SAS Console System Installation Guide

Rubicon – RubiconSL – Mclass

Revised March 16, 2010

Installing and Configuring Standalone (no 32kd) Console Systems

SECTION 1 – Overview and PC (configuration) Software installation

SAS consoles can operate as part of a large interconnected network of router resources, with one or two RIOs per console, each connected back to a 32kD frame via RioLink, sharing management functions and resources between all RIOs, input cards, output cards, and connected 32kD mainframes. Systems surpassing 4000 input and 4000 output channels can be supported in this manner. For smaller systems that do not need to share resources among all ins and outs, single or dual RIO console systems can operate independently with the same features and capabilities as 32kD based systems. In plants where more than one of these "standalone" console systems are installed, shared sources are wired to each console system just like they were in legacy systems – paralleled or fed from distribution amplifiers.

This document describes installation of Rubicon, RubiconSL, and M-Class console systems that are not integrated into a 32KD system.

Where a 32kD system is not available to integrate multiple RIOs into a single system, the RIOs act as mini-32kD frames. There are two basic flavors of RIO standalone console systems: Single RIO and Dual-RIO. In a single RIO console system, one console (or potentially two small, simple consoles) connects to one RIO – all of its audio ins and outs, optos, relays, and control ports are provided by the RIO.

In a Dual-Rio system two RIOs are connected together using a Cat5 crossover cable (or fiber option for longer than 100m cable distances between RIOs) connected to each unit's RIO CAT5 port. One RIO is the primary unit and one is the expansion unit. The only physical difference between the two is a programming jumper on the expansion RIO. Dual RIO systems can support two consoles (potentially more if the consoles are small/simple) or one console with additional ins and outs. The primary RIO is typically installed in the same room as the console to minimize room to room wiring; while the expansion RIO can either be in the same location or some other location – another console's room or a centralized wiring area / rack-room. Each RIO's sources, optos and relays are available on the other RIO.

## Installing and Configuring Standalone (no 32kd) Console Systems

SINGLE RIO CONSOLE SYSTEMS
The simplest installation is a single console on a single RIO. All of the console's ins and outs are provided by the RIO. The RIO is also connected (full-time or as needed) to a Router Control PC for configuration/management and/or to facilitate PC-based SAS automation functions which we will get into later. Multiple RIOs (and therefore consoles) can be connected to the same Router Control PC; the software's architecture makes it easy to organize and manage the independent RIOs' configurations.

The Router Control PC
The router control PC can manage multiple systems, small or large, by having multiple RS232 or TCP/IP connections - one to each RIO (or Frame for 32kD-based systems). This PC should be a reasonably modern PC with at least one RS232 serial port. We recommend a Windows XP (SP2) machine with a P4 or better, 1G or RAM, and at least 10 G of free hard-drive space. If more than one RIO or 32kD will be connected, additional horsepower and memory are recommended.

There are two main pieces of software that need to be installed on your router control PC for management and configuration: the Router Control Software, which is the user interface for configuring and managing all of the SAS resources in your plant; and the Server Module software, one of which is installed for each RIO in your plant.
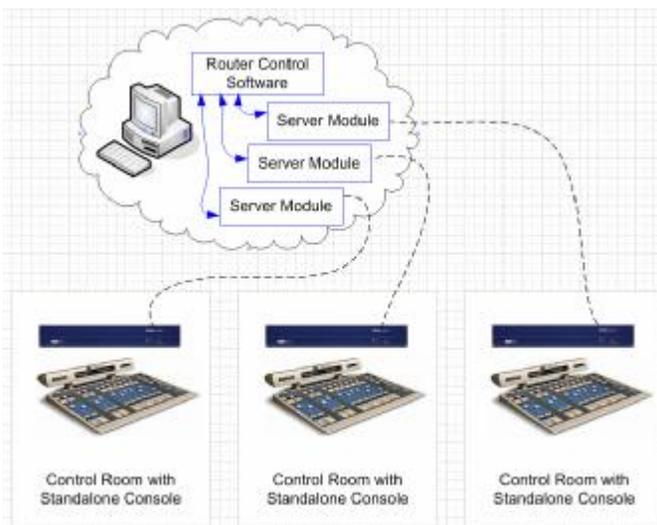
The Server Module provides for serial or TCP/IP communication between the RIO and the Router Control Software. If you have three single-RIO systems being managed by the Router Control Software, you will have one instance of the Router Control Software and three instances of the Server Module Software installed on your Router Control PC.

RS232 Serial Connection
A straight-through db-9 serial cable (only pins 2,3, and 5 matter) connects the RIO's back-panel DB9M connector (labeled J1702 RS232 port A) to an available COM port on the Router Control PC. If you want to eventually use the TCP/IP method of communication between the RIO and the Router Control PC, you have to start out with a serial connection (so you can get into the RIO config and set the IP address) then change to TCP/IP.

Installing and Configuring Standalone (no 32kd) Console Systems

Software Installation and SETUP

The server module coordinates multiple devices "talking" to the Router at one time, including our free SoftPanels and the Router Control Software - it also logs system events and allows for differing PC and Router hardware configurations.

The Router Control Software is the graphical system gateway that allows you to see everything happening in your system, directly control crosspoint routes, edit system, console, and module configurations, change source or destination attributes, and set up extremely powerful router automation events.

A large percentage of SAS customers that have a dedicated Router Control PC also have or install VPN access so that SAS can access the Router Control PC remotely when requested. In this way we can help you with configuration changes, custom features, complicated automation events, or troubleshooting if you encounter a problem. XP's built-in Remote Desktop feature, or VNC programs like UltraVNC are excellent choices.

The following guide will describe the process of installing and setting up the Sever Module, RCS software, and Router Automation module for connection to your RIO(s). Once these three main software pieces are installed, the guide will show you how to duplicate the server module application for multiple RIOs.

Pre-Installation

System requirements

IBM compatible PC with at least a Pentium 4 processor (1GHz or greater)
At least 256 MB RAM. 512M recommended.
Minimum 100 MB available hard disk space.
Windows 2000 SP3 or XP SP1 or higher operating system.
RS-232 connection to the SAS Routing Switcher (57600 Baud).
Network adapter card communicating on a network.

Note: It is recommended that the Computer running the Server Module have a fixed IP address if the Router Control Software or Softpanels will be run on a remote computer.
Note: If Windows 2000 is used, AT LEAST Service Pack 3 for Windows 2000 must be installed.

Installing and Configuring Standalone (xx32kd) Console Systems

SAS Server Module
<u>Installation</u>

CD:

Insert the CD containing the SAS Server Module into the CD Drive. Using Windows Explorer, go to the SAS Server Module directory on the CD and run setup.exe and follow the prompts on the screen.

Default choices are recommended. If you have certain VB components on your Router Control PC, you may get one or more version conflict notices. It's no big deal, in the vast majority of cases, selecting yes for each notice is the right choice; this will keep your existing components instead of over-writing them.

<u>Getting Started</u>

Once the Server Module has been installed make sure the first available COM port of the Router Control PC is connected to the RIO via the COM A (J1702) port on the RIO's back panel.

Start the Server Module and select setup from the File menu. Select the Serial Port that is connected to the RIO. Set the IP Port number to 1250 for the first RIO, 1260 for the second, 1270 for the third, and so on. Set the Router Type to "Rio Grande."

If SAS Softpanels are to be used with the Server Module, click on the More button and check the Soft Panel Mode box.

Once Ok is selected from the Setup screen "Switcher Connection" should appear in the Command History Window followed by several messages received from the SAS Switcher.

The SAS Server Module must be running and connected to the SAS Routing Switcher (RIO) in order to control the Switcher with SAS Windows RCS, SAS Automation engine or any SAS SoftPanels. If the Server module is not running and connected to the RIO, no PC control or configuration of the RIO is possible.

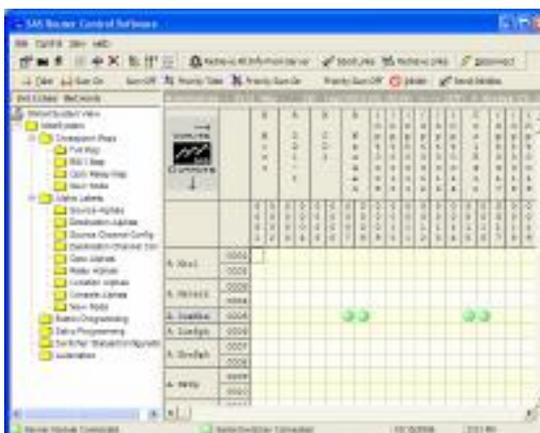# Installing and Configuring Standalone (no 32kd) Console Systems

SAS Windows Router Control

Software Installation

System requirements

Same as IP Server Module

Installation

CD:

Insert the CD containing the SAS Windows Router Control Software into the CD Drive. Using Windows Explorer, go to the SAS Windows RCS directory on the CD and run setup.exe and follow the prompts on the screen.

Getting Started

Once the Windows RCS has been installed make sure the SAS Server Module is running and connected to the Switcher.

Start the Windows RCS with the default user name and password. Username is SASDefault

You will be prompted for the location and name of the Program Database. It is recommended that this database be kept in the directory that the Windows RCS was installed in.

This Program Database holds the location of the Switcher databases, Users, and Folder definitions.

