

M-Class Quick Startup Guide

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Service Manual for the M Class DSP Audio Console System

Revision: Prelim

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Thank you for purchasing an SAS Radio Broadcast Audio Console System. The was shipped with a default factory configuration that was produced with information and an equipment list furnished at the time of order or factory testing.

IMPORTANT

The RIO DSP System has been factory configured. Additionally, the software installation CD has a pre loaded configuration specifically for the CHA studio. A setup PC will be required only if you wish to alter the configuration or wish to control and monitor system operation. The system can be wired according to the simple wiring detail of page 5, and the local media audio inputs and outputs wired to the punch blocks as specified in the Input Designation Map and Output Designation Map. A console layout with legends can be found on page 7.

After installation of the SAS Server module onto the SAS setup PC, (refer to section 2 for detailed installation instructions) please copy all of the files from the CDs “SAS Server Module” directory (.1 ini file) to the PCs “c:\program files\Server Module” directory”. Similarly, after installing the SAS Router Control Software (RCS) copy all of the files from the CDs “SasRCS” directory (2 mdb files and 1 ini file and 1 exe file) to the PCs “c:\Program Files\SasRCS” directory. These files contain switcher data base files, console configuration files and source/destination alpha label data base files specifically for the CHA Seacrest Studio Console system. The zip file will always contain the factory configuration for this system in case a “start from factory” restore is required. When starting RCS for the first time you **will not have to go through the “Define Switcher Data base”** procedures as outlined in the Software installation section 2.

The Server module is factory configured to connect to the RIO DSP Engine using PC serial COM1. Connect the PC COM port to the DSP Engine RS232A (DB9P male) and start the Server Module Software application. (Refer to section 2 page 1 and 4). Go to FILE, SETUP to change the PC COM port if required. Next, start the Router Control Software (RCS). Connection to the RIO DSP Engine should be established. Refer to Software Installation section 2 for more details.

An Excel spreadsheet has also been included on the software CD that contain the Input and Output designation maps. There are spaces reserved for wiring notes and other system documentation for convenience. The Excel tabs for Source, Destination, Opto and Relays have been printed out and included in the CHA quick start guide for convenient reference. A detailed explanation of these spreadsheets can be found later in the M Class installation manual section 3.

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Brief Overview

The RIO DSP Engine and the M-Class Console Control Surface provide a complete Radio Broadcast Audio Console System. It can be thought of as a conventional console with the console control buttons, faders, (Controls) etc separated from the audio signal mixing DSP. The Engine comes standard with RJ21 connectors suitable for using standard CAT 5 25 pair (multi pair) to punch blocks. SAS recommends Krone type punch blocks with the RJ21 connector on each side. The RIO DSP Engine is installed into the equipment bay turret in the control room’s furniture. Usually the lower bay that is in close proximity to the punch block area is preferred so that the use of short run cabling from the RIO to the blocks, and subsequently, from the blocks to the local media devices, can be utilized. This greatly increases the efficiency and reduces the installation timeline because everything is in close proximity to the DSP Engine.

The RIO DSP Engine supplied can be fitted with the optional RJ45 user connectors so that the use of “off the shelf” CAT5 network cable can be used. (not shown here) The standard network cabling can be obtained at double the length so that the cable can be cut in half to terminate the cut ends with the required signal connectors such as XLR, ¼” Phone plugs, Banana plugs etc. Installation into an upper bay of the furniture would be preferred so that the DSP Engine is in close proximity of local media devices for short run cabling interconnect.

RIO DSP ENGINE With Standard RJ21 Connectors (Rear View)



The supplied wiring kit allows for “quick plug” installation. The cables have 180° housing that connect to the DSP engine while the 90° housing connect to the side of the punch blocks.

