RIO RJ-45 Connector Pinouts

The RIO chassis is available with RJ-45 connectors for Audio, Data and GPIO (Opto and Relay) connections. All connections are made in the SAS Standard RJ-45 Pinout. The SAS Standard Pinout provides up to two Signal pairs, one Ground pair and one Power pair (power optional). The pinouts are described here:

AUDIO on RJ-45

Audio modules provide one RJ-45 for each L/R audio pair.
Digital signals use Signal 1+/- (AES stereo) and Signal 2 is not connected.
Analog signals use Signal1+/- for Left and Signal 2+/- for Right.

Pin 1	Signal 1+	WHT/ORG
Pin 2	Signal 1-	ORG
Pin 3	Ground	WHT/GRN
Pin 4	NC	BLU
Pin 5	NC	WHT/BLU
Pin 6	Ground	GRN
Pin 7	Signal 2+	WHT/BRN
Pin 8	Signal 2-	BRN

In addition each output module, both analog and digital, provides four duplicate digital AES signals on one connector for connection to SAS meter pod audio meters. These four AES digital signals are isolated duplicates of the first four stereo signals on the output module, but are not transformer isolated. The pinout follows:

Pin 1	Signal 1+	WHT/ORG
Pin 2	Signal 1-	ORG
Pin 3	Signal 2+	WHT/GRN
Pin 4	Signal 3-	BLU
Pin 5	Signal 3+	WHT/BLU
Pin 6	Signal 2-	GRN
Pin 7	Signal 4+	WHT/BRN
Pin 8	Signal 4-	BRN

<u>RS-485 CONTROL PORT DATA on RJ-45</u>

RS-485 Control Port Data is connected to ten RJ-45 connectors.
The first 8 RS-485 control ports are connected to two RJ-45 connectors (J1 1-4 & 5/8 - four pairs per connector) and can be connected directly to SAS Console Data ports.
The next 8 connectors (J2-9 thru 16) have one RS-485 port on Signal Pair 1, Ground (pair 2) and 12 VDC Power (switchable) on pair 3. Pair 4 is not used. An LED illuminates to show local power switched On.

<u>J1 1-4 & 5-8</u>
Pin 1 Signal 1+   WHT/ORG
Pin 2 Signal 1-   ORG
Pin 3 Signal 2+   WHT/GRN
Pin 4 Signal 3-   BLU
Pin 5 Signal 3+   WHT/BLU
Pin 6 Signal 2-   GRN
Pin 7 Signal 4+   WHT/BRN
Pin 8 Signal 4-   BRN

<u>J2-9 thru 16</u>
Pin 1 RS-485+   WHT/ORG
Pin 2 RS-485-   ORG
Pin 3 Ground   WHT/GRN
Pin 4 +12 VDC   BLU   (Switchable via DIP)
Pin 5 +12 VDC   WHT/BLU   (Switchable via DIP)
Pin 6 Ground   GRN
Pin 7 NC   WHT/BRN
Pin 8 NC   BRN

<u>DS1-1 thru 8 (+12 VDC to RS-485 J2. LED indicates power On)</u>
DS1-1 Power On to RS-485 9 connector
DS1-2 Power On to RS-485 10 connector
DS1-3 Power On to RS-485 11 connector
DS1-4 Power On to RS-485 12 connector
DS1-5 Power On to RS-485 13 connector
DS1-6 Power On to RS-485 14 connector
DS1-7 Power On to RS-485 15 connector
DS1-8 Power On to RS-485 16 connector

OPTO ISOLATED INPUTS

Opto-isolated Inputs are connected to 8 RJ-45 connectors (J3 - 1/2 thru 15/16). Each connector has two opto-isolated inputs and Ground. Each connector has switchable power to the two Opto + thru an LED and 680 ohm resistor. When used with the optional local +12 VDC power supply this allows the user to connect a dry contact from Opto – to Ground to activate (energize) the Opto. The LED will illuminate only when the Opto is energized and only when the local on-board power is used. If the optos are energized from external powered sources the local power should not be switched on and the LED will have no function.

OPTO – 2 Optos per connector – J3 1/2 thru 15/16
Pin 1 Opto 1+   WHT/ORG
Pin 2 Opto 1-   ORG
Pin 3 Ground   WHT/GRN
Pin 4 NC   BLU
Pin 5 NC   WHT/BLU
Pin 6 Ground   GRN
Pin 7 Opto 2+   WHT/BRN
Pin 8 Opto 2-   BRN

DS2-1 thru 8 (+12 VDC to RS-485 J2. LED indicates power On)
DS2-1 Power On to Opto 1/2 connector
DS2-2 Power On to Opto 3/4 connector
DS2-3 Power On to Opto 5/6 connector
DS2-4 Power On to Opto 7/8 connector
DS2-5 Power On to Opto 9/10 connector
DS2-6 Power On to Opto 11/12 connector
DS2-7 Power On to Opto 13/14 connector
DS2-8 Power On to Opto 15/16 connector

RELAY OUTPUTS

Relay Outputs are connected to Ten RJ-45 connectors in the same manner as the RS-485 signals. One Form A, Normally Open Contact is provided. The relays are low power solid state, 24 V Max, 120 mA Max, 35 ohm Max.
The first 8 relays are connected to two RJ-45 connectors (J4 – 1/4 and 5/8). These relays can be directly connected to SAS Meter Pods to control Timer functions.
The next 8 connectors (J5-9 thru 16) have one Relay on Signal Pair 1 and Ground (pair 2). Pairs 3 and 4 are not used.

J5-9 thru 16
Pin 1 Relay Com   WHT/ORG
Pin 2 Relay NO   ORG
Pin 3 Ground   WHT/GRN
Pin 4 NC   BLU
Pin 5 NC   WHT/BLU
Pin 6 Ground   GRN
Pin 7 NC   WHT/BRN
Pin 8 NC   BRN