

BROADCAST[®]
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PROBLEM SOLVED

Installation and Operation Manual



RJ-XLR Breakout Panels
RJ-XLR 8F 8M (8 Female XLR, 8 Male XLR)
RJ-XLR 16F (16 Female XLR)
RJ-XLR 16M (16 Male XLR)

Manual update: 8/25/2020

If you need a firmware upgrade, contact Broadcast Tools[®]

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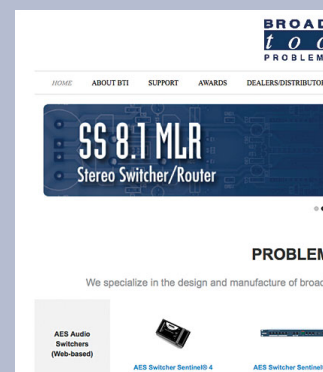
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INTRODUCTION

Thank you for your purchase of the RJ-XLR 8F 8M, RJ-XLR 16F, or RJ-XLR 16M Breakout Panel, which we will refer to throughout the manual as the RJ-XLR Breakout Panel or RJ-XLR. We are confident this product will give you many years of dependable service. This manual is intended to give you all the information needed to install and operate the Broadcast Tools® RJ-XLR Breakout Panel.

SAFETY INFORMATION

Only qualified technical personnel should install the RJ-XLR Breakout Panel. Any attempt to install this device by a person who is not technically qualified could result in a hazardous condition to the installer or other personnel or damage to the RJ-XLR Breakout Panel or other equipment. Please ensure that proper safety precautions have been taken before installing this device. If you are unfamiliar with this type of equipment, please contact a properly qualified engineer to handle the installation and setup of the RJ-XLR Breakout Panel. Broadcast Tools, Inc., is unable to support NON-Broadcast Tools software, hardware or NON-Broadcast Tools computer/hardware/software problems. If you experience these problems, please research your hardware/software instruction manuals or contact the manufacturers technical support department.

WHO TO CONTACT FOR HELP

If you have any questions regarding your product or you need assistance, please contact your distributor from whom you purchased this equipment. If you would like more information about BROADCAST TOOLS® products, you may reach us at:

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CAUTION!

Broadcast Tools® Products, as with any electronic device, can fail without warning. Do not use this product in applications where a life threatening condition could result due to failure.

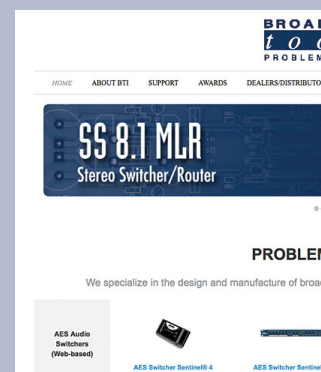


NOTE:

This manual should be read thoroughly before installation and operation.

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Product Overview

The Broadcast Tools RJ-XLR Breakout Panels are 1RU 19” rack panels that convert XLR jacks to RJ45 audio jacks using the standard Cat5 audio pinout. The XLR jacks are paired to feed stereo audio to a stereo RJ45 jack as well as split out to two additional individual RJ45 jacks for mono/AES operation for a total of 8 stereo RJ45 jacks and 16 mono/AES RJ45 jacks.

For example: audio fed into XLR jack #1 is available on the left channel of the “Stereo 1/2” RJ45 jack as well as the left/AES channel of the “AES 1” RJ45 jack and audio fed into XLR jack #2 is available on the right channel of the “Stereo 1/2” RJ45 jack as well as the left/AES channel of the “AES 2” RJ45 jack.

