0.0035% (20 Hz to 20 kHz, unweighted with +24 dBu input)	
CMRR	> 50 dB (0 dBu, 20 Hz to 20 kHz)	

Analog Outputs		
Nominal Output Level	+4 dBu line level with 20 dB of headroom	Note: For unbalanced use, float (do not connect) the minus output terminal. Unbalanced usage results in 6 dB lower output level.
Maximum Output Level	+24 dBu	
Output Impedance	200 Ohms balanced, 100 Ohms unbalanced	
Dynamic Range	> 114 dB (20 Hz to 20 kHz, A-weighted)	
THD + Noise	0.0035% (20 Hz to 20 kHz, unweighted with +24 dBu output)	

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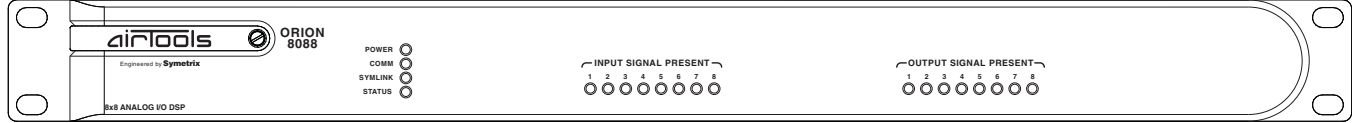## 8x8 Analog I/O DSP

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Front Panel

Item	Description	What It Does
POWER	Bi-color LED	Indicates that the unit is powered on.
COMM	Bi-color LED	Indicates active communications.
SYMLINK	Bi-color LED	Indicates SymLink bus connection.
STATUS	Bi-color LED	Indicates the current running or fault status.
INPUT SIGNAL PRESENT	Green LEDs	Indicates presence of audio on analog inputs (1-8) using variable brightness.
OUTPUT SIGNAL PRESENT	Green LEDs	Indicates presence of audio on analog outputs (1-8) using variable brightness.

LED Color Table

Bi-color LED	Indicated Color/Status	Meaning
POWER	Green - Solid	Unit is powered on
	Green - Flashing (upon initial powerup)	Number of flashes indicates device ID number
COMM	Green	Active serial or SymLink bus communications
	Orange	Active Ethernet communications
SYMLINK	Green - Solid	Valid SymLink bus connection
	Green - Flashing	Invalid SymLink bus connection - Check DIP switch settings of all connected units. Check cabling.
STATUS	Green - Solid	Unit is Primary and active
	Green - Blipping	Unit is Primary and inactive
	Orange - Solid	Unit is Secondary and active
	Orange - Blipping	Unit is Secondary and inactive
	Red - Flashing	Unit has a fatal error and is off-line
	Red - Solid	Unit has a non-fatal error and is active
	Red - Blipping	Unit has a fatal error and is inactive

Further discussion of both status indications and redundant operation is covered in the **Redundant Operation** section.

Rear Panel
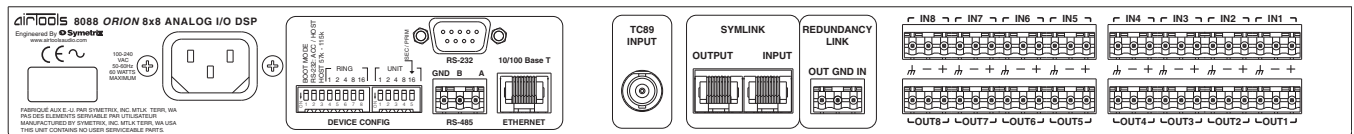
Item	Description	What It Does
POWER INPUT	IEC 3 prong jack	Accepts power from detachable IEC power cable (100-240 VAC, 50-60 Hz, 60 Watts max).
DEVICE CONFIG	8 + 5 DIP switch blocks	Configures the Orion's ring number (1-31), device address (1-15) as well as the communications interface (RS-232/Ethernet) and Primary/Secondary designation. Addressing is done in a binary fashion. (See **Device Address Quick Reference**).
RS-232	Female DB9	Serial communications interface with Studio Matrix Designer on the host PC or a 3rd party accessory controller. (Mode is determined by the Ethernet/232 mode switch.)
RS-485	Euroblock	Connects to a Control I/O, ARC-PS, ARC or 3rd party RS-485 compatible controller.
10/100 Base T	RJ-45	Used for Ethernet control (must be enabled via the Ethernet/232 DIP switch).
TC89 INPUT	Female BNC	Accepts (ESE) TC89 time code to drive the real-time clock and event scheduler. If TC89 is used, it should be fed to the unit(s) at address 1 (Primary or Primary + Secondary).