It is recommended that you add a user to the user database, although the default user name and password may not be changed or deleted. This can be done by selecting the View menu and then selecting User database or selecting Edit/View User Database from the toolbar.

The first time the Windows RCS is run, it will ask if you would like to define a switcher database. Select Yes.

A switcher database will need to be created for each switcher to be controlled by the Windows RCS. For now we'll just set up the Switcher Database for the first RIO, the one you already installed the Server Module for. Select the type of switcher (Rio Grand), size of the switcher (32 sources, 32 destination), the IP Address (use 127.0.0.1 - this is the "loopback IP" used for communications within the same computer) and IP Port of the Server Module (the IP Port must match that selected in the Setup Screen of the Server Module – 1250 for the first RIO). Next click the file button `File` and enter a name for the Switcher database that uses the RIO identifier (be sure to append the name with

Installing and Configuring Standalone (non-32bit) Console System

.mdb), then click the Open button
[Open] .   Now click the Save button
to exit the Switcher Definition screen.

Once the new Switcher definition is
saved, you will be given the option of
allowing the RCS to setup up default
folders. Select Ok.

The Windows RCS will create a set of
default folders and attempt to connect
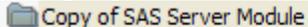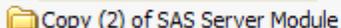to the Server Module.

Since we're not quite done installing software components – exit the Router Control
Software. Then shut down the Server module you've already installed.

If your RCS installation will manage/configure more than one RIO, we'll need to have a
Server module running for each one before we can manage or connect to them.

Use windows explorer to browse to the Program files folder on your main hard-drive.
Click once on the SAS Server Module folder to select it; hit CTRL-C to copy the folder .
then hit CTRL-V to paste a copy of the folder into the Program Files folder.
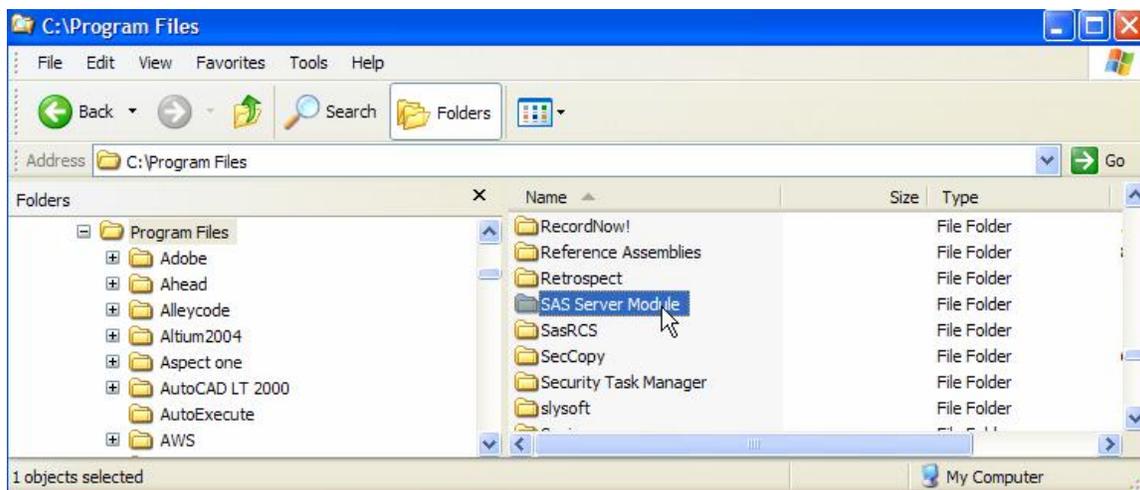
Repeat the CTRL-V until you have the same number of Server Module folders as you
have standalone RIOs. The copied/pasted folders will probably show up at the bottom of
your program files list (out of alphabetical order),

| Copy of SAS Server Module | File Folder |
| Copy (2) of SAS Server Module | File Folder |

so find them and rename the copies and the original Server Module Folder to include a
short RIO name or identifier.

Installing and Configuring Standalone (no 32kd) Console Systems

SAS Server Module RIO WSKY CR	File Folder
SAS Server Module RIO WGGG CR	File Folder
SAS Server Module RIO Prod A	File Folder

Manually setting up the server modules.
Now open the first folder and find the file named tcpserve.ini. Open tcpserve.ini with notepad. The first few lines are all that you'll want to change.
[CONFIGURATION]
Title=WGGG CR
Serial Port=1
Baud Rate=57600
TCP/IP Port=1250
Server Mode=Serial Mode
Switcher IP Address=127.0.0.1

Set Title to your RIO indentifier. (like WGGG CR)
Set the serial port to the COM port number (on the PC) that connects to this RIO.
The TCP/IP port should be 1250 for the first RIO, 1260 for the second, 1270 for the third…
Leave everything else the same. Save the file.
Right-click on the SasServer.exe file and select Send to > Desktop (create shortcut)

On your desktop, change the name of the shortcut to indicate the RIO identifier.

Go back and repeat the **Manually setting up the server modules** instructions for each additional Server Module folder.

Now that the Server Modules are preconfigured for the com port / RIO they'll be talking to, we can start them up using the shortcuts you created on your desktop. For now just start the first (COM1) Server Module.
It should look something like this but you should see plenty of data scrolling through the Command History display. If the Command History display is blank, check your serial cable wiring. You can also click on the File menu and select settings to verify the validity of the server module settings (Com port, router type, etc).
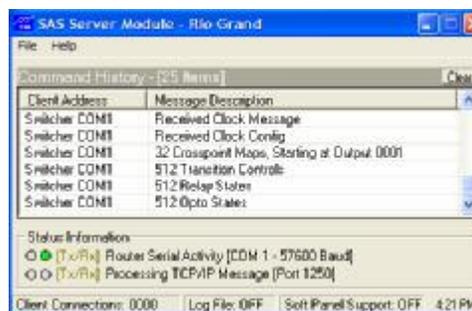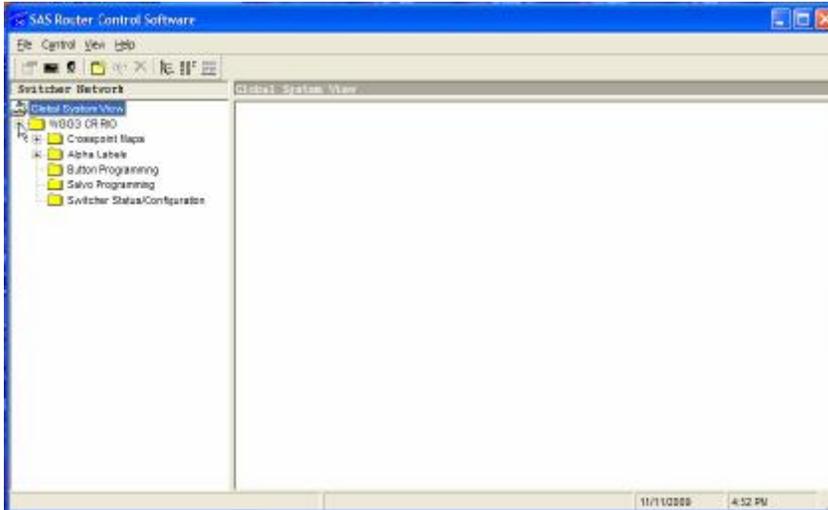
If the Command History window shows data, go ahead and start the other server modules one at a time until they are all started and functioning properly.

Installing and Configuring Standalone (no 32kd) Console Systems

Setting up additional Switcher Databases

Start the Router Control Software

The next step is to create switcher databases for any additional ROPs/server modules in your system. Click on the View menu and select View Switcher Database.

This familiar screen should pop up.

Click the New button at bottom-center and enter the information for the next RIO/Server Module.

Identify the RIO being set up in the name field, set the number of sources to 32, the number of destinations to 32, the SAS Server IPPort to 1260 (or the next value you used) and set the switcher Type to SAS RIO Grand.

Click the File button. Type in the filename for the mdb file to be created (in our example it would be something like WSKY CR RIO.mdb – then click Open. Finally Click Save and Yes for creating default folders.

Installing and Configuring Standalone (no 32kd) Console Systems

Repeat creating new switcher databases until you have one for each RIO/server module, then press Quit to exit the View Switcher Database screen.

You can click on the little plus sign beside each RIO folder to show the contents of the folder.
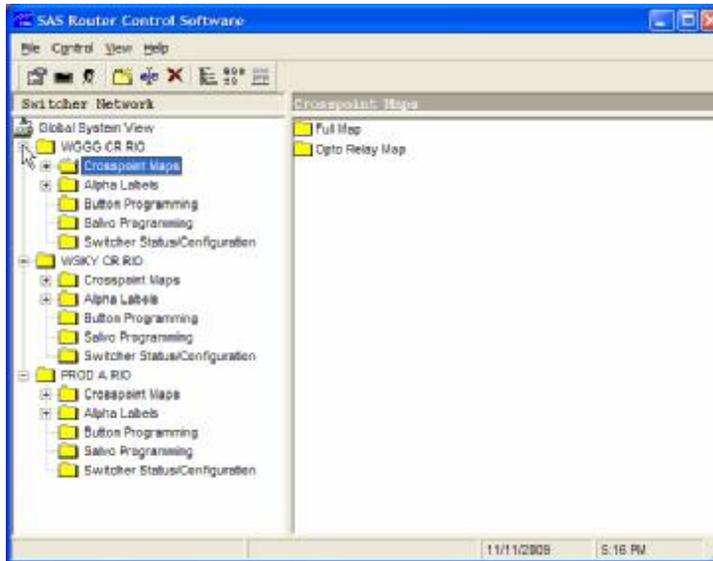
Your software installation is now complete!

