BROADCAST tools® INC

PROBLEM SOLVED

Installation and Operation Manual

2x6 DA Plus
2X3 or 1x6 Distribution Amplifier

Manual update: 6/16/2015
If you need a firmware upgrade, contact Broadcast Tools®

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INTRODUCTION

Thank you for your purchase of the 2x6 DA Plus Stereo Distribution Amplifier, which we will refer to throughout the manual as the 2x6 DA Plus. We're confident this product will give you many years of dependable service. This manual is intended to give you all the information needed to install and operate the BROADCAST TOOLS® 2x6 DA Plus

SAFETY INFORMATION

Only qualified technical personnel should install the 2X6 DA PLUS. Any attempt to install this device by a person who is not technically qualified could result in a hazardous condition to the installer or other personnel or damage to the 2X6 DA PLUS or other equipment. Please ensure that proper safety precautions have been taken before installing this device. If you are unfamiliar with this type of equipment, please contact a properly qualified engineer to handle the installation and setup of the 2X6 DA PLUS. Broadcast Tools, Inc., is unable to support NON-Broadcast Tools software, hardware or NON-Broadcast Tools computer/hardware/software problems. If you experience these problems, please research your hardware/software instruction manuals or contact the manufacturers technical support department.

WHO TO CONTACT FOR HELP

If you have any questions regarding your product or you need assistance, please contact your distributor from whom you purchased this equipment. If you would like more information about BROADCAST TOOLS® products, you may reach us at:

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Designed, Assembled and Supported in WA State, USA

CAUTION!

Broadcast Tools® Products, as with any electronic device, can fail without warning. Do not use this product in applications where a life threatening condition could result due to failure.
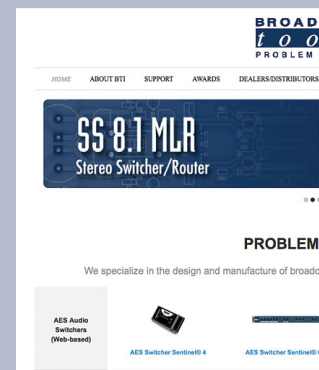
NOTE:

This manual should be read thoroughly before installation and operation.

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INTRODUCTION

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Product Overview

The 2x6 DA Plus stereo distribution amplifier is equipped with a stereo line level high-Z input, which accepts a balanced or unbalanced source with six active balanced low-Z output amplifiers. Each output amplifier may be paired for stereo operation or each output pair may be summed for monaural operation without affecting the stereo separation of the other outputs. Each output amplifier has a recessed front panel level control trimmer.

Features/Benefits

- Stereo or monaural output set via jumpers.
- Front panel output level trimmers.
- Switch selectable input gain for –10dBV or +4dBU sources, eliminating the need for external level conversion.
- Removable euro-block screw terminal connectors are used for audio connections. Necessary mating plugs are supplied.
- Fully RFI proofed.
- Surge protected internal power supply, PS-1515 universal switching +/- 15VDC power supply with domestic connectors supplied. International AC connectors optional.
- Up to three units may be mounted on the optional RA-1 rack shelf. Desktop and wall mounting is also possible.

Inspection

Please examine your 2X6 DA PLUS carefully for any damage that may have been sustained during shipping. If any damage is present, please notify the shipper immediately and retain the packaging for inspection by the shipper. The package should contain the 2X6 DA PLUS, and a +/-15 VDC wall power supply with domestic connector. Manuals may be downloaded from our web site.

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OVERVIEW
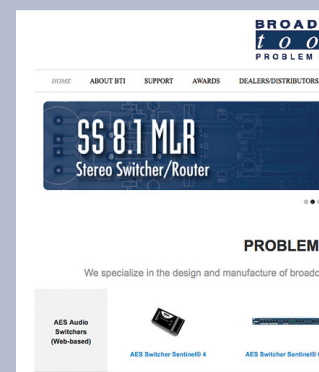
Installation/Operation

Power

Connect the supplied PS-1515 power supply's 3-pin AMP-style latching power connector to the unit and the +/-15 VDC switching power supply with domestic connector into a 120 Vac 50-60 Hz power source. The Power+ and Power- LEDs will light to indicate proper supply voltage.

NOTE: Never use any type of power supply other than the specified/supplied power supply.