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Rear Panel (cont.), System Connection, Multi-Ring Systems   **4/9**

Rear Panel (continued)

Item	Description	What It Does
SYMLINK INPUT/OUTPUT	2 x RJ-45	Connects the Orion to the SymLink ring network providing an ultra-fast 64-channel audio/data backbone. OUTPUT connects to the next unit in the ring, INPUT connects to the previous unit in the ring.
REDUNDANCY LINK	Euroblock	Connects to a Secondary Orion for redundant operation wired IN to OUT, OUT to IN and GND to GND.
ANALOG INPUTS	Euroblocks	8 x analog line level audio inputs individually software selectable from +4 dBu to -10 dBv.
ANALOG OUTPUTS	Euroblocks	8 x analog line level audio outputs operating at +4 dBu.

System Connection

The Orion connects to the rest of the Studio Matrix system by SymLink. SymLink is a ring network, unlike Ethernet which uses a hub and spoke topology making a single connection to each device from a hub. Each Studio Matrix hardware device on a SymLink ring has two connections: INPUT and OUTPUT. The INPUT connects to the previous device's OUTPUT and the OUTPUT connects to the next device's INPUT to make a complete ring. When the ring is complete and all connections and device addresses are valid, the SymLink LEDs on the fronts of all units will be lit solid green. (See **LED Color Table**.)

Note: Shielded CAT-5 cables are recommended for SymLink connections and length must be limited to 10 meters each. One shielded SymLink patch cable is included with each hardware device featuring SymLink connections.

Warning! The RJ-45 connectors labeled "SYMLINK" should ONLY be connected to other RJ-45 connectors labeled "SYMLINK". NEVER connect "SYMLINK" connectors to any other RJ-45 connectors.

Multi-Ring Systems

There are basically two ways in which to set up multi-ring systems. The decision to make is whether you would like to manage the rings as a whole system from the same Site File or manage the rings as completely independent systems.

To manage the rings in one Site File as a whole system, the most efficient connection method is for each hardware device to have its own dedicated Ethernet connection to a common hub or network. Any properly set up PC on the network can then control the system. It is also permissible to only connect the master (address 1) device in each ring via Ethernet to a hub or network, however this is less efficient since the host PC must communicate with slave devices via their SymLink connections instead of directly with each device.

Interfacing to manage each ring as a separate system can be done via RS-232 or Ethernet. If by Ethernet, care must be taken to avoid IP conflicts and accessibility should be considered - general network design and administration issues. If by RS-232, separate PCs can be permanently connected to each ring individually, or one PC could be meant to 'roam' amongst them.

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Device Addressing, Communications   **5/9**

Device Addressing

Every Studio Matrix hardware device must be uniquely identified. This is done in three parts. Each hardware device is assigned a ring number of 1-31. Then, each device within each ring is assigned a unique (within that ring) device address of 1-15. In general, all devices are within ring 1. Devices in the same ring are able to share audio and control data via their SymLink bus connections. Finally, each device address of 1-15 must also be designated as a Primary or Secondary device when using redundant pairs of devices. (See Redundancy.) The device addresses of the physical hardware in your system must match the devices as configured in your Studio Matrix Designer Site File. You may use the pictorial diagrams below to quickly set up and understand the device address DIP switches on the Orion.

