

Tesira[®]
EX-LOGIC
Logic and Control
Expander

Operation Manual

September 2012

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TESIRA EX-LOGIC



The Tesira® EX-LOGIC is a half-rack logic box for use with Tesira SERVER and SERVER-IO devices. The EX-LOGIC provides both logic inputs and outputs and, through software, can be configured as a control interface. There are 16 total connections that can be used as inputs or outputs. 12 of the connections are designed as logic connections only and will accept contact closure or 5V TTL when used for logic or sink a maximum of 40V/300mA per output. The remaining four connections can also be used for logic connections or as variable voltage control inputs (e.g. interface to a potentiometer). Additionally, any of the 16 connections can be configured for direct LED driver capability. The EX-LOGIC also provides a serial port for the output of command strings that can be used to send action commands to other equipment in the system. The EX-LOGIC communicates with the Tesira network for data transmission, configuration and control, and is powered by PoE.

BENEFITS

- Logic interface allows Tesira to control or respond to controls from other equipment
- All connections can be configured as input or output
- Additional voltage control connections allow for control functions that are variable rather than simple on/off

FEATURES

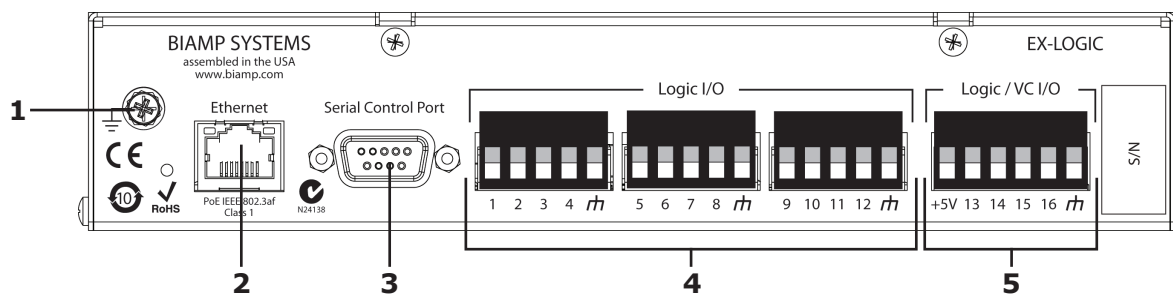
- 16 total logic connections can be used as inputs or outputs
- Four of the 16 connections can be used as voltage control inputs
- Inputs can control actions within the software including: presets, mutes, ducking, room combining, paging functions, and much more
- Outputs can trigger status relays, indicators or provide logic input to other controllable equipment
- Serial port for the output of command strings
- Connects to Tesira SERVER or SERVER-IO over Ethernet
- Powered by PoE
- Plug-in barrier strip connections
- Front panel LEDs for device status indications
- Half-rack chassis
- **RoHS** compliant and **AES** grounded
- Covered by Biamp Systems' 5-year warranty

TESIRA EX-LOGIC FRONT PANEL

The front panel of the expander displays four multicolor LEDs that provide information about the status of the expander.

LED	Off	Green	Yellow	Red
Power	Unit is not powered	Unit is powered	Not applicable	Not applicable
Alarm	No fault is active in the device	Not applicable	Minor fault is active in the device	Major fault is active in the device
Activity	Not applicable	The host device is an active part of an active system	Not applicable	The host device is part of an inactive system
Status	Not applicable	Device has received its configuration and is ready to participate in the system	Device is ready and waiting to receive a configuration	Device is not ready to receive its configuration

TESIRA EX-LOGIC REAR PANEL



1 – Grounding pin. This pin is for grounding the chassis of the expander

2 – Ethernet data connection. Uses a standard RJ-45 connector with CAT-5, CAT-5e, CAT-6 or CAT-7 cabling. The maximum distance between any unit and an Ethernet switch is 328 feet (100 meters). The expander must receive PoE (IEEE 802.3af) power on this connector in order for proper operation.

This connection is for sending and receiving control data with the Tesira server. The expander will not operate if it is not on a network that includes a Server-Class Tesira device.

3 – Serial Control port. The serial port can be utilized to send a control string to another device.

4 – Connections 1-12. These GPIO connections can be used as either inputs or outputs. They can be assigned to actions within the software using Logic Input and Logic Output blocks.

When configured as logic output, each of the 16 GPIO pins can be configured to enable a current source capable of driving an LED. The current source is enabled depending on the state of the logic output block.