Now that your RCS and Server Modules are set up and talking, it's time to begin configuring your consoles.

The first step is to get the basic wiring done.
The next two sections describe recommended wiring practices for Rubicon/RubiconSL consoles and MClass consoles respectively.

Installing and Configuring Standalone (no 32kd) Console Systems

Section 2 – Rubicon / RubiconSL Console Wiring

The Rubicon and RubiconSL consoles are connected to the RIO(s) identically, and they have similar i/o resource requirements and options. Rubicon and RubconSL consoles are typically custom configured for your specific application with the help of SAS engineers. The sample configuration and wiring layout for the RubiconSL console in following section is just one of many ways to configure and wire one of these very flexible console systems; in practice, your setup may be different due to the wide variety of possible I/O card loading, the number of modules (and therefore sources) in your system, and the number of outputs your system uses, including monitor outs, headphone outs, console buss outputs, mix-minus busses, and general purpose outputs.
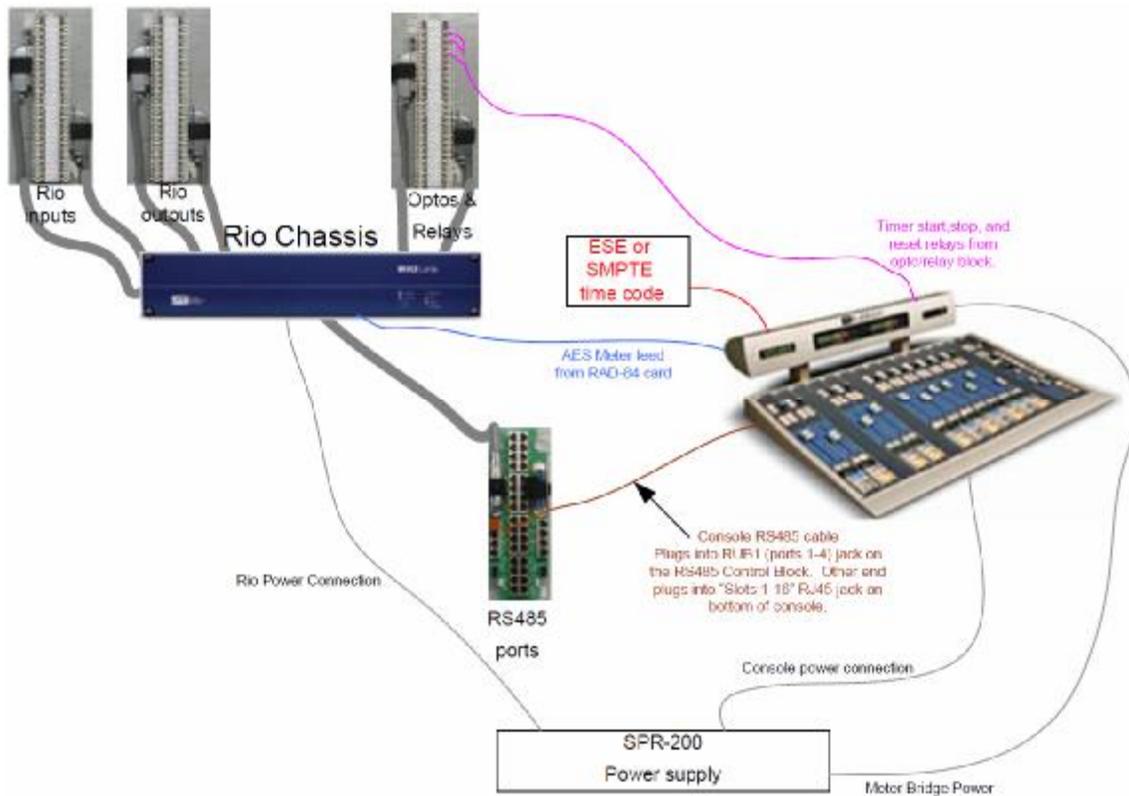

Figure 1. Simplified block diagram for a single-RIO console

Installing and Configuring Standalone (no 32kd) Console Systems
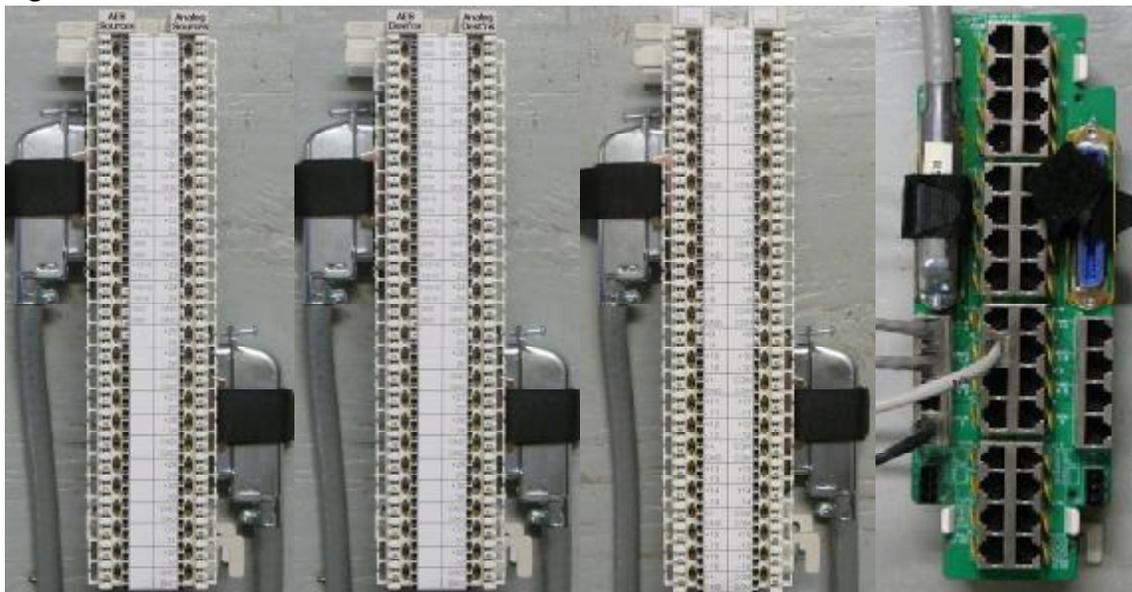

Figure 2. RIO rear panel connections.

The high connection density of the RIO (and 32KD I/O cards) demands an efficient connectorization scheme. RIO audio connections, Optos, Relays, and RS485 control ports are brought out on RJ-21 style (Centronics 50) high-desity connectors. High-quality 25-pair cabling connects the RIO to SAS customized Krone blocks, which also have RJ-21 style connectors. This high-density wiring system maintains Category 5 characteristics all the way to the punch terminals, ensuring maximum performance and noise immunity. One of the benefits of Krone blocks is the built-in patch-bay feature, allowing you to directly patch two connections together if required for bypassing gear or troubleshooting.

Adaptors and patch cables of various lengths are available from ADC/Krone dealers or directly from SAS.

In addition to the Krone blocks, SAS offers RJ-45 wiring options, old-school '66' blocks, or direct-wire to the RJ-21 connectors.

Installing and Configuring Standalone (no 32kd) Console Systems

Figure 3. Connection blocks

AES and Analog Sources & Destinations Opto/Relay RS485

Each RIO has 7 Centronics-50 pin (Rj-21 style) connectors for audio and control I/O. Supplied cables connect the RIOs to the Krone blocks and 89D2132 block.

Krone Block1:
Audio INPUTS to the RIO. This Audio Source block is where playback devices or other audio sources are connected. Connect the lower input card connector (inputs 1-16) on the RIO rear panel to the left connector on the block; the upper input card connector (inputs 17-32) on the RIO goes to the right connector on the Block. Be sure to cinch down the Velcro strain relief belts so the Centronics connectors are kept tight.   In SAS-speak all inputs to the system are called sources. Typically the RIO is set up with half analog and half AES for audio I/O. AES sources 1-16 go on the left; each AES connection represents two mono-equivalent channels which can be configured as stereo or independent mono signals in the system.
The Analog sources, 17-32, connect to the right side of the block. Stereo sources are connected to adjacent channels, left on the lower-numbered odd channel.

Krone Block 2:
The Audio Destinations block is where you connect equipment that requires an audio feed from the console. The layout is the same as the input block; AES on the left, analog on the right. Connect the lower output card connector (outputs 1-16) on the RIO to left connector on the block, and the upper output card connector (outputs 17-32) on the RIO to right connector on the Block. In SAS-speak all outputs from the system are called destinations.
Note that the RAD-84 Analog Output Card on the RIO has 16 (mono equiv.) analog outputs PLUS four auxiliary AES outputs (on the RJ-45 jack) that are copies of the card's first eight mono outs. These first four stereo outputs on the card are often used dual-duty, for buses and meters.