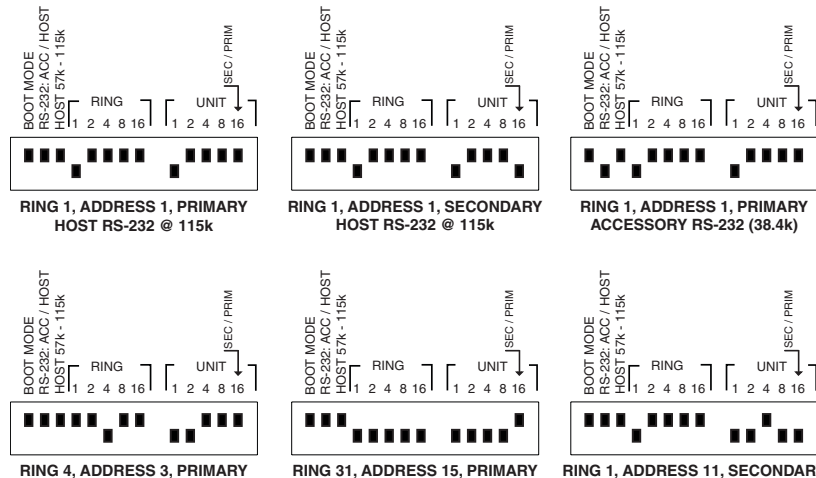**Note:** Any time the DIP switches are changed, the unit(s) must be power cycled for the changes to take effect.

Studio Matrix DIP Switch Settings

NOTE: For the sake of space, a small variety of ring, address and
primary/secondary configurations are shown.
A total of 31 rings are possible via ring numbers 1-31.
Each ring can contain a total of 15 address via address numbers 1-15.
Each address can consist of a primary and secondary device for a total of 30 devices per ring.

RING 1, ADDRESS 1, PRIMARY
HOST RS-232 @ 115k

RING 1, ADDRESS 1, SECONDARY
HOST RS-232 @ 115k

RING 1, ADDRESS 1, PRIMARY
ACCESSORY RS-232 (38.4k)

RING 4, ADDRESS 3, PRIMARY

RING 31, ADDRESS 15, PRIMARY

RING 1, ADDRESS 11, SECONDARY

Communications

Each Orion, Icarus, Ulysses, Narcissus, Oedipus and Iliad features an RS-232 port and a 10/100Base-T Ethernet port. The Studio Matrix Designer software and RS-232 accessory controllers both connect to the rear panel RS-232 port on the master (address 1) Studio Matrix hardware device. This of course means that both can not be connected via RS-232 at the same time. In order to use Studio Matrix Designer and an RS-232 accessory controller simultaneously on the same ring, you should interface your PC running Studio Matrix Designer via Ethernet. DIP switch number 2 determines the purpose of the rear panel RS-232 port for address number 1 (master) units. (Down = RS-232 for Accessory Controllers; Up = RS-232 for Studio Matrix Designer). Regardless of the switch's position, Ethernet communication can be used for Studio Matrix Designer. For units with an address other than 1, this switch has no effect. Additionally, the baud rate for the RS-232 Host communications can be switched between 115k and 57.6k baud via DIP switch number 3. The baud rate set via DIP switch number 3 must match the comm port settings in the Studio Matrix Designer preferences dialog. The RS-232 port defaults to 38.4k baud when configured for accessory communications. This can be changed via the RS-232/485 Control Protocol available from the AirTools web site or the Studio Matrix Designer online help. Remember to power cycle the unit after any DIP switch change.

Note: Ethernet communications settings (IP addresses and access codes) must first be set up from Studio Matrix Designer via the RS-232 port interface. Ethernet must be used to communicate with multiple rings in the same Site File. Please see the Studio Matrix Designer online help for further information.