RIO DSP ENGINE With RJ32 Cabling to Punch Blocks (Typical)

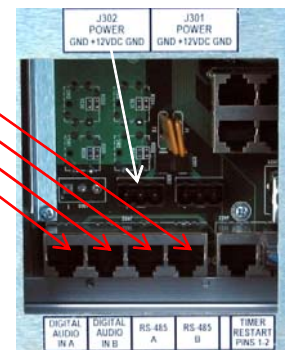


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The M Class connector panel is located underneath the M Class console tub in the upper right corner, (from top view). The Control Surface is shipped standard for table top installation and has rubber feet on the bottom of the end bells. The Console was designed for the cabling to exit from the bottom of the tub through the furniture via a grommet hole so that the wiring will not lay across the furniture in table top installations (similar to grommet holes used get PC Monitor cables off of the furniture). The M Class can also be cut into the furniture by removing the lower section of each end bell; simply remove the two (2) Philips head screws on the lower section on each side and the section can be detached from the control surface. Refer to the M Class manual for cut out dimensions. Furniture cut out installations allow for access to the cabling from underneath the furniture. The M Class has a very low profile and cabling can easily be dressed and tied with plenty of leg room for “sit down” operations. The M-Class control surface connects to the RIO DSP Engine using a few simple standard CAT 5 (RJ45 to RJ45) network cables.

M Class Layout Connector Module Detail

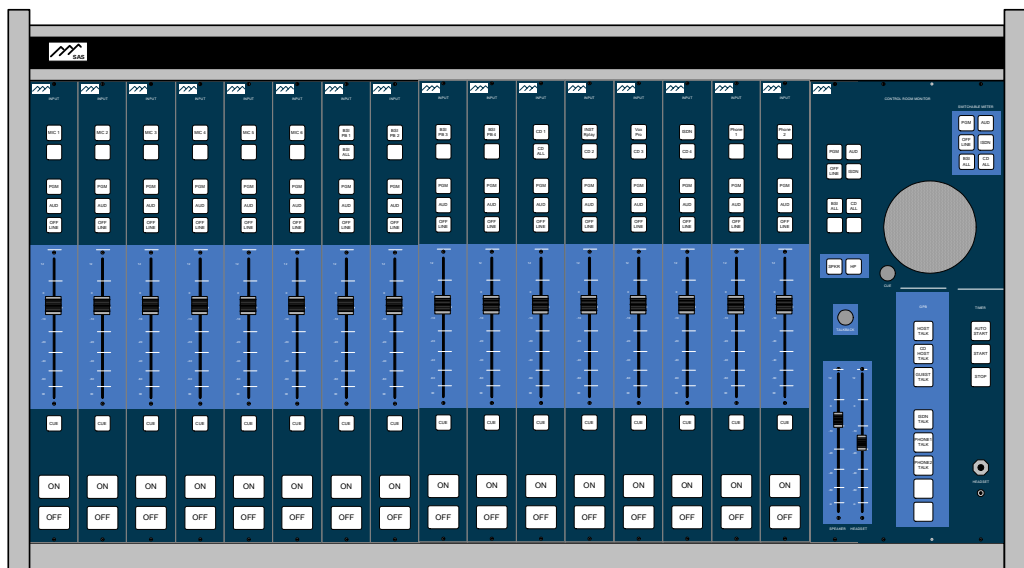
(Console Modules 17-24 and Monitor Module) Connect to 89D block RUB 2 Connector (RS485 Ports 5-9)
 (Console Modules 1-16) Connect to 89D block RUB 1 Connector (RS485 Ports 1-4)
 n/c (Optional Meter 3)
 Connect to RIO DSP RJ45 RAD-84 “Digital”
 (Fed with digital outputs 17-24)



RJ45 PinOut	Dig In A	Dig In B	RS485 A	RS485 B	Timer
Pin 1 Wht/Orn	Meter 1+	Meter 3+	Port1+	Port5+	Restart +
Pin 2 Org	Meter 1-	Meter 3-	Port1 -	Port5 -	Restart -
Pin 3 Wht/Grn	Cue/Spk+	n/c	Port2+	Port6+	n/c
Pin 6 Grn	Cue/Spk-	n/c	Port2-	Port6-	n/c
Pin 5 Wht/Blu	Bop HP +	n/c	Port3+	Port7+	n/c
Pin 4 Blu	Bop HP -	n/c	Port3 -	Port7 -	n/c
Pin 7 Wht/Brn	Meter 2+	Meter 4+	Port4+	Port8+	n/c
Pin 8 Brn	Meter 2 -	Meter 4 -	Port4 -	Port8 -	n/c

