bdi

Broadcast Devices, Inc.

RAS-216 Passive Audio Switcher

Operations Quick Start Guide

Broadcast Devices, Inc.

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Regulatory and Safety Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

I. Basic Description

The RAS-216 passive audio switcher can accept up to 16 balanced, single channel inputs for monaural operation and can also be configured for stereo operation and accepts 8 stereo pairs to a single stereo pair output. Connections are by DSUB female connections on the rear panel and conform to the Tascam™ D-88 standard. Connection information is provided under installation. The inputs can also accept BDI model number AIP-200F I/O panels.

The RAS-216 can be controlled by front panel pushbutton, rear panel DSUB44F GPIO remote control, RS232/485 serial or by Ethernet SNMP v2 standard.

II. RAS-216 Basic operation

The RAS-216 switcher can be operated via front panel pushbutton, rear panel GPIO with accompanying RAS-216 Remote Panel, RS232/485 serial control and by Ethernet SNMP v2 commands. BDI also provides a free Windows application software package to control channels and view active channel status. The software application also allows for the naming of input channels.

The unit will revert to the last channel selected if power is lost to the unit after power restoration.

RAS-216 Front Panel

RAS-216 Rear Panel

## III. REMOTE CONTROLLED OPERATION/INSTALLATION

A. Rear Panel GPIO:

Control and status is provided by J1 DSUB4F connector. The connection information is provided in the figure on page 8. In addition the optional RAS-16 Remote Control panel/interface cable can be used to control the unit from a distance of 25 feet.

B. RS232/485 Serial Control

RS232 serial control is provided by J3 Serial 2 DSUB25F.

Baud rate 38400 bits/sec 8 data bits No parity1 stop bit

The connection information is provided below:
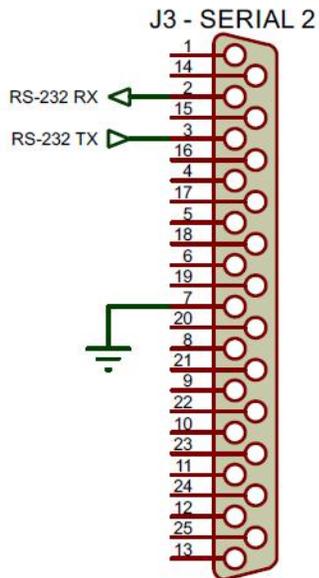
J3 Serial 2 RS232

Download the RAS-216 Windows Application software from the RAS-216 product page on our web site to set up serial communication. You can select the BDI command set, The EAS command set supported by Sage Endec and Digital Alert Systems DASDEC system. There also provision for creating your own serial commands to match automation and satellite receiver systems.

BDI command set chart

Command	Channel Select	Status Return
A	1	01
B	2	02
C	3	03
D	4	04
E	5	05
F	6	06
G	7	07
H	8	08
I	9	09
J	10	10
K	11	11
L	12	12
M	13	13
N	14	14
O	15	15
P	16	16

No carriage return character is necessary for the BDI command set. Note that for custom commands that the user enters will return the channel number status as indicated above.

IV. Audio I/O Connections

Rear panel connections to the RAS-216 inputs are made via DSUB25M connector or by any Tascam D88™ standard DSUB interface including the BDI AIP-100F I/O panel. A DSUBM connector and hood are provided to wire the outputs to the output connector.

RAS-216 Audio Connections

V. Ethernet Connection

The rear panel LAN connections supports Ethernet SNMP v2 protocol using OID strings to control and provide status of the RAS-216 channel select. In addition free application program and SNMP MIB file are available for download from our web site: www.broadcast-devices.com is available. This program allows for control, status and configuration of input names for the channels. Visit the RAS-216 product page under Audio Products on our website for download information.

The default IP address for the RAS-216 is:

192.168.1.200

Port: 161

Default Username: username – lower case

Default Password: password - lower case

To make changes to the IP address and other settings connect a computers directly to the LAN connection of the unit. Power cycle the unit and using a standard browser such as Microsoft Express, Google Chrome or Firefox enter the IP address and hit enter. Once you navigate to the entry screen shown below:

Press the setup button and enter the default username and password and enter the setup screen shown on the next page.

Note: If you accidently press the Update F/W button simply power cycle the unit and enter the unit again with the IP address. The Update F/W button is used to load firmware into the unit if needed.

This is the only time you will use a browser to access the unit. For control and setup of the unit including channel naming and serial settings download the RAS-216 APP from the RAS-216 product page found on the BDI audio products page\RAS-216.