Installing and Configuring Standalone (no 32kd) Console Systems

The RIO has 16 Optos and 16 Relays for interfacing with user equipment logic. The Optos cable connects to the left side of the block and the Relays cable connects to the right side. The Opto side of the block has a +5V logic supply brought out along with ground so you can activate the optos conveniently. The relays are rated at 10W (30V max), perfect for controlling external gear or driving a Solid State relay for your On-Air light circuit.

SAS Consoles and Control Panels communicate with the RIO via RS485. the RIO has 16 RS485 ports. Each port can handle four devices. Each console module is a device, so a 16 slot console connects to the RIO with four RS485 ports. The 89D-2132 Control Fanout Block shown above makes it convenient to connect RS485 ports to your console and other SAS devices. Connect the RS485 connector on RIO1 to the left side of the 89D2132 block. A "line-lump" power supply is available for the 89D-2132 block – If you ordered one, connect it to the power (3 pin phoenix) connection at the lower left corner.

Installing and Configuring Standalone (no 32kd) Console Systems

POWER: The typical configuration uses two Rack Mounted power supplies for redundant power to the RIO (or both RIOs in a dual-RIO system), the Console "tub," and the Meter bridge. The meter bridge uses a smaller connector so a furniture pass-through hole can be hidden by the left meter leg. Your power cabling includes two cables for the meter bridge and four cables for the RIO and console tub. Since each device has two power inputs, you'll use one power supply to feed the 'A' power inputs of each device and the other to feed the 'B' power inputs. There's no priority implied by A & B, just make sure they go to different supplies or you'll negate the power redundancy feature.

Standard DC Power Cable

Meter Bridge Power Cable

Console and Meter Bridge mounting:
Suggested hole patterns for the console tub and the meter bridge are at the end of this wiring guide. The meter bridge comes with two rj45 couplers. One goes on the blue cable (audio feed to meters), and the other goes on the pink cable (timer control).

Audio for driving the meters typically comes from one of two places:
   a) four AES outputs from a RIO Digital Output Card (RDO). One end of a typical straight-through (TIA568B-style) patch cable plugs into the coupler on the Meter Bridge's Blue Cat5 cable; the other end of the cat5 patch cable is cut off and the pairs are punched down using the following color code: Wite-Orange/Orange feeds Meter1, Green feeds Meter2, Blue feeds Meter3, and Brown feeds Meter4.
   OR
   b) We often configure the RAD-84 auxiliary Digital Audio Outputs to directly feed the meters. In this case a straight-through (TIA568B-style) patch cable plugs into the coupler on the Meter Bridge's Blue Cat5 cable; the other end of the cat5 patch cable plugs directly into the RAD-84's Digital Audio (RJ-45) port.

Timer Start, Stop, and Reset relays (from your RIO) connect to the Orange, Green, and Blue pairs respectively on the Pink Cat5 cable coming from the Meter Bridge.

ESE or SMPTE timecode connects to the Gray single-pair cable from the Meter Bridge.

Check your specific System documentation / Configuration information to determine your specific connections. Contact us if you need assistance.

Installing and Configuring Standalone (no 32kd) Console Systems

Other RIO connections:
RIO1 has dedicated outputs designed to feed the (blue cable) meter bridge audio inputs. You may have already connected a Cat5 jumper (straight-through type) to the RAD-84 Digital jack on the lower OUTPUT card of RIO1 – this jumper gets plugged onto the RJ45 coupler on the blue meter-bridge cable.

If your RIO is part of a 32kD system it will connect back to the KRL card in the 32KD mainframe using EITHER a duplex SC fiber connection OR a CAT5 cable. The RIO Fiber transceiver and the RIO CAT5 connections are right next to each other, near the bottom left corner of the RIO as viewed from the back.

NOTE that the RIO comes from the factory with a Grey-hooded DB25 male plugged into J1502 – this connector has a jumper installed that sets the RIO to match the system clock of 44.1kHz. If your RIO is part of a 32kD system, the RIO's system clock must match the 32kD system clock setting.
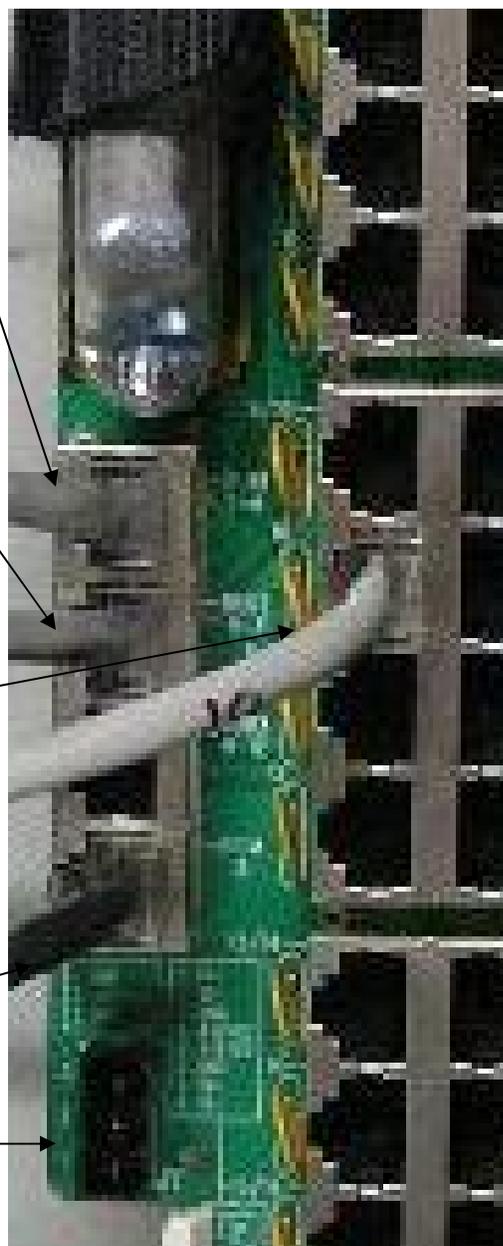
RS485 connections:
Each RS485 port from the RIO supports 4 slots on the console, so a 32 slot console wil require 8 RS485 ports. Specifically the first eight RS485 ports on RIO1. These RS 485 ports are conveniently connected to the console tub using two Straight-thru CAT5 jumpers. The "Slots 1-16" jack on the bottom of the console tub connects to the RJ45 jack labeled "RUBI 1-4" on the left-hand side of the 89D2132 block. The "Slots 17-32" jack on the bottom of the console tub connects to the RJ45 jack labeled "RUBI 5-8" on the left-hand side of the 89D2132 block.

The RS485 port for optional MIC control panels is the 89D-2132 jack labeled "Port 10." If you've connected the power supply to the 89D-2132 block, all you have to do to wire the mic control panels is set the dipswitches for proper addressing and daisy-chain the Port 10 connection to up to four mic control panels. Additional "turret" panels can be wired similarly to subsequent ports.

The RS485 port for an optional console-mounted intercom panel is provided via CAT5 cable as well. On the bottom of the console, you'll find an ethercon connector (bulkhead RJ45 jack) labeled AUX – run a cat5 patch-cable from this jack to the 89D-2132 jack labeled "RICM-16."

89D-2132 power connection.

Installing and Configuring Standalone (no 32kd) Console Systems

DIP switches on MIC control Panels:
The panels used for talent / guest control of the mic positions should be set, in order, to addresses 0,1,2, and 3.
DipSwitch 1 (DS1) on each turret panel sets the addresses and power options for the modules. Switch positions 1 and 2 set the address, 7 and 8 set the pass-thru power mode. 3-6 should be OFF.

Panel	pos1, pos2	pos7, pos8
Addr 0	OFF, OFF	ON , ON
Addr 1	ON , OFF	ON , ON
Addr 2	OFF, ON	ON , ON
Addr 3	ON , ON	ON , ON

The RS485 cat5 cable connects to the 89D-2132 block as shown above, and is connected in a daisy-chain fashion to up to three more panels. If you have more than four panels, contact us for additional features of this wiring scheme that you can use to make the installation job a snap.