RJ-XLR Breakout Panels are available in three different versions which must be specified when ordering:

RJ-XLR 8F 8M (8 Female XLR, 8 Male XLR)

RJ-XLR 16F (16 Female XLR)

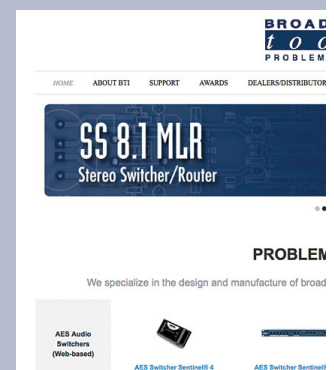
RJ-XLR 16M (16 Male XLR)

Inspection

Please examine your RJ-XLR Breakout Panel carefully for any damage that may have been sustained during shipping. If any damage is present, please notify the shipper immediately and retain the packaging for inspection by the shipper. The package should contain the RJ-XLR Breakout Panel. Manuals may be downloaded from our web site.

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Installation/Operation

Physical Properties: 1-RU, 19.00" x 3.00" x 1.75" (WDH), rack mount painted aluminum panel with printed circuit board.

Chassis Ground Screw: One of the three #4-40 sized chassis ground screws, labelled MH1, MH2, and MH3 respectively, should be tied to the station (house) or system ground.

Ground Lift Jumper Settings (JP1/GND Lift)

The Ground Lift Jumper, labelled JP1 on the printed circuit board, allows you to configure how the signal ground is connected to chassis ground:

Direct = Signal ground (COM) is directly connected to chassis ground. (Factory Default)

Cap = Signal ground (COM) is connected to chassis ground thru a .01 uF capacitor. Use this if you are experiencing ground loops.

Float = Lifts/disconnects signal ground (COM) from chassis ground.

Stereo Connections

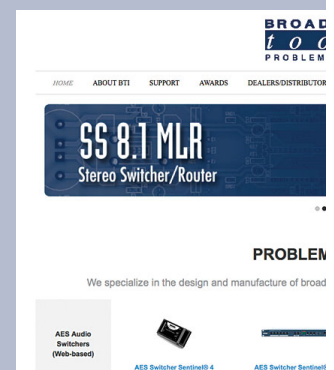
The XLR jacks on the RJ-XLR can be used as L/R analog stereo pairs where XLR jacks 1 (1 LT) and 2 (2 RT) are a pair, 3 (3 LT) and 4 (4 RT) are a pair, etc. Each pair is connected to its own stereo RJ45 audio jack labelled Stereo 1/2, Stereo 3/4 etc.

AES/Mono Connections

When stereo pairs are not needed, or AES/EBU signals are being used, the XLR jacks can be used as discrete AES or mono connections. Each XLR jack is connected to its own RJ45 jack, labelled AES 1, AES 2, etc. following the standard RJ45 audio pinout for AES signals where the signal is connected to left channel pins of the RJ45 jack.

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RJ45 Audio Jacks

The RJ-XLR Breakout Panel has eight sets of three RJ45 jacks (24 total), allowing each pair of XLR jacks to feed one RJ45, labelled Stereo x/x, as a L/R stereo pair or to feed two separate RJ45 jacks (AES x) as independent AES or mono signals.

Stereo RJ45 Audio Pinout:

Function:	Wire Pair:	RJ45 Pins:
Left+/AES+	White/Orange	1
Left-/AES-	Orange/White	2
Right+	White/Green	3
Right -	Green/White	6
n/c	White/Blue	5
DC GND	Blue/White	4
n/c	White/Brown	7
n/c	Brown/White	8
Sig. Shield	Cable Shield	Connector Shield

See the “RJ45 to XLR Connection Tables” section of this manual for individual RJ45 jack pinouts.

Please use shielded twisted pair Cat5e or Cat6 cables and connectors (STP) with the input and output RJ45 audio jacks.

For AES/EBU signals please use AES/EBU digital audio qualified cable

XLR Audio Jacks

The RJ-XLR Breakout Panel has 16 XLR jacks, labelled 1-16 on the front panel and labelled “1 LT, 2 RT, 3 LT, etc.) on the printed circuit board.

On the RJ-XLR 8F/8M XLR jacks 1-8 are male (XLR-M) and XLR jacks 9-16 are female (XLR-F.) On the RJ-XLR 16F all 16 XLR jacks are female (XLR-F.)