* Sorted by pairs, Pins NOT in order
 ** Standard RJ45 Pin/Pair wiring

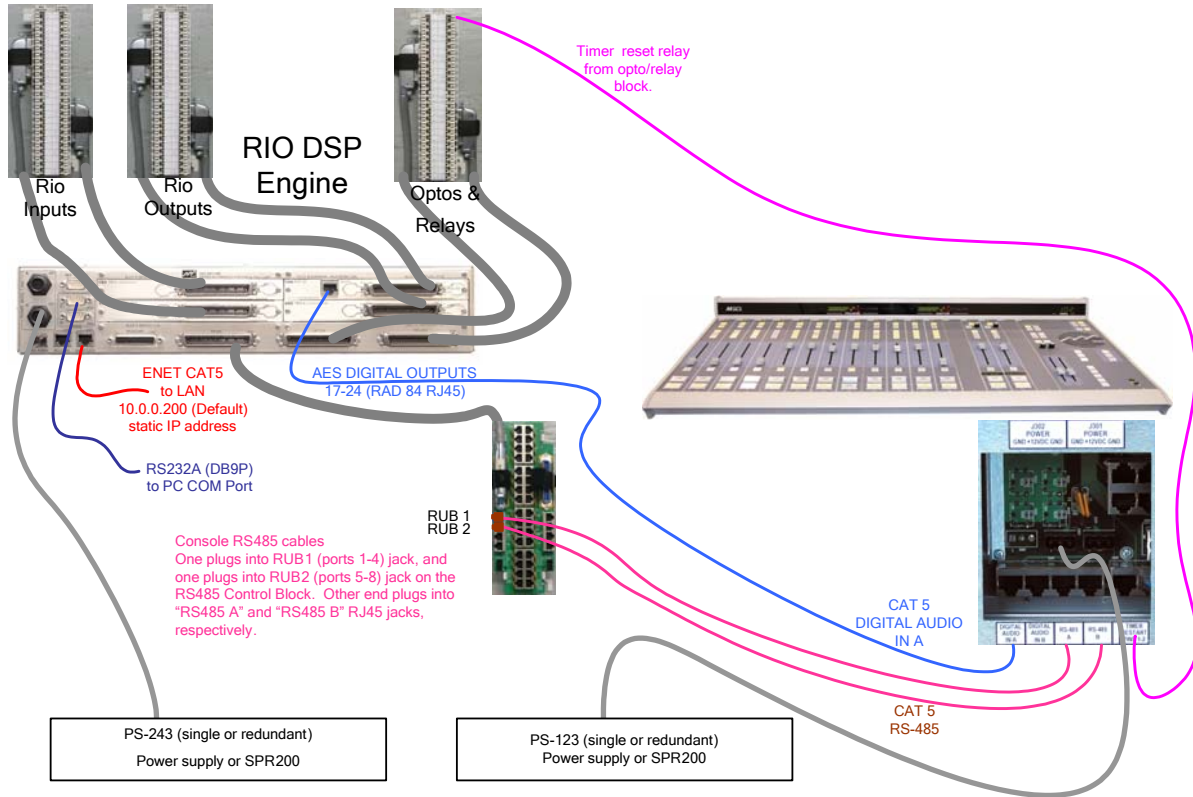
Lower Section of each End Bell can be Removed to drop into a cut out in the furniture Remove two(2) Philips head screw to detach lower section. Use caution for the cut-out as there is only 1/4" thickness of the end-bell.



Lift under Bull Nose (like a hood of a car) to access the Connector Module Section (underneath)
 Access from underneath if installed into the furniture cutout.