Surge Protection

The 2X6 DA PLUS has built-in resistance to voltage changes; we recommend that you use a power surge protector or line conditioner on the incoming AC line. Lightning strikes and/or other high voltage surges may damage your 2X6 DA PLUS and connected equipment if it is not properly protected. For lightning protection devices, check out www.polyphaser.com and www.itwlinx.com.

UPS Standby Power System

We recommend that you connect your 2X6 DA PLUS to a UPS system. A UPS helps minimize the risk to the 2X6 DA PLUS and provides power during a power outage.

LED indicators

- "Power+" and "Power-" LEDs: Indicate positive and negative power supply.
- "LT Act" and "RT Act" LEDs: Indicate left and right audio input activity.

Input Connection

Connect your audio source to the DA's 5-position input terminal block. The input is labeled: "INPUT" "L-" "L+" for the left channel and "R-" "R+" for the right channel. Connect the cable shields to G (ground) connection. For unbalanced inputs, install a jumper between the "-" input and G (ground). Single (mono) inputs may be fed to all output channels by connecting the left and right inputs in parallel.

NOTE: Please verify proper phasing.

Input Level Switch

The input on the 2x6 DA Plus can be switched between two gain ranges using the rear panel "Input Level" switch. With the switch in the +4 dBu "in" position the input gain is set to accept a +4 dBu nominal signal. With the switch in the -10 dBu "out" position 12 db of gain is added to the input to accommodate consumer/low line level input signals.

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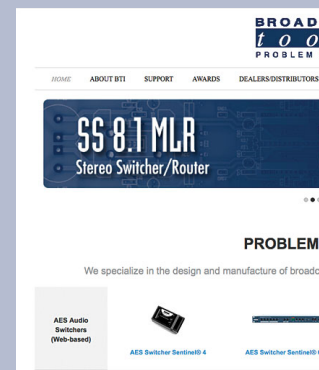
Audio Output Connections

The 2x6 DA Plus provides balanced analog stereo outputs on three pluggable 5-position euro-block style connectors. The output level is adjustable via front panel 1-turn trimmers labeled 1-6. Connect each load to the 2 x 6 DA outputs, labeled "OUTPUTS 1L-/1L+, 2L-/2L+ and 3L-/3L+". For unbalanced loads, use the "+" and GND terminals only. Do not connect the "-" terminal to ground. Shields should be tied to the "GND" terminals.

Output 1
(Top row, TB1)

1L-	1L+	Gnd	1R-	1R+
L-	L+	Gnd	R-	R+

Input
(Bottom row, TB1)

Output 2
(Top row, TB2)

2L-	2L+	Gnd	2R-	2R+
2L-	3L+	Gnd	3R-	3R+

Output 3
(Bottom row, TB2)

Stereo/Monaural Jumper Settings

Each stereo output can be set to output a monaural sum of the left and right input audio. Follow the silk-screened "Mono" labels on the PCB. If the jumper is installed, that output will be combined to monaural. Placing a jumper over JP1 converts output one to mono, JP2 output two and JP3 addresses output three. The factory setting is Stereo. The three stereo outputs operate independently; setting one output pair to MONO has no effect on the other pairs, and does not degrade the integrity of the other stereo outputs.

Output Level Adjustment

Use the front panel left (LT) and right (RT) level adjustment trimmers to set each output channel to the desired output level.
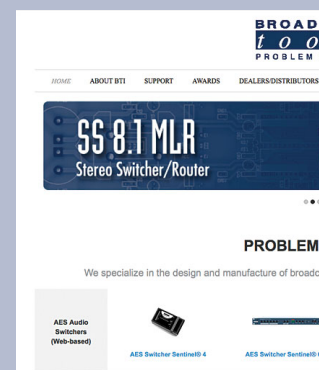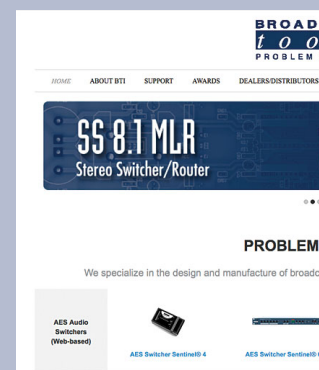
SPECIFICATIONS

Input Level: -10dBv or +4dBu nominal. Switch selectable. +24dBu max, @ 600

Input Impedance: 20K   balanced, 10 K   unbalanced

Output Level: +4dBu nominal, + 24dBu max, @ 600 , balanced

Output Impedance: 100   balanced, 47   unbalanced

System Gain: 20 dB

Frequency Response: +/- 0.2dB (20Hz – 20kHz)

Noise: 75 dB below nominal

Power: PS-1515 universal switching power supply with domestic AC connector supplied. International AC connectors optional. +/-15 VDC 400mA output with 3-pin AMP-style latching power connector.