Installing and Configuring Standalone (no 32kd) Console Systems

Sample RIO Configuration Data (be sure to use YOUR data for installation.
Audio Sources feeding inputs of the Router/RIO.
Figure 4. Source Data

Input Chan Num	Module Chan Num	Chan Label 8 character max	LocalLabel 8 character max	Linked 0=Mono, 1=Stereo	Hidden 0=No, 1=Yes	Notes 256 character max	Block and Side	Krone Pair number
		1	KRL	0	1	F1-S1 RIOLink: A Control Room		
1	1	A Hyb1	Phone 1	0		Caller audio out	B1L	2
2	2	A Hyb2	Phone 2	0		Caller audio out	B1L	2
3	3	A PC 1	PC Play1	1		PC Playback	B1L	3
4	4	(A PC1	(pc1	1	1		B1L	3
5	5	A PC 2	PC Play2	1		PC Playback	B1L	5
6	6	(A PC2	(pc2	1	1		B1L	5
7	7	A PC 3	PC Play3	1		PC Playback	B1L	6
8	8	(A PC3	(pc3	1	1		B1L	6
9	9	A PC 4	PC Play4	1		PC Playback	B1L	8
10	10	(A PC4	(pc4	1	1		B1L	8
11	11	A ISDN1	ISDN 1	1		Inbound ISDN audio	B1L	9
12	12	(A ISDN1	(isdn1	1	1		B1L	9
13	13	A CD1	CD 1	1		CD playback	B1L	11
14	14	(A CD1	(cd1	1	1		B1L	11
15	15	A CD2	CD 2	1		CD playback	B1L	12
16	16	(A CD2	(cd2	1	1		B1L	12
17	17	A OpMic	OP MIC	1		MIC1 - Operator	B1R	27
18	18	A Mic2	MIC 2	1	1	MIC Audio	B1R	28
19	19	A Mic3	MIC 3	1		MIC Audio	B1R	30
20	20	A Mic4	MIC 4	1	1	MIC Audio	B1R	31
21	21	A Tivo	TIVO	1		Tivo playback audio	B1R	33
22	22	(A Tivo	(tivo	1	1		B1R	34
23	23	A AuxIn	Aux In	1		Auxiliary in audio	B1R	36
24	24	(A Auxin	(auxin	1	1		B1R	37
25	25	B PGM	B PGM	1		PGM bus from other CR	B1R	39
26	26	(B PGM	(B PGM	1	1		B1R	40
27	27	SAT 1	SAT 1	0		mono satellite source	B1R	42
28	28	SAT 2	SAT 2	0	1	mono satellite source	B1R	43
29	29	SAT 3	SAT 3	1		Stereo Sat source	B1R	45
30	30	(SAT3	(SAT3	1	1		B1R	46
31	31	AirTuner	AirTuner	1		ON-Air Tuner feed (confidence)	B1R	48
32	32	(AirTunr	(AirTunr	1	1		B1R	49

Source Channels 1-16 are AES inputs to the system, eight stereo or dual-mono AES sources –
Channels 17-32 are analog inputs to the system, usually a mix of mono and stereo sources.
Note that stereo resources must be on sequential channels with left on an odd channel number and
right on the next (even) channel number.

The Krone blocks have numbered pairs from 1-25 on the left side of the block and 26-50
on the right. The block side and pair numbers for each source are included in the chart
above.

For Example, the AES connection for inbound ISDN audio is on inputs 11/12, which is punched
down to Audio Block 1 (inputs) Left side, on the ninth pair of the block.

The analog connection for MIC 3 (a mono, line-level input from a pre-amp) is connected to
Audio Block 1 Right side, on the fifth pair of the block.

Installing and Configuring Standalone (no 32kd) Console Systems

Figure 5. Destination Data

Output Chan Num	Module Chan Num	Chan Label *8 character max*	Local Label *8 character max*	Linked *0=None, 1=Stereo, 3=Fdrpr LN Sim*	Hidden *0=No, 1=Yes*	Notes *206 character max*	Type # *0=Router, 1=Program, 2=Audition, 3=Feed, 4=Aux, 5=Off-Line, 6=Record, 7=Utility, 12=Mix-Minus, 13=Cue*	Bus Type Name *calculated from #*	Block and Side	Krone Pair number
0	0	Undef	Undef			Undefined		Router		
	1		KRL			**F1-S1 RIOLink: A Control Room**				
1	1	A Hyb1>	A Hyb1>	3	0	mix minus feed to Hybrid	12	Mix-Minus	B2L	2
2	2	A Hyb2>	A Hyb2>	3	0	mix minus feed to Hybrid	12	Mix-Minus	B2L	2
3	3	A PROC>	A PROC>	1	1	AES out for processing chain (xpt dsplb17)		Router	B2L	3
4	4	(A PROC>	(A PROC>	1	1			Router	B2L	3
5	5	A REC	A REC	1		REC bus feed to recording devices	7	Utility	B2L	5
6	6	(A REC	(A REC	1	1		7	Utility	B2L	5
7	7				1			Router	B2L	6
8	8				1			Router	B2L	6
9	9	A ISDN1>	A ISDN1>	1	0	mix minus feed to ISDN unit	12	Mix-Minus	B2L	8
10	10	(A ISDN1>	(A ISDN1>	1	1		12	Mix-Minus	B2L	8
11	11	A PCREC>	A PCREC>	1	0	AES out for PC Rec (xpt dsplb23)		Router	B2L	9
12	12	(A Pcre	(A Pcre	1	1			Router	B2L	9
13	13	A OFFL	A OFFL	3	0	OFFLINE bus		Router	B2L	11
14	14	A TBbus	A TBbus	3	0	TalkBack Bus inbound to Operator (32kd)		Router	B2L	11
15	15	A CueMix	A CueMix	1	0	Cue mix bus		Router	B2L	12
16	16	(A Cuex	(A Cuex	1	1			Router	B2L	12
17	17	A PGM1	A PGM1	1		Main Pgm bus (RJ45 AES feed meter1	1	Program	B2R	27
18	18	(A PGM1	(A PGM1	1	1		1	Program	B2R	28
19	19	A Meter2	A Meter2	1		move to 17,19,21 or 23 for steerable meter	0	Router	B2R	30
20	20	(A Mtr2	(A Mtr2	1	1	(RJ45 AES output feeds steerable meter)	0	Router	B2R	31
21	21	A PGM2	A PGM2	1		PGM2 output	1	Program	B2R	33
22	22	(A PGM2	(A PGM2	1	1		1	Program	B2R	34
23	23				1			Router	B2R	36
24	24				1			Router	B2R	37
25	25	A MonSpk	A MonSpk	1		Feed to monitor amp/speakers	14	Speaker	B2R	39
26	26	(A MonSp	(A MonSp	1	1		14	Speaker	B2R	40
27	27	A CueSpk	A CueSpk	1		feed to cue amp/speakers	14	Speaker	B2R	42
28	28	(A CueSp	(A CueSp	1	1		14	Speaker	B2R	43
29	29	A OpHP	A OpHP	1		feed to operator Headphone amp	15	Headphone	B2R	45
30	30	(A OpHP	(A OpHP	1	1		15	Headphone	B2R	46
31	31	A GstHP	A GstHP	1		feed to guest HP amp	15	Headphone	B2R	48
32	32	(A GstHp	(A GstHp	1	1		15	Headphone	B2R	49

Destination Channels 1-16 are AES outputs from the system (eight stereo or dual mono AES outs) – Channels 17-32 are analog outputs from the system.

The Krone blocks have numbered pairs from 1-25 on the left side of the block and 26-50 on the right. The block side and pair numbers for each destination are included in the chart above.

For Example, the AES connection for outbound PC Record audio is on outputs 11/12, which is punched down to Block 2 (outputs) Left side, on the ninth pair of the block.

The analog connection for the cue speaker amp is connected to Block 2 Right side, on pairs 42 and 43, which are the seventeenth and eighteenth pairs on the right side of the block of the block for left and right respectively.
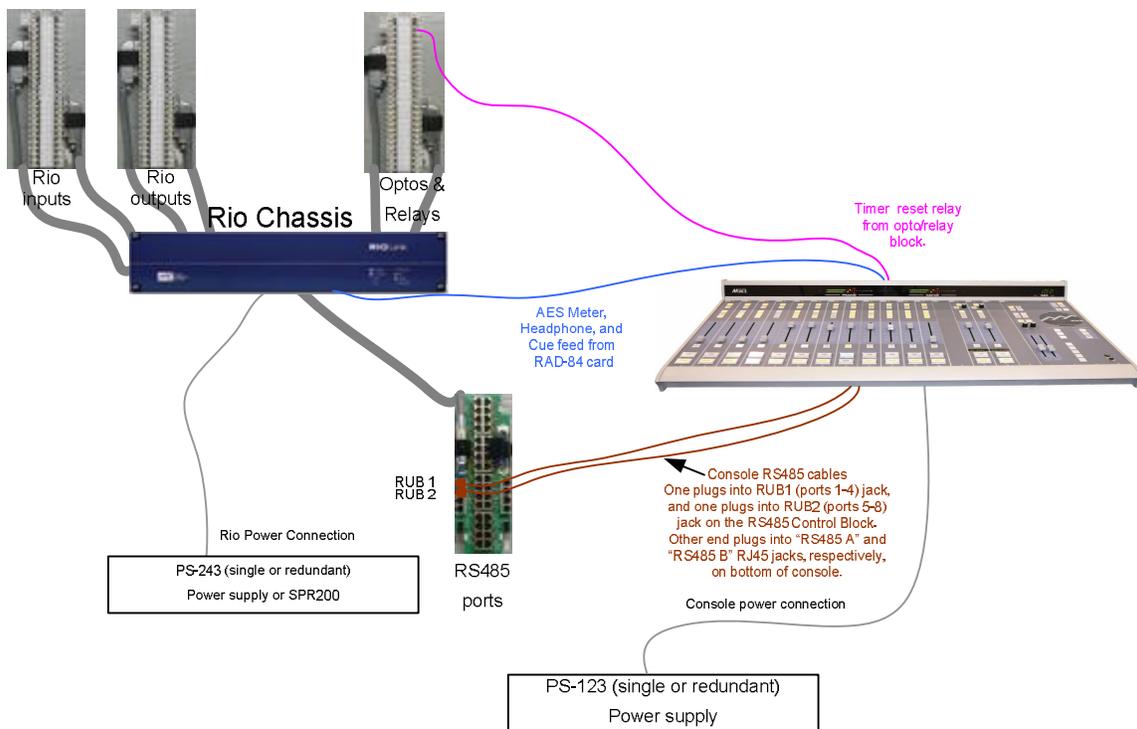
Installing and Configuring Standalone (no 32kd) Console Systems

Section 3 – MClass Console Wiring

The MClass console is typically pre-configured with a standard configuration to keep costs low – and the customer does any desired customization, with factory help available as needed.