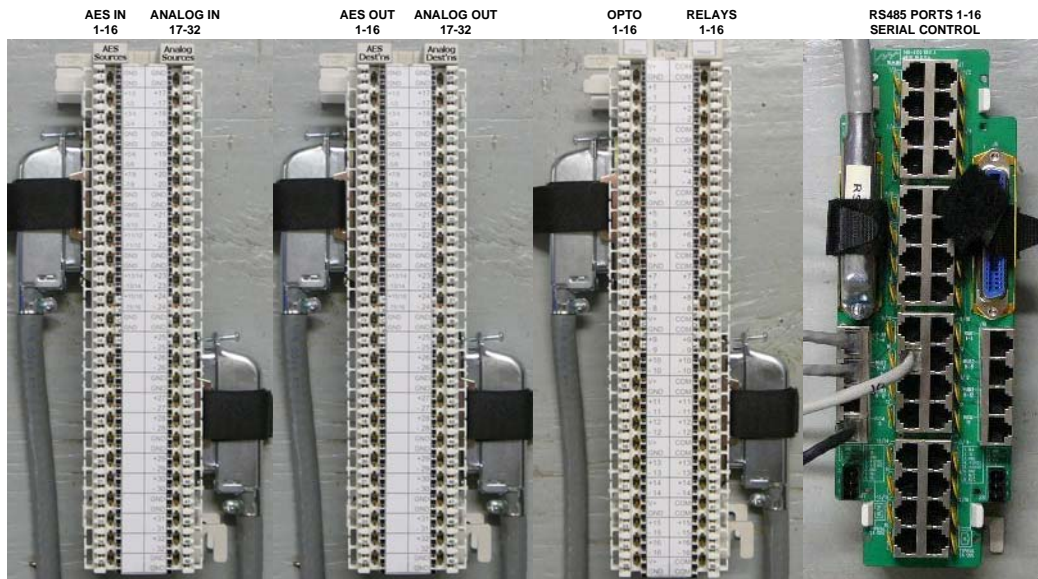
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M Class Wiring Detail for the Seacrest Studio, CHA



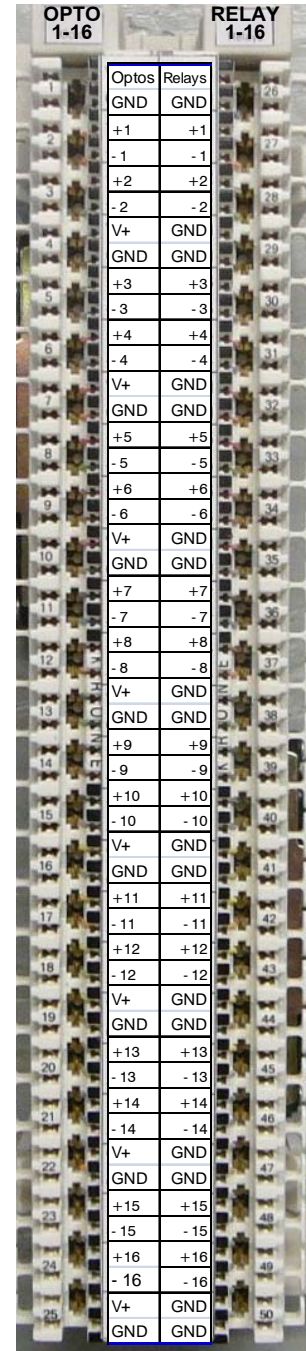
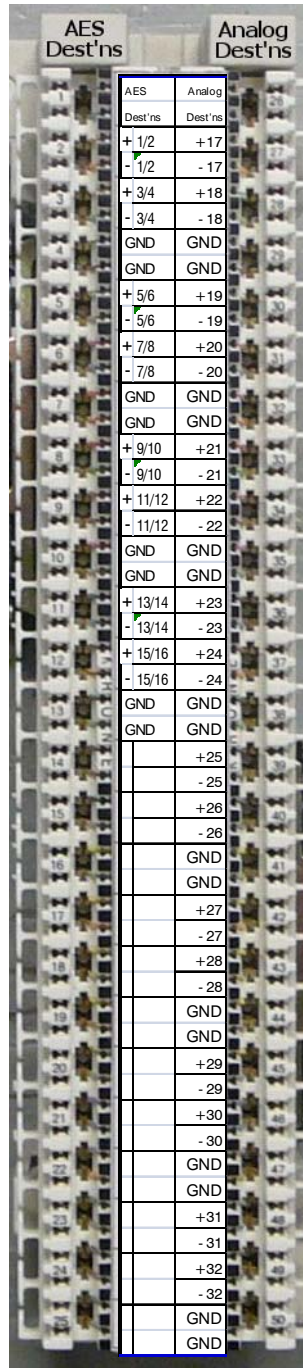
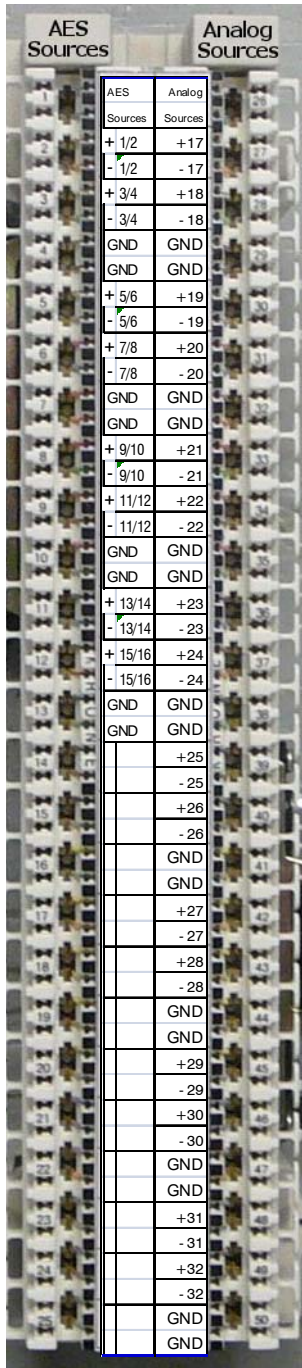
Punch Block Layout as shown