On the RJ-XLR 16M all 16 XLR jacks are male (XLR-M.)

XLR Connector Pinout:

The input and output XLR connector pinouts conform to 3-pin XLR wiring standards:

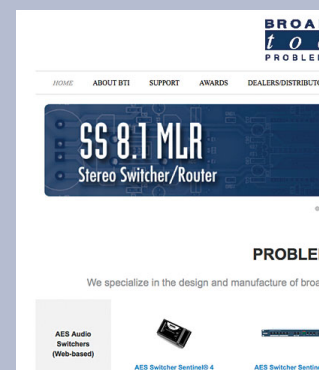
Pin 1 = Ground

Pin 2 = Positive (+)

Pin 3 = Negative (-)

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RJ45 to XLR Connection Tables

	RJ45 Left Channel (Pins 1 and 2)	RJ45 Right Channel (Pins 3 and 6)
RJ45: Stereo 1/2	XLR: 1 LT	XLR: 2 RT
RJ45: AES 1	XLR: 1 LT	
RJ45: AES 2	XLR: 2 RT	

	RJ45 Left Channel (Pins 1 and 2)	RJ45 Right Channel (Pins 3 and 6)
RJ45: Stereo 3/4	XLR: 3 LT	XLR: 4 RT
RJ45: AES 3	XLR: 3 LT	
RJ45: AES 4	XLR: 4 RT	

	RJ45 Left Channel (Pins 1 and 2)	RJ45 Right Channel (Pins 3 and 6)
RJ45: Stereo 5/6	XLR: 5 LT	XLR: 6 RT
RJ45: AES 5	XLR: 5 LT	
RJ45: AES 6	XLR: 6 RT	

	RJ45 Left Channel (Pins 1 and 2)	RJ45 Right Channel (Pins 3 and 6)
RJ45: Stereo 7/8	XLR: 7 LT	XLR: 8 RT
RJ45: AES 7	XLR: 7 LT	
RJ45: AES 8	XLR: 8 RT	

	RJ45 Left Channel (Pins 1 and 2)	RJ45 Right Channel (Pins 3 and 6)
RJ45: Stereo 9/10	XLR: 9 LT	XLR: 10 RT
RJ45: AES 9	XLR: 9 LT	
RJ45: AES 10	XLR: 10 RT	

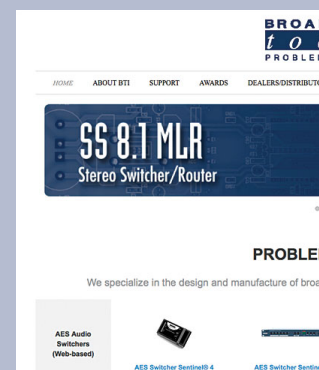
	RJ45 Left Channel (Pins 1 and 2)	RJ45 Right Channel (Pins 3 and 6)
RJ45: Stereo 11/12	XLR: 11 LT	XLR: 12 RT
RJ45: AES 11	XLR: 11 LT	
RJ45: AES 12	XLR: 12 RT	

	RJ45 Left Channel (Pins 1 and 2)	RJ45 Right Channel (Pins 3 and 6)
RJ45: Stereo 13/14	XLR: 13 LT	XLR: 14 RT
RJ45: AES 13	XLR: 13 LT	
RJ45: AES 14	XLR: 14 RT	

	RJ45 Left Channel (Pins 1 and 2)	RJ45 Right Channel (Pins 3 and 6)
RJ45: Stereo 15/16	XLR: 15 LT	XLR: 16 RT
RJ45: AES 15	XLR: 15 LT	
RJ45: AES 16	XLR: 16 RT	

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LIMITED WARRANTY

The term “Buyer” as used in this document refers to and includes both (but only) (a) any person or entity who acquires such an item for the purpose of resale to others (i.e., a dealer or distributor of an item), and (b) the first person or entity who acquires such an item for such person’s or entity’s own use.

