

DDA 1x8SH & DDA 1x4SH Digital Distribution Amplifier Manual



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Overview

The Radio Systems DDA-1x8SH is a high-performance digital distribution amplifier with input/output connectors that conform to the StudioHub+ RJ45 wiring standard.

The amplifier allows two independent inputs to be switched to the eight outputs by depressing an A/B switch on the front panel.

Total isolation is provided between A/B inputs and the eight outputs. Each balanced channel is unaffected by the other channels. The Radio Systems DDA-1x8SH Digital Distribution Amplifier allows digital audio sources to be routed to multiple locations while maintaining the integrity of signal quality throughout.

Mounting

The DDA-1x8SH occupies only 1 rack unit (1-3/4 inch) of height in a 19 inch EIA rack. To allow for adequate ventilation, avoid mounting the unit directly above large heat producing equipment such as power amps or power supplies.

When stacking units, it is recommended that one rack space (1-3/4 inch) remain open between every three units.

Operation

Apply an AES3 signal, sampled from 32 KHz to 96 KHz to either (or both) of the unit's inputs. The applied signal is distributed to each of the unit's eight outputs at unity gain.

Two different signals may be wired to the inputs; the signal routed to the distributed outputs is determined by the position of the A/B input select switch on the front panel.

LEDs on the front panel indicate which input (A or B) is selected, and whether audio (data) is present.

Connections

The DDA-1x8SH conforms to the StudioHub+ wiring standard. On the RJ45, the pinouts are as follows:

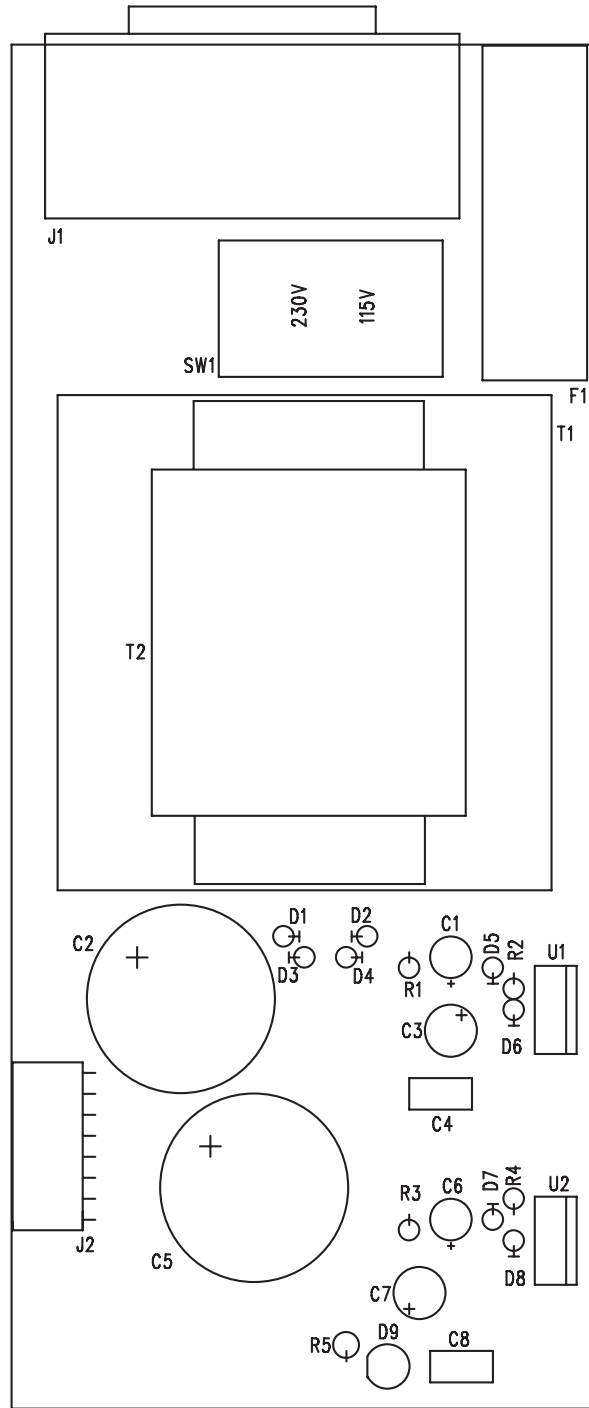
Pin1: AES +

Pin2: AES -

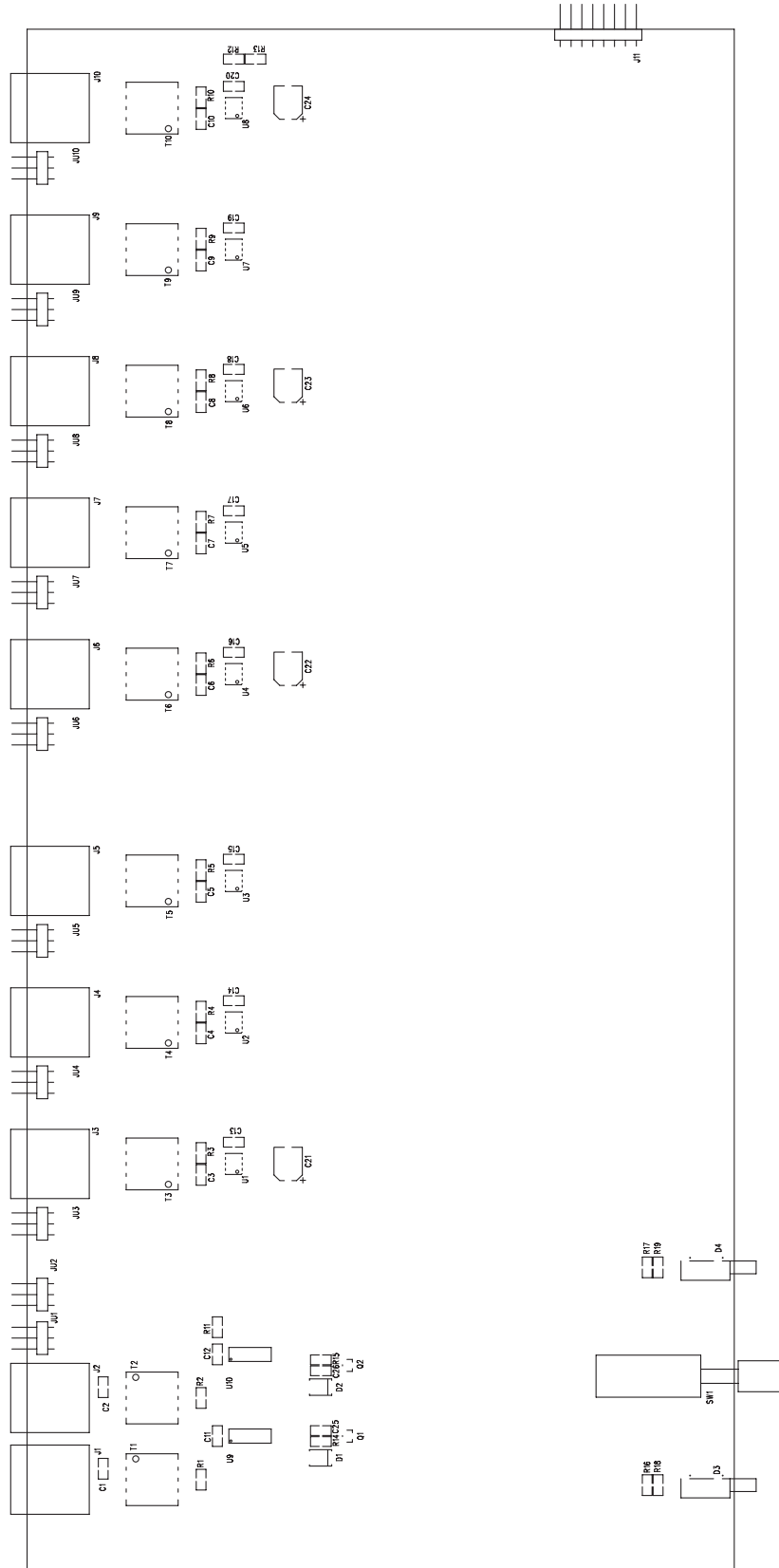
Ground is carried through the shield of the RJ45 cable. At the output connectors, ground reference may be selected by installing shorting jumpers (included) on to the headers adjacent to the RJ45 jacks. Jumping the center pin with 'CH' will reference the audio output ground to chassis ground; jumpering the center pin with "IN" will reference the audio output ground to the input audio ground.

AC line voltage is user selectable from the lid of the cabinet by inserting a thin shafted screw driver through the vent holes to move the red line voltage selector switch to the left for 230V operation, and to the right for 110V operation (factory default).

Parts Layout Power Supply



Parts Layout Amplifier



Parts List Power Supply

Part #	Qty.	Description	Reference Designation
16298	1	DA 4X4B POWER SUPPLY DETAIL	
1026	1	CAP 15UF 35V	C1
10597	1	CAP 4700UF 35V	C2
5744	1	CAP 100UF 25V RAD +/-20%	C3
5743	1	CAP .1UF FILM	C4
7012	4	DIODE 1N4005	D1;D2;D5;D6
10489	1	FUSE HOLDER	F1
10847	1	FUSE 0.3 AMP	F1
10491	1	IEC POWER CONNECTOR	J1
10490	1	SAMTEC 8 PIN FRT HEADER	J2
5877	1	RES 332 OHM 1/4W 1%	R5
9585	1	RES 237 OHM 1/4W 1%	R2
2761	1	RES 680 OHM 1/4W 5%	R1
10492	1	SWITCH POWER DPDT 110/220V	SW1
9351	1	TRANSFORMER POWER DI-XX/AMD-1	T2
1077	1	VR LM317T	U1
10683	1	LED 3MM GREEN HIGH CURRENT	D9