5 – Connections 13-16. These connections can function in the same way as connections 1-12 for digital GPIO. But they can also be assigned as variable voltage input controls to allow analog control within the Tesira system by connection to a potentiometer.

GPIO pins 13-16 can be configured individually by the Control Voltage block in the software. If any one of these is configured for voltage control, then the logic expander will turn on the 5V potentiometer power.

Voltage Control Calibration

The four analog GPIO pins support voltage control calibration because a potentiometer may not be able to achieve the full range of voltage expected by the internal analog/digital convertors. When calibrated, the logic expander records both the minimum and maximum voltage levels caused by the potentiometer to achieve the full range of voltage. A 10K Linear Potentiometer or similar value is suggested.

TESIRA EX-LOGIC SPECIFICATIONS

Tesira EX-LOGIC Specifications

Logic Input Trigger:	Contact-Closure or 5V TTL	Logic Output Type:	Open Collector; Sink 40V/300mA per output
LED Driver:	5V/10mA per output	Weight:	2 lbs (1 kg)
System Network Connection:	Ethernet	Compliance:	FCC Part 15B (USA) CE Marked* (Europe) C-Tick (Australia) RoHS Directive (Europe)
Power:	PoE IEEE 802.3af Class 1		
Overall Dimensions:			
Height:	1.5 inches (38 mm)		
Width:	8.5 inches (216 mm)		
Depth:	7.75 inches (197 mm)		

* Requires PoE insertion device to be CE marked

FCC COMPLIANCE

FCC NOTICE - CLASS A DIGITAL DEVICE

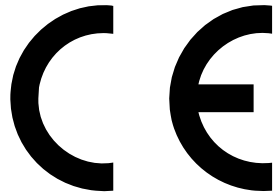
NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment 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 own expense.

WARRANTY

BIAMP SYSTEMS IS PLEASED TO EXTEND THE FOLLOWING 5-YEAR LIMITED WARRANTY TO THE ORIGINAL PURCHASER OF THE PROFESSIONAL SOUND EQUIPMENT DESCRIBED IN THIS MANUAL

1. Biamp Systems warrants to the original purchaser of new products that the product will be free from defects in material and workmanship for a period of 5 YEARS from the date of purchase from an authorized Biamp Systems dealer, subject to the terms and conditions set forth below.
2. If you notify Biamp Systems during the warranty period that a Biamp Systems product fails to comply with the warranty, Biamp Systems will repair or replace, at Biamp Systems' option, the nonconforming product. As a condition to receiving the benefits of this warranty, you must provide Biamp Systems with documentation that establishes that you were the original purchaser of the products. Such evidence may consist of your sales receipt from an authorized Biamp Systems dealer. Transportation and insurance charges to and from the Biamp Systems factory for warranty service shall be your responsibility.
3. This warranty will be VOID if the serial number has been removed or defaced; or if the product has been altered, subjected to damage, abuse or rental usage, repaired by any person not authorized by Biamp Systems to make repairs; or installed in any manner that does not comply with Biamp Systems' recommendations.
4. Electro-mechanical fans, electrolytic capacitors, gooseneck microphones, cords connecting handheld microphones, hard-drives, displays, and normal wear and tear of items such as paint, knobs, handles, keypads and covers are not covered under this warranty. All server-based devices are warranted for 3 years only.
5. This warranty is in lieu of all other warranties, expressed or implied. Biamp Systems disclaims all other warranties, expressed or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose.
6. The remedies set forth herein shall be the purchaser's sole and exclusive remedies with respect to any defective product.
7. No agent, employee, distributor or dealer of Biamp Systems is authorized to modify this warranty or to make additional warranties on behalf of Biamp Systems. Statements, representations or warranties made by any dealer do not constitute warranties by Biamp Systems. Biamp Systems shall not be responsible or liable for any statement, representation or warranty made by any dealer or other person.
8. No action for breach of this warranty may be commenced more than one year after the expiration of this warranty.
9. Biamp Systems shall not be liable for special, indirect, incidental, or consequential damages, including lost profits or loss of use arising out of the purchase, sale, or use of the products, even if Biamp Systems was advised of the possibility of such damages.

585.0315.90B



EC Declaration of Conformity

Biamp Systems Corporation, as manufacturer having sole responsibility, hereby declares that our delivered version the following described product complies with the applicable provisions of the DIRECTIVES below except as noted herein. Any alterations to the product not agreed upon and directed by Biamp Systems Corporation will invalidate this declaration.