Broadcast Tools warrants to each Buyer of any item manufactured by Broadcast Tools that the item will be free from defects in materials and workmanship at the time it is shipped by Broadcast Tools if the item is properly installed, used and maintained.

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If Broadcast Tools is notified, in writing, of a failure of any item manufactured by Broadcast Tools to conform to the foregoing Limited Warranty within one (1) year following the date of the Buyer’s acquisition of the item, and if the item is returned to Broadcast Tools in accordance with Broadcast Tools’ instructions for confirmation by inspection of the defect (which at Broadcast Tools’ election may include, without limitation, a requirement that the Buyer first obtain a Return Authorization number from Broadcast Tools, that the Buyer furnish proof of purchase in the form of an invoice and/or receipt, and that the Buyer prepay all freight charges associated with any return of the item to Broadcast Tools using such freight service as Broadcast Tools reasonably may specify), Broadcast Tools will repair or replace the defective item, or will refund the purchase price paid by the Buyer for the item. Broadcast Tools shall have the exclusive right to choose between these alternative remedies.

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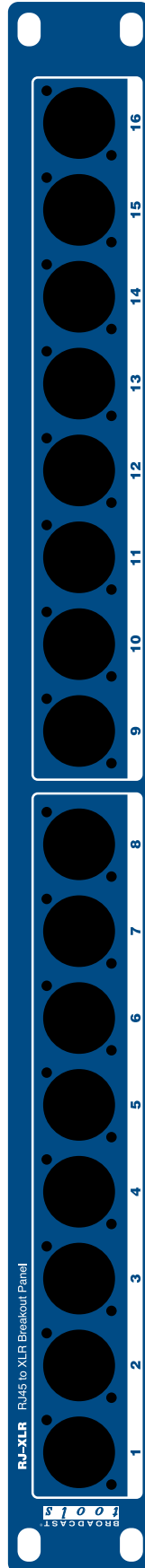
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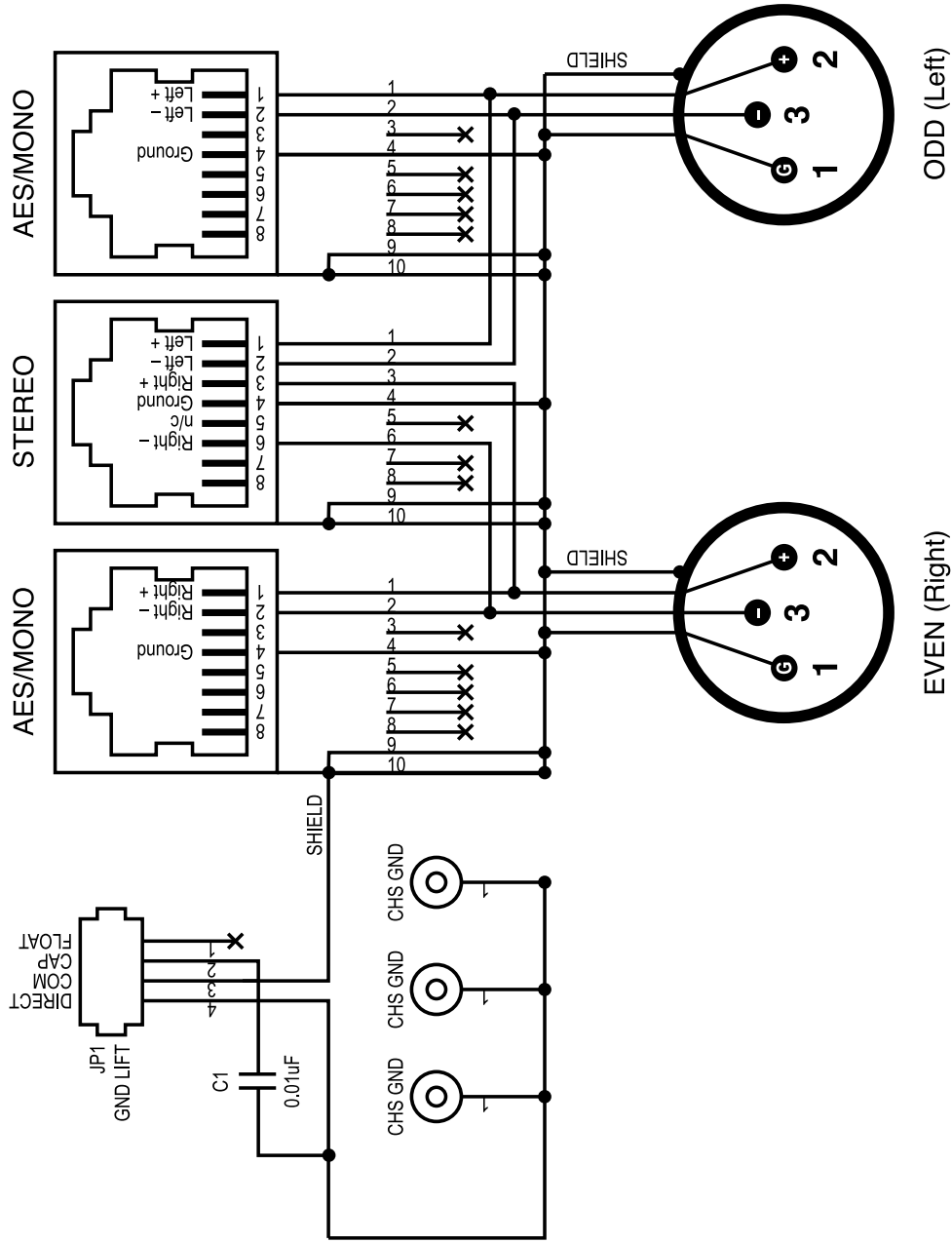
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Functional Diagram