RS485 ports



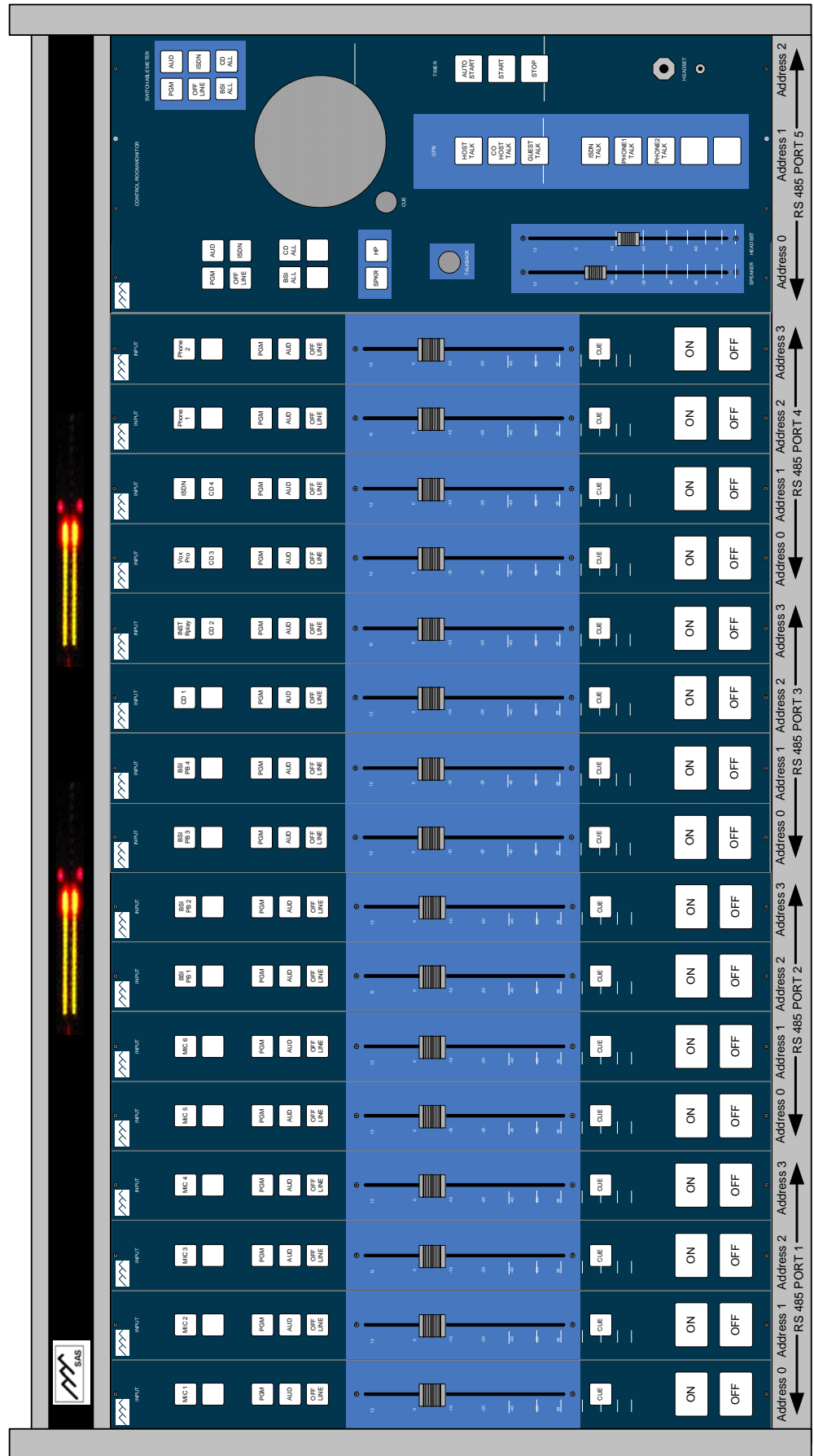
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Punch Block Layout