Parts List Amplifier

Part #	Qty.	Description	Reference Designation
12850	1	SH+ DDA-1X8DETAIL	
14425	2	RES SMT 100 OHM 1/8W 1%	R12;R13
16039	2	RES SMT 110 OHM 1/8W 1%	R1;R2
16574	2	RES SMT 1.00M 1/8W OHM 1%	R14;R15
14467	1	RES SMT 4.7K 1/8W 5%	R11
16400	4	RES SMT 402 OHM	R16;R17;R18;R19
15124	8	RES SMT 54.9 OHM	R3;R4;R5;R6;R7;R8;R9;R10
16005	22	CAP SMT .1UF 50V CERM	C1-C20; C25;C26
16025	2	TRANSISTOR SMT ZXMN6A07FTA	Q1;Q2
16570	1	IC SMT CD74ACT153M	U10
16572	1	IC SMT AM26C32CD RECEIVER	U9
16043	8	IC SMT TRANSCEIVER RS485	U1;U2;U3;U4;U5;U6;U7;U8
16008	4	CAP SMT 47UF 25V ELECT	C21;C22;C23;C24
16507	2	DIODE SMT DL4004	D1;D2
16038	10	TRANSFORMER SMT AES/EBU	T1;T2;T3;T4;T5;T6;T7;T8;T9;T10
11353	10	RJ45 RIGHT ANGLE SHIELDED	J1;J2;J3;J4;J5;J6;J7;J8;J9;J10
10484	1	HEADER 8 PIN RIGHT ANGLE	J11
16417	10	HEADER 3 PIN SAMTEC	JU1;JU2;JU3;JU4;JU5;JU6;JU7;JU8;JU9;JU10
11359	10	JUMPER PLUG - TALL .1	JU1 THRU JU10
16356	2	LED SMT RED	D3A;D4A
16357	2	LED SMT GREEN	D3B;D4B
16348	2	LIGHT PIPE 3MM DUAL TOWER	D3;D4
9542	1	SWITCH SINGLE STATION "F"	SW1

Specifications

Frequency Response	+/- 0.1 dBfs, 20Hz – 20kHz
Distortion	.002% over 20Hz – 20kHz, output level -20 dBfs (with 110 ohm load)
Noise	123 dB below 0 dBfs output level, bandwidth 20 Hz - 20kHz with 110 ohm input and output termination
Nominal input	-20 dBfs
Maximum input	0 dBfs
Maximum output	0 dBfs
Dynamic Range	123 dB
Input Impedance	110 ohms
Output Impedance	110 ohms
LED Indicators	audio (data) present A/B input select

Warranty

Radio Systems warrants this equipment to be free from defects in materials and workmanship for a period of one (1) year.

This warranty extends to first users of the product and future owners who purchase the product within the warranty period.

The terms of this warranty are null and void if this product is stored or operated in an environment not conducive to electronic equipment, or shows signs of misuse or modifications which affect the proper functioning of the product. This warranty does not apply to damage caused by fire, smoke, flood, lightning, or acts of nature and physical abuse.

Radio Systems, and its associated companies, authorized distributors, and personnel are not liable for loss of revenues or other damages or effects to the broadcast signal quality or coverage which may result from the improper functioning of this product.

Repair Policy

Technical assistance is available at any time, at no charge, by phone or correspondence.

During the warranty period, there will be no charge for parts or service made to units which show no sign of misuse by customer or lightning caused damage. The customer is responsible for the cost of shipping their unit back to Radio Systems for repair.

During the warranty period, shipment of small parts and assemblies may also be made at a charge to the user. Emergency shipments of replacement parts and circuits will be made at the user's request for an extra shipping and service charge. Chargeable services will be made COD or on Net-30 day terms to users with established accounts.

During the warranty period, full credit or return of COD charges (less any service and expedited shipping charges) will be made to users who return the defective parts or circuits within 30 days, if the damage is covered under the terms of the warranty.

Return Instructions

Contact Radio Systems at 856-467-8000 for a return authorization number.

Pack all items carefully and ship pre-paid, via UPS insured, to:

Radio Systems
601 Heron Drive
Logan Township, NJ 08085

Attn: R.A.# _____

Enclose a note which includes your name, company, phone number, the serial number, return address (no box numbers), and a complete description of the problem.

For Assy:
Part# DDA-1x8SH
12/07



601 Heron Drive
Logan Township, NJ 08085
Phone: 856-467-8000 Fax: 856-467-3044
<http://www.radiosystems.com>