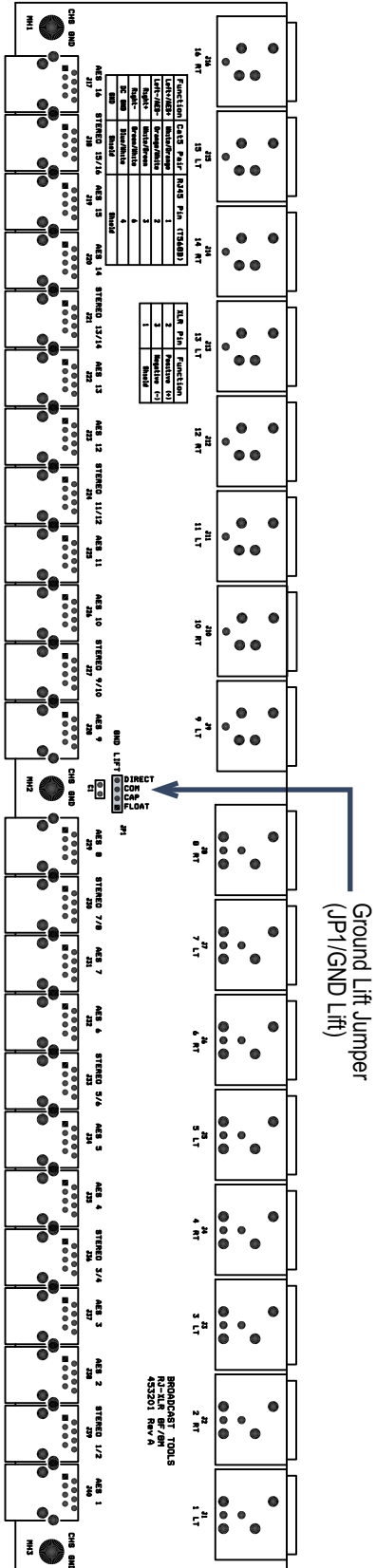
RJ-XLR

RJ45 to XLR Breakout Panel

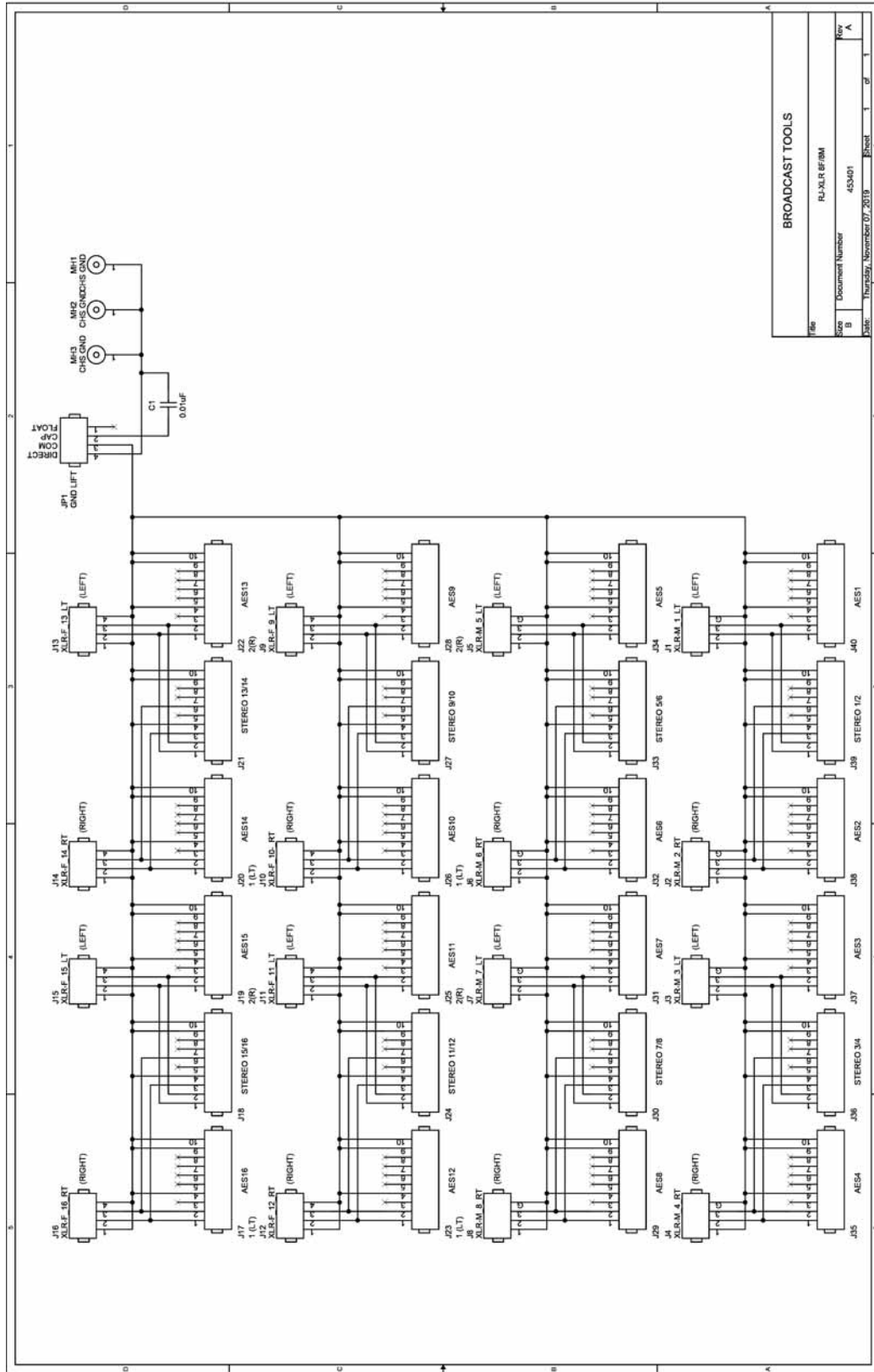