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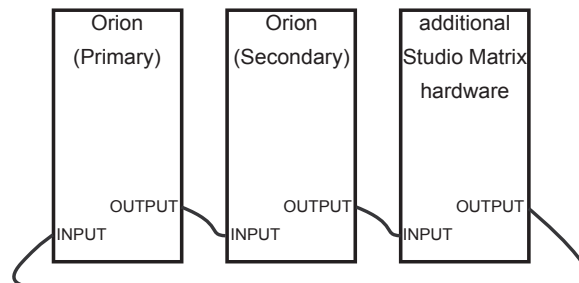
Redundancy Connections **6/9**

Redundancy Connections

Like pairs of Studio Matrix hardware can be grouped for redundant operation. This is done by designating one unit as a Primary and the other unit as a Secondary device. This designation is done with DIP switch number 13 (Up = Primary, Down = Secondary). Additionally, all necessary redundant links must be cabled between the hardware pair.

• Analog audio inputs - The analog input sources to each Orion can be split between the two from their source(s) using "Y" cabling practices. Due to the Orion's high impedance line level inputs, there shouldn't be any impedance mis-match issues or worries of phantom power delivery, etc. If there is any doubt or level incompatibility, a distribution amp can be incorporated to actively split the signal(s).

• Analog audio outputs - The analog output connections of each Orion can be passively merged to their destination(s) using "Y" cabling practices. The outputs of each Orion are relay isolated and are automatically switched in or out depending upon the current operating status of the unit.

• Redundancy Link - The redundancy link connectors of the two Orion units should be wired according to the drawing below:

REDUNDANCY
LINK

OUT GND IN

OUT GND IN
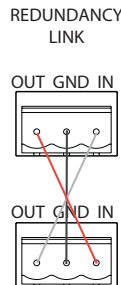
• SymLink - SymLink connections should follow the established ring paradigm with the addition of Secondary units immediately following their Primary counterparts. Reference the following drawing:

Orion (Primary)	Orion (Secondary)	additional Studio Matrix hardware
OUTPUT	OUTPUT	OUTPUT
INPUT	INPUT	INPUT

• TC89 - If TC89 is used on a redundant pair with a device address of 1, a dedicated feed from your TC89 distribution device should be connected to both the primary and secondary units.

• RS-485 - RS-485 connections can be paralleled between the units.

• RS-232 - If RS-232 is used on a redundant pair with a device address of 1, the RS-232 connector must be physically switched between the primary and secondary units in the event of a change over.

• Ethernet - If Ethernet is used, connect each device to a separate port on your Ethernet hub or switch.

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Redundant Operation

The following tables describes the possible failure modes and how they are handled with and without a redundant hardware pair.

Failure Handling with Redundant Pair		
Failure	**Action**	**Indications**
Power Supply Failure	Switch to secondary unit	Failed unit's status light = flashing red and unit is offline *
Fan Failure	Switch to secondary unit	Failed unit's status light = blipping red and unit is inactive
DSP Failure (crash or hardware problem)	Switch to secondary unit	Failed unit's status light = flashing red and unit is offline *
FPGA Failure	Switch to secondary unit	Failed unit's status light = flashing red and unit is offline *
Watchdog timeout (software hang)	Switch to secondary unit	Failed unit's status light = flashing red and unit is offline *
Running factory code (boot mode switch activated, upgrading firmware or failed firmware upgrade)	Switch to secondary unit	Failed unit's status light = blipping red and unit is inactive
Problem with previous boot (crashed and didn't power down normally last boot)	Switch to secondary unit	Failed unit's status light = blipping red and unit is inactive
* unit will light status light to indicate fatal failure as long as the nature of the failure allows it to do so		