The following section describes wiring for a typical factory-default MClass Configuration. This document describes the MClass 20.2 equipped with twelve A/B input faders, two "Flex" faders with source dial-up capability, a monitor and control module with built-in Headphone amp and Cue amp/speaker, two stereo level meters, and a built-in timer. Your console will come with a specific source and destination layout (documented with the console) that may differ slightly from what is presented here, but the basic wiring concepts will be the same.

Figure 1. Simplified block diagram of MClass to RIO wiring

Installing and Configuring Standalone (no 32kd) Console Systems
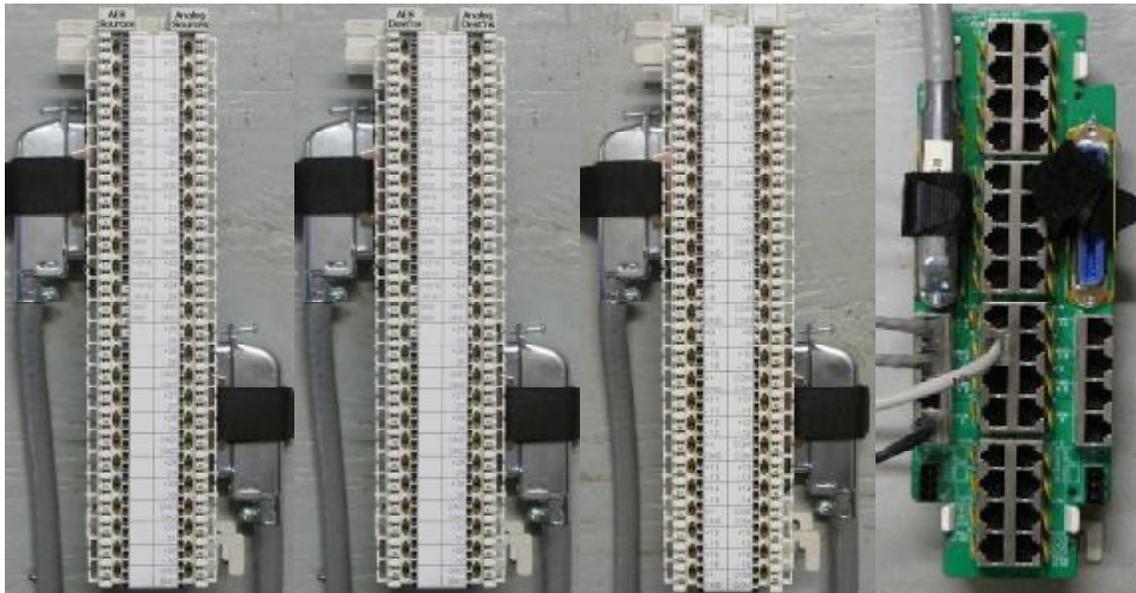

Figure 2. RIO rear panel connections.

The high connection density of the RIO (and 32KD I/O cards) demands an efficient connectorization scheme. RIO audio connections, Optos, Relays, and RS485 control ports are brought out on RJ-21 style (Centronics 50) high-desity connectors. High-quality 25-pair cabling connects the RIO to SAS customized Krone blocks, which also have RJ-21 style connectors. This high-density wiring system maintains Category 5 characteristics all the way to the punch terminals, ensuring maximum performance and noise immunity. One of the benefits of Krone blocks is the built-in patch-bay feature, allowing you to directly patch two connections together if required for bypassing gear or troubleshooting.

Adaptors and patch cables of various lengths are available from ADC/Krone dealers or directly from SAS.

In addition to the Krone blocks, SAS offers RJ-45 wiring options, old-school '66' blocks, or direct-wire to the RJ-21 connectors.

Installing and Configuring Standalone (no 32kd) Console Systems

Figure 3. Connection blocks

AES and Analog Sources & Destinations   Opto/Relay   RS485

Each RIO has 7 Centronics-50 pin (Rj-21 style) connectors for audio and control I/O. Supplied cables connect the RIOs to the Krone blocks and 89D2132 block.

Krone Block1:
Audio INPUTS to the RIO. This Audio Source block is where playback devices or other audio sources are connected. Connect the lower input card connector (inputs 1-16) on the RIO rear panel to the left connector on the block; the upper input card connector (inputs 17-32) on the RIO goes to the right connector on the Block. Be sure to cinch down the Velcro strain relief belts so the Centronics connectors are kept tight.   In SAS-speak all inputs to the system are called sources. Typically the RIO is set up with half analog and half AES for audio I/O. AES sources 1-16 go on the left; each AES connection represents two mono-equivalent channels which can be configured as stereo or independent mono signals in the system.
The Analog sources, 17-32, connect to the right side of the block. Stereo sources are connected to adjacent channels, left on the lower-numbered odd channel.

Krone Block 2:
The Audio Destinations block is where you connect equipment that requires an audio feed from the console. The layout is the same as the input block; AES on the left, analog on the right. Connect the lower output card connector (outputs 1-16) on the RIO to left connector on the block, and the upper output card connector (outputs 17-32) on the RIO to right connector on the Block. In SAS-speak all outputs from the system are called destinations.
Note that the RAD-84 Analog Output Card on the RIO has 16 (mono equiv.) analog outputs PLUS four auxiliary AES outputs (on the RJ-45 jack) that are copies of the card's first eight mono outs. These first four stereo outputs on the card are used to feed the MClass console's meters, headphones, and Cue connections.

Installing and Configuring Standalone (no 32kd) Console Systems

The RIO has 16 Optos and 16 Relays for interfacing with user equipment logic. The Optos cable connects to the left side of the block and the Relays cable connects to the right side. The Opto side of the block has a +5V logic supply brought out along with ground so you can activate the optos conveniently. The relays are rated at 10W (30V max), perfect for controlling external gear or driving a Solid State relay for your On-Air light circuit. Relay 1 is normally connected to the Timer restart function on the MClass console.

SAS Consoles and Control Panels communicate with the RIO via RS485. The RIO has 16 RS485 ports. Each port can handle four devices. Each console module is a device, so a 16 slot console connects to the RIO with four RS485 ports. The 89D-2132 Control Fanout Block shown above makes it convenient to connect RS485 ports to your console and other SAS devices. Connect the RS485 connector on RIO1 to the left side of the 89D2132 block. A "line-lump" power supply is available for the 89D-2132 block – If you ordered one, connect it to the power (3 pin phoenix) connection at the lower left corner.

Installing and Configuring Standalone (no 32kd) Console Systems

POWER: The typical configuration uses one power supply (or two for redundant power) for the RIO, and a different supply (or two for redundancy) for the MClass.
If you have redundant supplies you'll use one power supply to feed the 'A' power input of each device and the other to feed the 'B' power input. There's no priority implied by A & B. If practical feed one supply for each device on a different power bus than the other. (or one on UPS power and one on non-UPS power fed by a different breaker)

Standard DC Power Cable for RIO
(SPR200 Cable shown)

Standard Power Supply for MClass
Two can be used for redundancy

Console mounting:
The MClass Console "tub" is designed to be installed on any flat surface, with or without a cutout in the furniture. If you decide to use a cutout in the furniture, the appendix at the end of this guide has cutout dimensions. The lower aluminum side panel (held on by two screws on each side) is removed when "sinking" the console into a furniture cutout.

The MClass Console features a very simplified scheme for connecting it to the RIO resources it needs to operate. Straight-through CAT5 patch cables deliver RS485 control ports and AES audio (for the built-in meters, Operator Headphone amp, and Cue/Talkback speaker) from the RIO to the Console.

Check your specific System documentation / Configuration information to determine your specific connections. Contact us if you need assistance.

Installing and Configuring Standalone (no 32kd) Console Systems

Other RIO connections:

If your RIO is part of a 32kD system it will connect back to the KRL card in the 32KD mainframe using EITHER a duplex SC fiber connection OR a CAT5 cable. The RIO Fiber transceiver and the RIO CAT5 connections are right next to each other, near the bottom left corner of the RIO as viewed from the back.