Component Layout

APPENDIX

11



Fractional Schematic

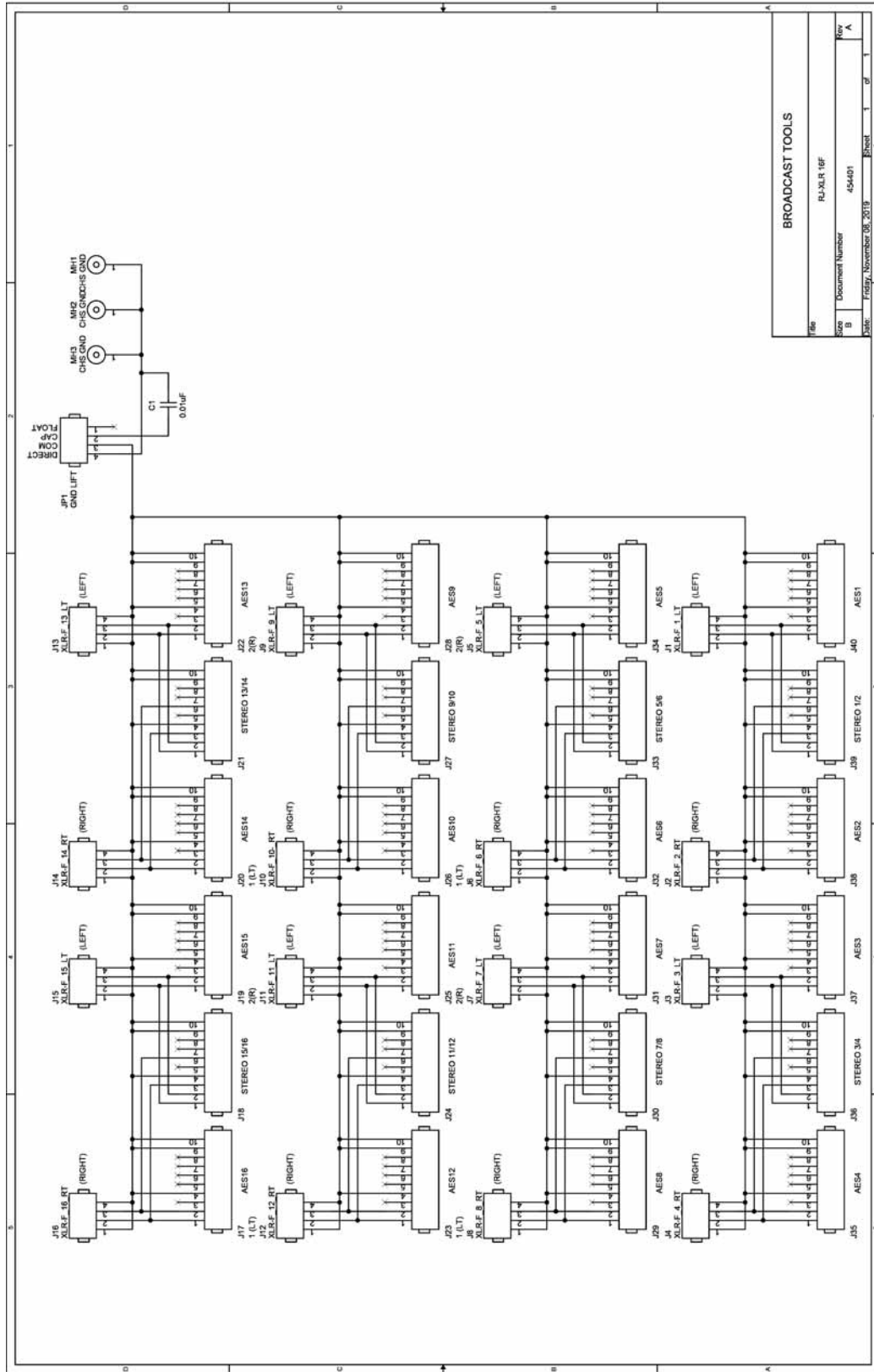