Failure Handling without Redundant Pair		
Failure	**Action**	**Indications**
Power Supply Failure	Go offline	Status light = flashing red and unit is offline *
Fan Failure	Indicate non-fatal error	Status light = solid red and unit is active
DSP Failure (crash or hardware problem)	Go offline	Status light = flashing red and unit is offline *
FPGA Failure	Go offline	Status light = flashing red and unit is offline *
Watchdog timeout (software hang)	Go offline	Status light = flashing red and unit is offline *
Running factory code (boot mode switch activated, upgrading firmware or failed firmware upgrade)	Indicate non-fatal error	Status light = solid red and unit is active
Problem with previous boot (crashed and didn't power down normally last boot)	Indicate non-fatal error	Status light = solid red and unit is active
* unit will light status light to indicate fatal failure as long as the nature of the failure allows it to do so		

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Software Installation

The AirTools Studio Matrix Designer software provides real-time control over multiple audio functions from a Windows 98/2000/XP PC environment.

Use one of the following procedures to install the Studio Matrix Designer on your computer.

From the Studio Matrix Designer CD-ROM:

1. The software should auto run after inserting the CD-ROM into your computer's CD-ROM drive.

2. If the software does not auto run, then Click on the Start button, Run D:\SETUP

   (If your CD-ROM drive isn't D:, then substitute its drive letter)

From the AirTools web site (http://www.airtoolsaudio.com):

1. Download the Studio Matrix Designer program file.

2. From the Start button, Run the file/program that you just downloaded to start the Setup program.

The software always starts up in offline mode. Regardless, you can explore the software, experiment to your heart's content, and perhaps even get useful work done. You can save any Sites that you create to a file that can be downloaded later into an operating Studio Matrix system.

If there is a Studio Matrix hardware unit connected, you can go download to, and upload from the Studio Matrix system. Once you have a unit connected, you can also work online in real time, which allows you to hear adjustments and settings as you make them.

Using Studio Matrix Designer

Once the installation process is complete, you should have an icon on your desktop, and a program item in the Start menu. Click on the Studio Matrix Designer icon and you're ready to begin.

Studio Matrix Designer is mostly self explanatory. The Configuration Screen represents all Studio Matrix hardware units in a system. Each unit can store up to 1000 presets. Using the tool kit (left-hand) window, you select the Studio Matrix unit that you wish to configure and drag it to the configuration page. Double clicking on the unit opens it, and causes the tool kit to display all the different signal processors available. The tool kit window is context sensitive. It always displays the items that can be placed in the current window. You can use the Browser to navigate to all of the relevant windows opened.

Drag and drop signal processors into the configuration page. Connect them together by clicking on a connection point and moving the mouse in the direction you want the wire to run. Make corners by clicking at the corner and moving off in a new direction. Terminate a wire by clicking on the terminating connection point or by hitting the ESC key or right mouse button. Right click on an existing wire and choose "Start Wire" to make a tee connection.

Once you've completed your design, download it to the Studio Matrix system. Double click on processors on the configuration page to see and change their settings.

Note: There are a lot of useful functions available in the mouse right-click. Explore! That's the ultra-condensed version. You'll find more complete information in Studio Matrix Designer's online help.

Hardware Memory

Studio Matrix saves its settings in internal flash memory, allowing it to recall settings through a power-down/up cycle. Unlike static RAM, the flash memory does not require batteries, and is designed to retain its memory for the life of the product.

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The AirTools Limited Warranty

Symetrix, Inc. expressly warrants that the product will be free from defects in material and workmanship for eighteen (18) months from the date the product is shipped from the factory. Symetrix's obligations under this warranty will be limited to repairing or replacing, at Symetrix's option, the part or parts of the product which prove defective in material or workmanship within eighteen (18) months from the date the product is shipped from the factory, provided that the Buyer gives Symetrix prompt notice of any defect or failure and satisfactory proof thereof. Products may be returned by Buyer only after a Return Authorization number (RA) has been obtained from Symetrix. Buyer will prepay all freight charges to return the product to the Symetrix factory. Symetrix reserves the right to inspect any products which may be the subject of any warranty claim before repair or replacement is carried out. Symetrix may, at its option, require proof of the original date of purchase (dated copy of original retail dealer's invoice). Final determination of warranty coverage lies solely with Symetrix. Products repaired under warranty will be returned freight prepaid via United Parcel Service by Symetrix, to any location within the Continental United States. Outside the Continental United States, products will be returned freight collect.