NOTE that the RIO comes from the factory with a Grey-hooded DB25 male plugged into J1502 – this connector has a jumper installed that sets the RIO to match the system clock of 44.1kHz. If your RIO is part of a 32kD system, the RIO's system clock must match the 32kD system clock setting.
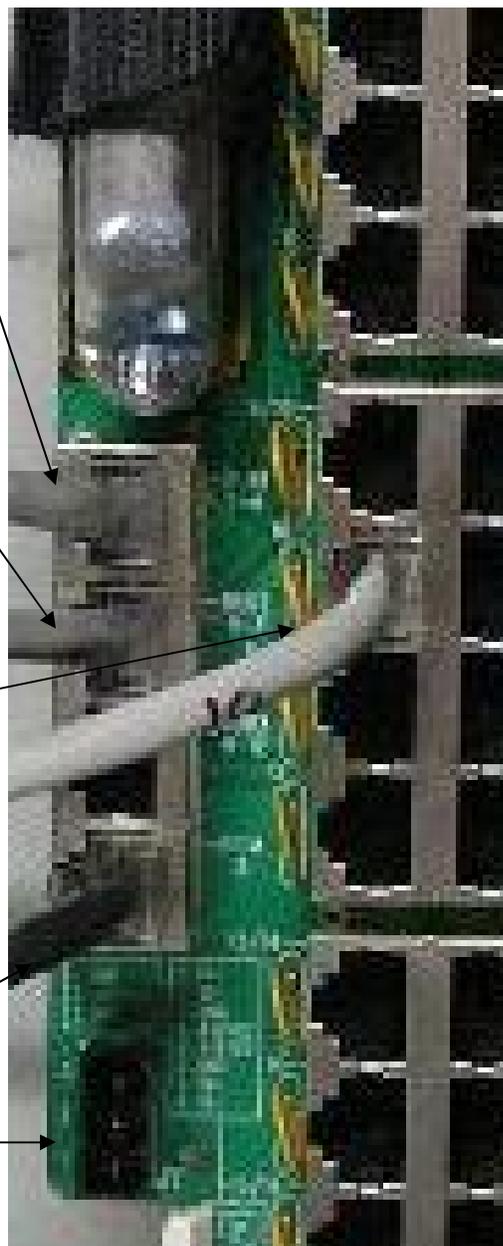
RS485 connections:
Each RS485 port from the RIO supports 4 slots on the console, so a 32 slot console wil require 8 RS485 ports. Specifically the first eight RS485 ports on RIO1. These RS 485 ports are conveniently connected to the console tub using two Straight-thru CAT5 jumpers. The "Slots 1-16" jack on the bottom of the console tub connects to the RJ45 jack labeled "RUBI 1-4" on the left-hand side of the 89D2132 block. The "Slots 17-32" jack on the bottom of the console tub connects to the RJ45 jack labeled "RUBI 5-8" on the left-hand side of the 89D2132 block.

The RS485 port for optional MIC control panels is the 89D-2132 jack labeled "Port 10." If you've connected the power supply to the 89D-2132 block, all you have to do to wire the mic control panels is set the panels' dipswitches for proper addressing and daisy-chain the Port 10 connection to up to four mic control panels. Additional "turret" panels can be wired similarly to subsequent ports.

The RS485 port for an optional console-mounted intercom panel is provided via CAT5 cable as well. On the bottom of the console, you'll find an ethercon connector (bulkhead RJ45 jack) labeled AUX – run a cat5 patch-cable from this jack to the 89D-2132 jack labeled "RICM-16."

89D-2132 power connection.

Installing and Configuring Standalone (no 32kd) Console Systems

DIP switches on MIC control Panels:
The panels used for talent / guest control of the mic positions should be set, in order, to addresses 0,1,2, and 3.
DipSwitch 1 (DS1) on each turret panel sets the addresses and power options for the modules. Switch positions 1 and 2 set the address, 7 and 8 set the pass-thru power mode. 3-6 should be OFF.

Panel	pos1, pos2	pos7, pos8
Addr 0	OFF, OFF	ON , ON
Addr 1	ON , OFF	ON , ON
Addr 2	OFF, ON	ON , ON
Addr 3	ON , ON	ON , ON

The RS485 cat5 cable connects to the 89D-2132 block as shown above, and is connected in a daisy-chain fashion to up to three more panels. If you have more than four panels, contact us for additional features of this wiring scheme that you can use to make the installation job a snap.

Installing and Configuring Standalone (no 32kd) Console Systems

Rubicon M-Class Installation

The Rubicon M Class console from Sierra Automated Systems is a Console / Control Surface comprised of several independent modules housed in a common mainframe. Available modules are:

-MIPM M Class Input Module, 4 faders
-MCCM Console Control Module, includes Monitor, Cue, Talkback, Gen purpose
       Buttons and Meter Select Buttons
-MRIM Router Input Module, 2 faders with Rotary Encoder and LED Alpha Display
-MICOM-8A M Class Intercom Module, 8 Buttons plus Encoder and Alpha Display
-TP Mods Assorted Accessory Button Panels

The Rubicon M Class is wired through an access hole in the bottom panel of the console, located in the right rear under the Console Control Module. All user connections are made to this location. Reference the M Class Wiring and Connector Description Drawing attached. The wires will typically be brought up through an access hole in the desktop under this area. There is enough clearance under the rear panel of the console for the wires to exit above the desktop if desired. The Side Panels are a unique two-piece design: the lower piece may be removed to allow thru-desk mounting of the M Class Console. Thru-desk mounting requires a large rectangular hole in the desktop and provides an even lower profile installation!

Console Power is typically provided by a SAS PS-12-3 power supply. Two supplies may be used to provide full redundancy. The PS-12-3 provides 12 VDC at 3 Amps. Connect the power supply to J301 and/or J302.

The Modules communicate to an SAS System, RIO or 32KD, using CAT 5 wiring, RJ-45 connections, T568B wiring standard, accessible thru the Rubicon M Class bottom panel. The wires will connect to the SAS System either thru RJ-45 connectors to the RIO Rear Panel, or to blocks which are wired to either RIO chassis RS-485 ports or to DRC module RS-485 ports. Available blocks are SAS Model 89D-2132 with RJ-45s or Krone punch style block. Both the RIO connector adapter and the 89D-2132 block provide convenient RJ-45 connections with 4 RS-485 ports per connector (4 wire pairs). The physical communication is via SAS standard RS-485 protocol, with 4 faders/module slots per port (per wire pair). Therefore one RJ-45 connector (4 pair) supports up to 16 module slots. Each MIPM 4 fader Input Module requires one RS-485 port (one wire pair): each fader will reside at one Port/Address, four Addresses for each Port. Each MCCM Console Control Module requires one RS-485 port: Monitor controls are programmed at Address 0; General Purpose Buttons are programmed at Address 1; Address 2 is not used; and Meter Assignment controls are programmed at Address 3.

The Rubicon M Class Meters, Headphones, Cue and Talkback Audio are connected with Digital AES-3 format Audio. Connector J402-DIG AUDIO IN A provides four AES inputs to the M Class Console; Meter 1, Meter 2, Headphones and Cue/Talkback. Each Audio Meter displays Average Audio Level (VU) with a bar and Peak Audio Level

Installing and Configuring Standalone (no 32kd) Console Systems

(PPM) with a dot. The built in Headphone Amplifier drives the ¼" and 1/8" jacks on the front panel. The Cue Speaker input is mono and is carried on one channel (R) of an AES 3 Digital 2 Channel signal. The Talkback to console operator audio is also mono and is carried on the other channel (L) of the Cue/Talkback AES 3 signal. The signals are in the order (T568B wiring):
Meter 1 – Talkback/Cue – Headphone – Meter 2.

The meter bridge area also provides a Timer. The Timer is controlled via front panel controls for Start and Stop. A logic input is provided for Remote 'Auto Start'. Auto Start allows the Timer to Start and count up whenever a programmed event occurs, such as a Mic being turned On. When the AUTO button is On, and if a closure is received on the logic input the Timer will Start and count up. This logic input should be connected to a RIO relay. The Relay Number is programmed in the Console Configuration screens of the Router Control Software. The Timer/Logic Input connector is wired with a CAT 5 cable that is normally punched down to relay outputs from a RIO chassis.

Console Configuration
Each console is configured based on the complement of modules installed. For example, three MIPM Input Modules provide 12 faders and require 3 RS-485 ports. Add one MCCM Console Control Module, which requires 1 RS-485 port and 4 RS-485 ports are required. One User RJ-45 connector, J402-RS-485A will be used. Internal Console wiring and Port Assignment are explained below:

Input Module RS-485 Assignment
Each Input Module has one RS-485 port on an RJ-45 connector which includes power and ground. All user RS-485 Data and Power connections to the M Class Console are made to the MCCM Console Control Module. User connections of System RS-485 are made to J402-RS-485-A and B. J402-RS485-A provides data ports 1 thru 4 and J402-RS-485-B provides data ports 5 thru 8. These RS-485 data connections are distributed to the console modules, along with Power and Ground, via connectors J401-1 thru 8. The data circuits of J401-1 thru 7 are connected from J402- RS-485-A and B, ports 1 thru 7. When configuring the console, input modules are typicallyconnected to ports 1, 2, 3... etc from Left to Right (as the operator sits at the console). Auxiliary modules may also be connected to these data ports as required. Port 8 is connected per below.

MCCM Console Control Module RS-485 Assignment
The RS-485 for the MCCM Console Control Module functions (Monitor, General Purpose Buttons, Meter Assignment) may be assigned to any RS-485 data port, 1 through 7, by RJ-45 data cable. The MCCM RS-485 is connected by default to J401 connector 8. To connect J401-8 to the port required, simply connect an RJ-45 thru cable from J401-8 to J401-'required port'. e.g. If the configuration requires the MCCM Console Control Module data to be connected to System RS-485 Port 4, then connect the RJ-45 data cable from J401-8 to J401-4. If it is required to connect the MCCM RS-485 to J402-RS-485-B-Port 8 install jumpers J406 & J407 on the MCCM printed circuit above connector J403-2 ; these jumpers will connect J401-8 directly to J402-4 RS-485 B port 8.