<u>Brand Name:</u>	Tesira®	
<u>Product Description:</u>	Logic I/O Expander for Networked Audio DSP Platform	
<u>Model:</u>	EX-LOGIC	
<u>Applicable EC Directives:</u>	<u>Applicable Harmonized Standards:</u>	
LVD Directive (2006/95/EC)	Safety	EN 60950-1:2005, 2 nd edition
EMC Directive (2004/108/EC)	Emissions	EN 55022: 2010, Class A
	Immunity	EN 55024: 2010, Class A
RoHS Directive (2011/65/EU)	RoHS Recast	

Special Considerations for Product Environment or Compliance:

- Use only PoE Insertion Devices that are CE Marked, certified to local regulations, and appropriately rated Type 1 PoE or Type 2 PoE Plus (IEEE 802.3at).
- Shielded cabling must be used for system connections.

Technical Documentation File, Location and Contact:

Biamp Systems Corporation	phone:	(503) 641.7287
9300 S.W. Gemini Drive	fax:	(503) 626.0281
Beaverton, OR USA 97008	e-mail:	compliance@biamp.com

Authorized Representative: Larry Copley, Compliance Engineer

Authorized Signature:

Date and Place Issued: May 2012, Beaverton, Oregon USA

COMPLIANCE

RoHS COMPLIANT



This Biamp product, including all attendant cables and accessories supplied by Biamp, meets all requirements of EU Directives 2002/95/EC of January 27, 2003, and 2005/618/EC of August 18, 2005, the EU RoHS Directives. An EU RoHS Materials Content Declaration document may be obtained at www.biamp.com

(This information is presented to comply with the requirements of Chinese law SJ/T11363-2006)

有害物质表 (Hazardous Substances Table)

Biamp Systems Corporation

远程控制设备 (Remote Control Device)

型号 EX-LOGIC

部件名称 (Part Name)	有毒有害物质或元素 (Substances)					
	Pb 铅	Hg 汞	Cd 镉	Cr+6 六价铬	PBB	PBDE
设备机箱 (Equipment Chassis)	X	O	X	O	O	O
插拔式接线端子 (Plug-in Terminal Blocks)	O	O	O	O	O	O
手册和其他书面文档 (Manual and Paper Documents)	O	O	O	O	O	O
包装箱和所有包装材料 (Box and Packing Materials)	O	O	O	O	O	O

O: 表示该部件所有均质材料中的这种有毒有害物质低于 SJ/T11363-2006 的限制要求。

X: 表示该部件中至少有一种均质材料所含的这种有毒有害物质高于 SJ/T11363-2006 的限制要求。

在电触头和 (或) 镀镉所含的均质材料中, 镉及其化合物的含量可以超过 0.01%, 但欧盟指令 91/338/EEC (根据欧盟指令 76/769/EEC) 限制销售和使用某些危险物质和制剂部分中所禁止的用途除外

在以下一种或多种物质所含的均质材料中, 铅及其化合物的含量可以超过 0.1%:

- 1) 电子元器件中玻璃内所含的铅
- 2) 铅在钢材中是作为一种合金元素, 含量可达 0.35%
- 3) 铅在铝材中是作为一种合金元素, 含量可达 0.4%
- 4) 铅在铜材中是作为一种合金元素, 含量可达 4%
- 5) 高熔点类焊料中的铅 (即铅料合金, 铅含量超过 85%)
- 6) 电子陶瓷部件内的铅
- 7) 由两种以上元素组成的焊料中所含的铅, 用于连接引脚和微处理器包装, 其中铅的含量超过 80% 但低于 85%
- 8) 顺应针连接系统内的铅
- 9) 倒装芯片封装中半导体芯片及载体之间形成可靠连接所用焊料中的



在正常使用情况下, 中国环保使用期限为 10 年, 条件是:

- 环境温度为 (Ambient Temperature) 0-40C (32-104°F)
- 湿度为 0-95%, 无凝结
- 海拔高度为 0-10,000 英尺
- 气流不受阻碍
- 没有水或其他液体进入任何部件
- 电源为 PoE, IEEE 802.3af, Class 1
- 部件没有损坏 (损坏部件应立即修理)
- 由工厂授权人员使用批准的材料进行所有维修