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Console Layout (Legends)



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Input Designation Map

Input Chan Num	Module Chan Num	Chan Label <i>8 character max</i>	LocalLabel <i>8 character max</i>	Linked <i>0=Mono, 1=Stereo</i>	Hidden <i>0=No, 1=Yes</i>	Notes <i>256 character max</i>	Block and Side	Krone Pair number		
0	0	Undef	Undef			Undefined				
		1	KRL	0	1	F1-S1 RIOLink: CHA Seacrest				
1	1	BSI PB1	BSI 1	1	0	AES 1 BSI Automation In	B1L	2	AES Block - 2 channels per pair Ground on pairs 1,4,7,10,13,16,19,22,25	
2	2	right		1	1	Right Ch. B	B1L			
3	3	BSI PB2	BSI 2	1	0	AES 2 BSI Automation In	B1L	3		
4	4	right		1	1	Right Ch. B	B1L			
5	5	BSI PB3	BSI 3	1	0	AES 3 BSI Automation In	B1L	5		
6	6	right		1	1	Right Ch. B	B1L			
7	7	BSI PB4	BSI 4	1	0	AES 4 BSI Automation In	B1L	6		
8	8	right		1	1	Right Ch. B	B1L			
9	9	ISDN	ISDN 1	1	0	AES 5 BSI Automation In	B1L	8		
10	10	right		1	1	Right Ch. B	B1L			
11	11	Phone1	Caller 1	0	0	AES 6 Phone 1 on Ch. A	B1L	9		
12	12	Phone2	Caller 2	0	1	Phone 2 on Ch. B	B1L			
13	13	InstRply	InstRply	1	0	AES 7 Instant replay	B1L	11		
14	14	{InstRply		1	1	Right Ch. B	B1L			
15	15			0	0		B1L	12		
16	16			0	0		B1L			
17	17	MIC 1	MIC 1	1	0	Analog 1	B1R	27	Analog Block - single (mono) audio per pair Ground on pairs 26,29,32,35,38,41,44,47,50	
18	18	MIC 2	MIC 2	1	1	Analog 2	B1R			28
19	19	MIC 3	MIC 3	1	0	Analog 3	B1R			30
20	20	MIC 4	MIC 4	1	1	Analog 4	B1R			31
21	21	MIC 5	MIC 5	1	0	Analog 5	B1R			33
22	22	MIC 6	MIC 6	1	1	Analog 6	B1R			34
23	23	Vox Pro	Vox Pro	1	0	Analog 7 Vox Pro Input	B1R			36
24	24			1	1	Analog 8 Right Channel	B1R			37
25	25	CD 1	CD 1	1	0	Analog 9 CD 1 In	B1R			39
26	26	right		1	1	Analog 10 Right Ch.	B1R			40
27	27	CD 2	CD 2	1	0	Analog 11 CD 2 In	B1R			42
28	28	right		1	1	Analog 12 Right Ch.	B1R			43
29	29	CD 3	CD 3	1	0	Analog 13 CD 3 In	B1R			45
30	30	right		1	1	Analog 14 Right Ch.	B1R			46
31	31	CD 4	CD 4	1	0	Analog 15 CD 4 In	B1R			48
32	32	right		1	1	Analog 16 Right Ch.	B1R			49