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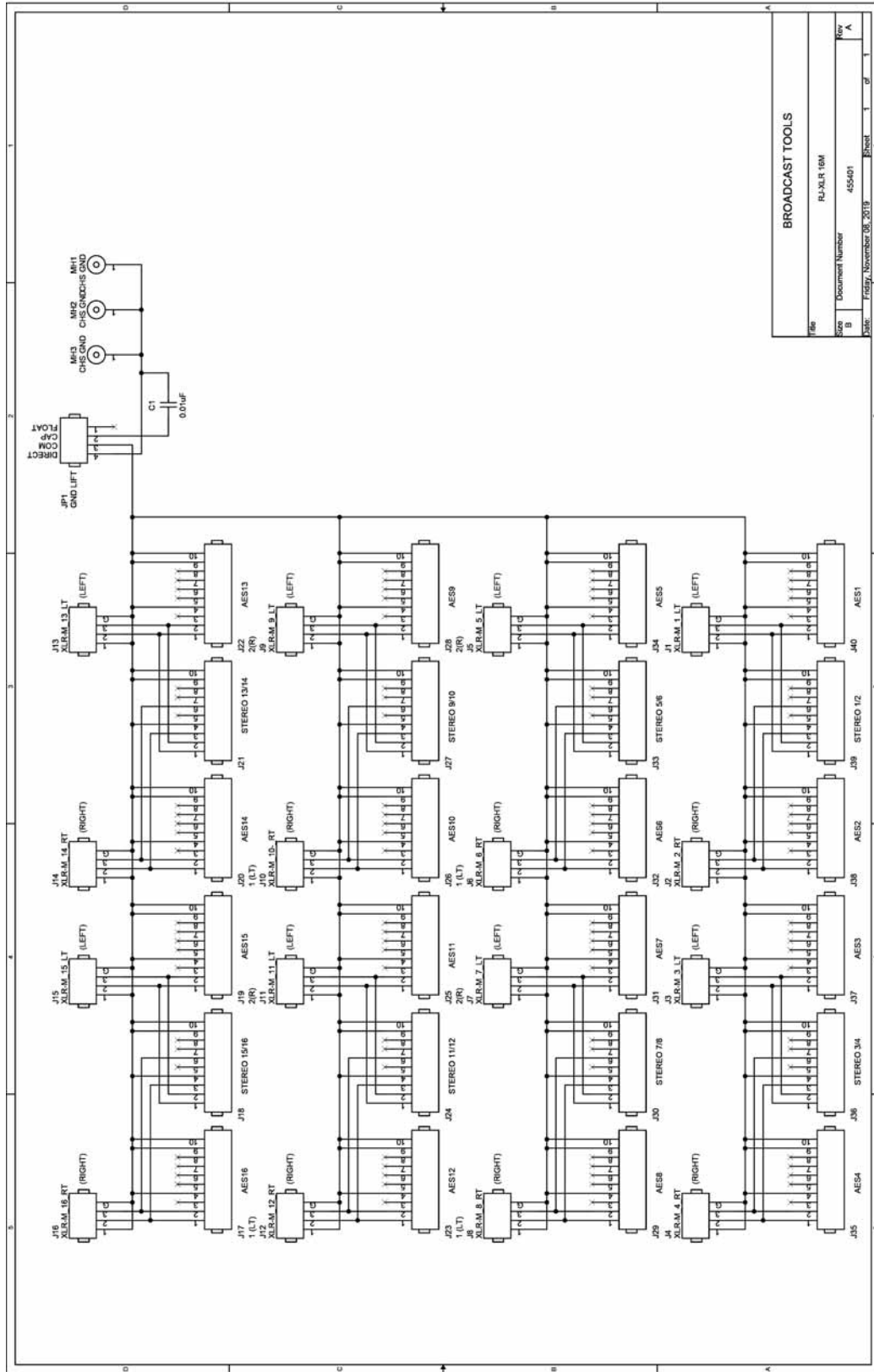
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Fractional Schematic



Fractional Schematic



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