The foregoing warranties are in lieu of all other warranties, whether oral, written, express, implied or statutory. Symetrix, Inc. expressly disclaims any IMPLIED warranties, including fitness for a particular purpose or merchantability. Symetrix's warranty obligation and buyer's remedies hereunder are SOLELY and exclusively as stated herein.

This Symetrix AirTools product is designed and manufactured for use in professional and studio audio systems and is not intended for other usage. With respect to products purchased by consumers for personal, family, or household use, **Symetrix expressly disclaims all implied warranties, including but not limited to warranties of merchantability and fitness for a particular purpose.**

This limited warranty, with all terms, conditions and disclaimers set forth herein, shall extend to the original purchaser and anyone who purchases the product within the specified warranty period.

Symetrix does not authorize any third party, including any dealer or sales representative, to assume any liability or make any additional warranties or representation regarding this product information on behalf of Symetrix.

This limited warranty gives the buyer certain rights. You may have additional rights provided by applicable law.

Note: Some Symetrix AirTools products contain embedded software and may also be accompanied by control software intended to be run on a personal computer. Said software is specifically excluded from this warranty.

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The total liability of Symetrix on any claim, whether in contract, tort (including negligence) or otherwise arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair, replacement or use of any product will not exceed the price allocatable to the product or any part thereof which gives rise to the claim. In no event will Symetrix be liable for any incidental or consequential damages including but not limited to damage for loss of revenue, cost of capital, claims of customers for service interruptions or failure to supply, and costs and expenses incurred in connection with labor, overhead, transportation, installation or removal of products, substitute facilities or supply houses.

Servicing the Orion

If you have determined that your Orion requires repair services and you live outside of the United States please contact your local AirTools dealer or distributor for instructions on how to obtain service. If you reside in the U.S. then proceed as follows.

Return authorization

At the Symetrix factory, Symetrix will perform in-warranty or out-of-warranty service on any product it has manufactured for a period of three (3) years from date of discontinued manufacture.

Before sending anything to Symetrix, please contact our Customer Service Department for a return authorization (RA) number. The telephone number is (425) 778-7728. Additionally support is available via E-mail through tech@airtoolsaudio.com or via the web site http://www.airtoolsaudio.com.

In-warranty repairs

To get your Orion repaired under the terms of the warranty:
1. Call us for an RA number (have the serial number, shipping and contact information and description of the problem ready).
2. Pack the unit in its original packaging materials.
3. Include your name, address, daytime telephone number, and a brief statement of the problem.
4. Write the RA number on the **outside** of the box.
5. Ship the unit to Symetrix, freight prepaid. We do not accept freight collect shipments.

Just do these five things, and repairs made in-warranty will cost you only one way freight charges. We'll pay the return freight.

If you don't have the factory packaging materials, we recommend using an oversize box. Wrap the unit in a plastic bag, surround it with bubble-wrap, and place it in the box surrounded by Styrofoam peanuts. Be sure there is enough clearance in the box to protect the rack ears. We won't return the unit in anything but Symetrix packaging for which we will have to charge you. If the problem is due to operator misuse or error, you will have to pay for both parts and labor. In any event, if there are charges for the repair, you will pay for the return freight. All charges will be COD unless you have made other arrangements (prepaid, Visa or Mastercard).

Out-of-warranty repairs

If the warranty period has passed, you'll be billed for all necessary parts, labor, packaging materials, and freight charges. Please remember, you must call for an RA number before sending the unit to Symetrix.