Make your changes and IMPORTANT!!! – Take a screen shot of your setting or write them down here for convenience. **Once changes are made power cycle the unit for changes to take effect.**

Username: _____

Password: _____

SNMP Read Community: _____

SNMP Write Community: _____

SNMP Port: _____

IP Address: _____

Subnet Mask: _____

Default Gateway: _____

DNS Server: _____

Note: Currently the only way to recover a lost set of data is to remove the cover from the unit and remove power from the unit. Locate the reset button on the rear of the LAN communications module which is a small white micro switch located at the back left of the board as viewed from the front of the unit. With that button depressed, power the unit up and then the unit will erase the saved data and put back the default data. Once having performed this procedure power cycle the unit before entering the default data to set the unit back up.

V. GPIO Remote Control Connections

RAS-216 Remote Connections
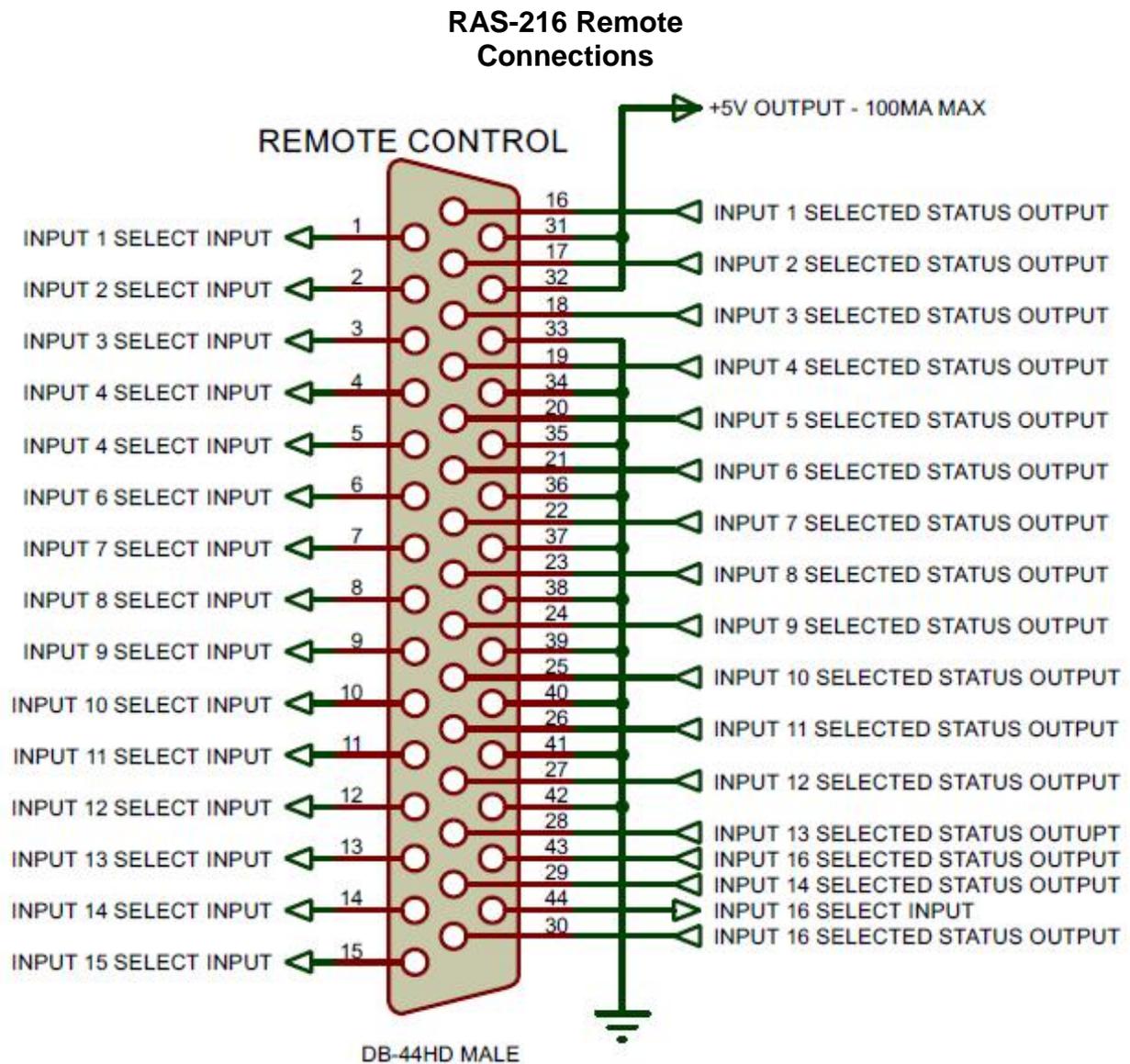
Notes:
1. Status outputs are open collector Darlington transistors capable of sinking 100ma @ 30v DC.
2. Select and remote inputs are momentary closures with internal 4.7K pullup resistors to 5v DC.