Installing and Configuring Standalone (no 32kd) Console Systems

Console Spreadsheet
A Spreadsheet is available from SAS which details channel locations within the RIO or 32KD system. This is a useful tool for system planning. SAS typically supplies a configuration spreadsheet with each console. Please review the default assignments created by SAS. The configuration is easily changed. If you keep the spreadsheet up to date with changes you make it will help you in understanding the configuration you create and it will also be required by SAS if you require telephone / remote internet installation support.

Installing and Configuring Standalone (no 32kd) Console Systems

Sample RIO Configuration Data (be sure to use YOUR data for installation.
Audio Sources feeding inputs of the Router/RIO.
Figure 4. Source Data

Input Chan Num	Modul e Chan Num	Chan Label 8 character max	LocalLabe l 8 character max	Linked 0=Mono, 1=Stereo	Hidden 0=No, 1=Yes	Notes 256 character max	Block and Side	Krone Pair number
		1	KRL	0	1	F1-S1 RIOLink: A Control Room		
1	1	A Hyb1	Phone 1	0		Caller audio out	B1L	2
2	2	A Hyb2	Phone 2	0		Caller audio out	B1L	2
3	3	A PC 1	PC Play1	1		PC Playback	B1L	3
4	4	{A PC1	{pc1	1	1		B1L	3
5	5	A PC 2	PC Play2	1		PC Playback	B1L	5
6	6	{A PC2	{pc2	1	1		B1L	5
7	7	A PC 3	PC Play3	1		PC Playback	B1L	6
8	8	{A PC3	{pc3	1	1		B1L	6
9	9	A PC 4	PC Play4	1		PC Playback	B1L	8
10	10	{A PC4	{pc4	1	1		B1L	8
11	11	A ISDN1	ISDN 1	1		Inbound ISDN audio	B1L	9
12	12	{A ISDN1	{isdn1	1	1		B1L	9
13	13	A CD1	CD 1	1		CD playback	B1L	11
14	14	{A CD1	{cd1	1	1		B1L	11
15	15	A CD2	CD 2	1		CD playback	B1L	12
16	16	{A CD2	{cd2	1	1		B1L	12
17	17	A OpMic	OP MIC	1		MIC1 - Operator	B1R	27
18	18	A Mic2	MIC 2	1	1	MIC Audio	B1R	28
19	19	A Mic3	MIC 3	1		MIC Audio	B1R	30
20	20	A Mic4	MIC 4	1	1	MIC Audio	B1R	31
21	21	A Tivo	TIVO	1		Tivo playback audio	B1R	33
22	22	{A Tivo	{tivo	1	1		B1R	34
23	23	A AuxIn	Aux In	1		Auxiliary in audio	B1R	36
24	24	{A Auxin	{auxin	1	1		B1R	37
25	25	B PGM	B PGM	1		PGM bus from other CR	B1R	39
26	26	{B PGM	{B PGM	1	1		B1R	40
27	27	SAT 1	SAT 1	0		mono satellite source	B1R	42
28	28	SAT 2	SAT 2	0	1	mono satellite source	B1R	43
29	29	SAT 3	SAT 3	1		Stereo Sat source	B1R	45
30	30	{SAT3	{SAT3	1	1		B1R	46
31	31	AirTuner	AirTuner	1		ON-Air Tuner feed (confidence)	B1R	48
32	32	{AirTunr	{AirTunr	1	1		B1R	49

Source Channels 1-16 are AES inputs to the system, eight stereo or dual-mono AES sources –
Channels 17-32 are analog inputs to the system, usually a mix of mono and stereo sources.
Note that stereo resources must be on sequential channels with left on an odd channel number and
right on the next (even) channel number.

The Krone blocks have numbered pairs from 1-25 on the left side of the block and 26-50
on the right. The block side and pair numbers for each source are included in the chart
above.

For Example, the AES connection for inbound ISDN audio is on inputs 11/12, which is punched
down to Audio Block 1 (inputs) Left side, on the ninth pair of the block.

The analog connection for MIC 3 (a mono, line-level input from a pre-amp) is connected to
Audio Block 1 Right side, on the fifth pair of the block.

Figure 5. Destination Data

Output Chan Num	Module Chan Num	Chan Label	Local Label	Linked	Hidden	Notes (256 character max)	Location from Location List	Location Name	Bus Type	Bus Type Name	Block and Side	Krone Pair number
0	0	Undef	Undef			Undefined		Undefined		Router		
		1	KRL			F1-51 RIOLink A Control Room	1					
1	1	A Hyb1>	A Hyb1>	3	0	mix minus feed to Hybrid	1	A Control Room	12	Mix-Minus	B2L	2
2	2	A Hyb2>	A Hyb2>	3	0	mix minus feed to Hybrid	1	A Control Room	12	Mix-Minus	B2L	2
3	3	A PROC>	A PROC>	1	1	AES out for processing chain (xpt dsplb17)	1	A Control Room		Router	B2L	3
4	4	(A PROC>	(A PROC>	1	1		1	A Control Room		Router	B2L	3
5	5				1		1	A Control Room		Router	B2L	5
6	6				1		1	A Control Room		Router	B2L	5
7	7				1		1	A Control Room		Router	B2L	6
8	8				1		1	A Control Room		Router	B2L	6
9	9	A ISDN1>	A ISDN1>	1	0	mix minus feed to ISDN unit	1	A Control Room	12	Mix-Minus	B2L	8
10	10	(A ISDN1>	(A ISDN1>	1	1		1	A Control Room	12	Mix-Minus	B2L	8
11	11	A PCREC>	A PCREC>	1	0	AES out for PC Rec (xpt dsplb25)	1	A Control Room		Router	B2L	9
12	12	(A Pcre	(A Pcre	1	1		1	A Control Room		Router	B2L	9
13	13			1	1		1	A Control Room		Router	B2L	11
14	14			1	1		1	A Control Room		Router	B2L	11
15	15	A OFFL	A OFFL	3	0	OFFLINE bus	1	A Control Room	7	Utility	B2L	12
16	16				1		1	A Control Room		Router	B2L	12
17	17	A PGM1	A PGM1	1		Main Pgm bus	1	A Control Room	1	Program	B2R	2
18	18	(A PGM1	(A PGM1	1	1	(RJ45 AES output feeds MCClass Meter1)	1	A Control Room	1	Program	B2R	3
19	19	A CueSpk	Cue Spkr	3		Cue speaker output w/TB bus	1	A Control Room	13	Cue	B2R	5
20	20	(A TBbus	(TB bus	3	1	(RJ45 AES output feeds MCClass)	1	A Control Room	0	Router	B2R	6
21	21	A OpHP	A OpHP	1		feed to operator Headphone amp	1	A Control Room	15	Headphone	B2R	8
22	22	(A OpHP	(A OpHP	1	1	(RJ45 AES output feeds MCClass)	1	A Control Room	15	Headphone	B2R	9
23	23	A Meter2	A Meter2	1		steerable meter	1	A Control Room		Router	B2R	11
24	24	(A Mtr2	(A Mtr2	1	1	(RJ45 AES output feeds steerable meter)	1	A Control Room		Router	B2R	12
25	25	A AUDbus	A AUD	1		Audition bus	1	A Control Room	7	Utility	B2R	14
26	26	(A AUD	(A AUD	1	1		1	A Control Room	7	Utility	B2R	15
27	27	A MonSpk	A MonSpk	1		Feed to monitor amp/speakers	1	A Control Room	14	Speaker	B2R	17
28	28	(A MonSp	(A MonSp	1	1		1	A Control Room	14	Speaker	B2R	18
29	29	A HstHP	Host HP	1		feed to Host Headphone amp	1	A Control Room	15	Headphone	B2R	20
30	30	(A HstHP	(Host HP	1	1		1	A Control Room	15	Headphone	B2R	21
31	31	A GstHP	A GstHP	1		feed to guest HP amp	1	A Control Room	15	Headphone	B2R	23
32	32	(A GstHp	(A GstHp	1	1		1	A Control Room	15	Headphone	B2R	24

Destination Channels 1-16 are AES outputs from the system (eight stereo or dual mono AES outs) – Channels 17-32 are analog outputs from the system.

The Krone blocks have numbered pairs from 1-25 on the left side of the block and 26-50 on the right. The block side and pair numbers for each destination are included in the chart above.

For Example, the AES connection for outbound PC Record audio is on outputs 11/12, which is punched down to Block 2 (outputs) Left side, on the ninth pair of the block.

The analog connection for the cue speaker amp is connected to Block 2 Right side, on pairs 42 and 43, which are the seventeenth and eighteenth pairs on the right side of the block of the block for left and right respectively.

Installing and Configuring Standalone (no 32kd) Console Systems

Appendix - Mechanical Data (mounting dimensions)

MCLASS (optional) cutout dimensions
1 - M12.2
2 – M20.2
3 – M28.2

RubiconSL Cutout and Meterbridge dimensions
1 – RubiconSL – 8
2 – RubiconSL – 16
3 – RubiconSL – 24
4 – RubiconSL – 32

Rubicon Cutout and Meterbridge dimensions

1 – Rubicon – 8
2 – Rubicon – 16
3 – Rubicon – 24
4 – Rubicon – 32
5 – Rubicon – 40