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Opto Designation Map

Opto Chan Num	Module Opto Num	Name 8 characters max	Notes 256 character max	Type	Salvo	Input	Output	Relay	Block and Side	Krone Pair number
0	0	Undef	Undefined	0						
	1	KRL	F1-S1 RIOLink: CHA Seacrest							
1	1			0					B3L	2
2	2			0					B3L	3
3	3			0					B3L	5
4	4			0					B3L	6
5	5			0					B3L	8
6	6			0					B3L	9
7	7			0					B3L	11
8	8			0					B3L	12
9	9			0					B3L	14
10	10			0					B3L	15
11	11			0					B3L	17
12	12			0					B3L	18
13	13			0					B3L	20
14	14			0					B3L	21
15	15			0					B3L	23
16	16			0					B3L	24
17	17		<i>virtual opto, not physical</i>	0						
18	18		<i>virtual opto, not physical</i>	0						
19	19		<i>virtual opto, not physical</i>	0						
20	20		<i>virtual opto, not physical</i>	0						
21	21		<i>virtual opto, not physical</i>	0						
22	22		<i>virtual opto, not physical</i>	0						
23	23		<i>virtual opto, not physical</i>	0						
24	24		<i>virtual opto, not physical</i>	0						
25	25		<i>virtual opto, not physical</i>	0						
26	26		<i>virtual opto, not physical</i>	0						
27	27		<i>virtual opto, not physical</i>	0						
28	28		<i>virtual opto, not physical</i>	0						
29	29		<i>virtual opto, not physical</i>	0						
30	30		<i>virtual opto, not physical</i>	0						
31	31		<i>virtual opto, not physical</i>	0						
32	32		<i>virtual opto, not physical</i>	0						

Opto Block - +5 and Ground on pairs 1,4,7,10,13,16,19,22,25

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Relay Designation Map

Relay Chan Num	Module Relay Num	Name 8 characters max	Notes 256 character max	Block and Side	Krone Pair number	
0	0	Undef	Undefined			
	1	KRL	F1-S1 RIOLink: CHA Seacrest			
1	1	A Timer+	start	B3R	27	Relay Block - N.O. Closure per pair Ground on pairs 26,29,32,35,38,41,44,47,50
2	2			B3R	28	
3	3			B3R	30	
4	4	A VxP+	VxPro play from cue	B3R	31	
5	5	A VxP-	Vxpro stop	B3R	33	
6	6			B3R	34	
7	7			B3R	36	
8	8			B3R	37	
9	9			B3R	39	
10	10			B3R	40	
11	11			B3R	42	
12	12			B3R	43	
13	13			B3R	45	
14	14			B3R	46	
15	15			B3R	48	
16	16	A Onair		B3R	49	
17	17		virtual relay, not physical			
18	18		virtual relay, not physical			
19	19		virtual relay, not physical			
20	20		virtual relay, not physical			
21	21		virtual relay, not physical			
22	22		virtual relay, not physical			
23	23		virtual relay, not physical			
24	24		virtual relay, not physical			
25	25		virtual relay, not physical			
26	26		virtual relay, not physical			
27	27		virtual relay, not physical			
28	28		virtual relay, not physical			
29	29		virtual relay, not physical			
30	30		virtual relay, not physical			
31	31		virtual relay, not physical			
32	32		virtual relay, not physical			