VI. Configuring the RAS-216 for 8 Channel Stereo Operation

As supplied default from the factory the RAS-216 is configured as a 16 channel, monaural audio switcher. To convert the unit to an 8 channel stereo switcher follow these instructions:

1. Remove power from the unit
2. Remove the top cover by removing 5 screws from the rear top cover, two on each side and the 3 upper screws from the front panel.
3. Locate The four position DIP switch at the rear of the main PC board and adjust switches according to the figure below:
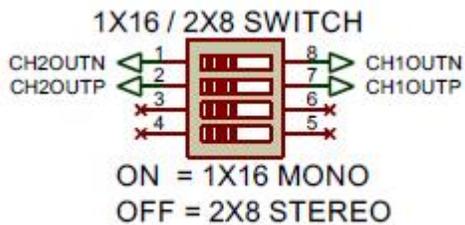
4. Remove the IDC 26 position ribbon cable from the main PC board connected to the 9-16 input front panel board.
5. Restore power and test buttons 1-8 for proper operation. In the stereo mode buttons 9-16 do light and have no function.

VII. Specifications

Number of inputs:	16 Monaural, 8 Stereo
Input Connector style:	DSUB25F – Tascam Standard
Output Connector Style:	DSUB25F – Tascam Standard
GPIO Remote Control Connector Style:	DSUB44F
RS232 Connector Style:	DSUB25F
Number of Outputs:	Single Output
Remote Control:	GPIO, RS232/485 Serial, Ethernet SNMP v2
Power Requirements:	120/240 VAC 50/60 Hertz @ 0.5A Redundant power supply with dual AC USA power cords provided
Environmental Specification:	0-60 degrees C Non condensing atmosphere
Physical Size:	19" X 10"D X 1.75" H Standard EIA rack mount
Chassis Type:	Cold Rolled Steel powder coated
Shipping Carton Size:	Carton Size: 22" X 14" X 7"
Shipping Carton Weight:	15 lbs.
Available Options:	BDI P/N AIP-100F XLR to Tascam Interface Panel/Cable
	RAS-216 Remote Control Panel/Cable

Broadcast Devices, Inc. Limited Product Warranty

Broadcast Devices, Inc. ("BDI") products are warranted against failure due to faulty materials or workmanship for a period of one (1) year from the date of shipment to the ultimate user. The warranty covers repair or replacement of defective parts at the factory, provided the unit has been returned prepaid by the user. All shipments to the factory shall have a Returned Material Authorization (RMA) number affixed to the outside of the container, obtained from the factory. The above warranty is void if the unit has been modified by the user outside any factory recommendations or if the unit has been abused or operated outside its electrical or environmental specifications. If customer conducted field tests suggest that the unit may be faulty, whether the unit is in warranty, a full report of the difficulty should be sent to the Broadcast Devices, Inc. factory. The factory may suggest further tests or authorize a return for factory evaluation.

Units sent to the factory should be well-packed and shipped to Broadcast Devices, Inc. The current shipping address can be found by visiting our main web page: www.broadcast-devices.com. Remember to affix the RMA number to the outside of the carton. Any packages received without such an RMA number will be refused. Note: Freight collect shipments will also be refused. When the unit has been received, inspected, and tested, the customer will receive a report of the findings along with a quotation for recommended repairs that fall outside the standard warranty. Units returned for in-warranty repairs that are found not to be defective will be subject to an evaluation and handling charge. In-warranty units will be repaired at no charge and returned via prepaid freight.

Out-of-warranty units needing repair require a purchase order and will be invoiced for parts, labor, and shipping charges.

When ordering a replacement part, contact any authorized reseller of Broadcast Devices, Inc. Always specify A) Part Description, and Quantity; B) Date of Purchase, Where Purchased; C) Any Special Shipping Instructions. Always specify a street address, as shipping companies cannot deliver to a postal box.

BDI. is not responsible for any other manufacturer's warranty on original equipment. Nor are we responsible for any failure, damage, or loss of property resulting from the installation or operation of our equipment outside the recommended specifications.

Broadcast Devices, Inc. reserves the right to change materials, specifications, and features at any time.

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