Dimensions: 6 x 5.25 x 1.63 in (W x L x H)

Options: RA-1 Rack Shelf. 1 RU. Accommodates up to 3 units. PS-1515-500/IEC, AC line cord not supplied.

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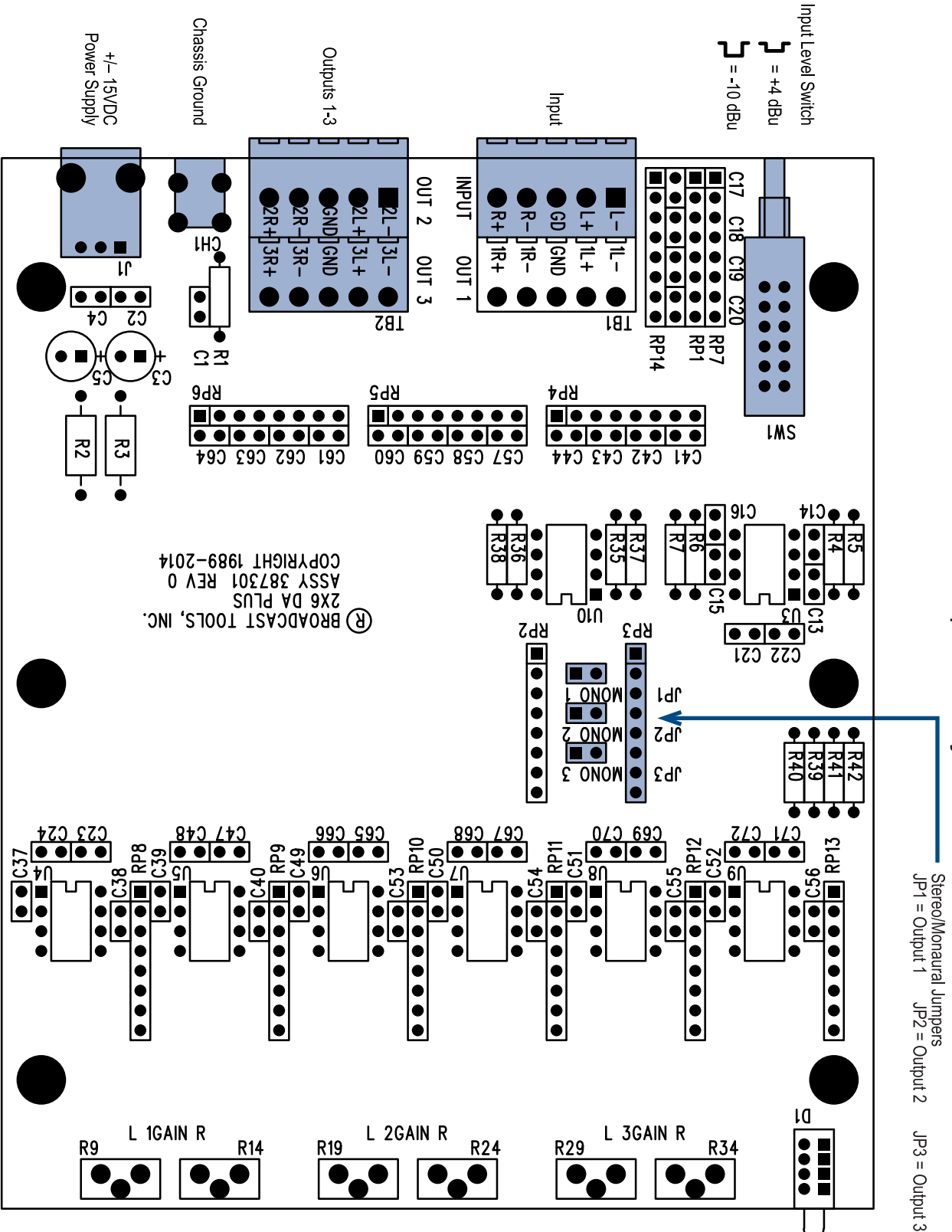
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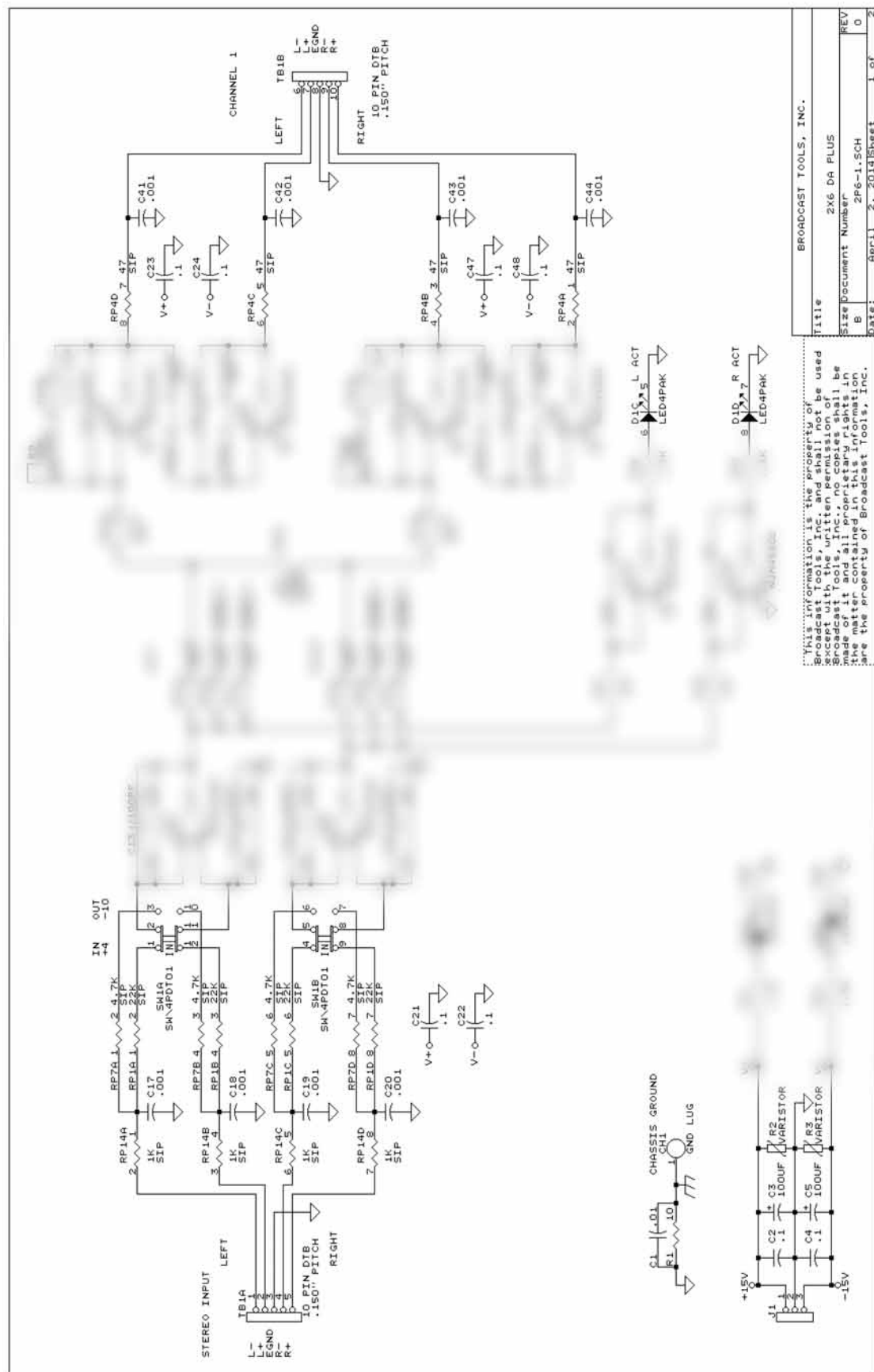www.broadcasttools.com **website**

2x6 DA Plus
Component Layout

Modification Date: 06/29/15

Input Level Switch
= +4 dBu
= -10 dBu

+/- 15VDC
Power Supply

Chassis Ground

Outputs 1-3

Input

INPUT   OUT 2   OUT 3

OUT 1

2R+ 2R- GND 2L+ 2L-
3R+ 3R- GND 3L+ 3L-
TB2

R+ R- GD L+ L-
1R+ 1R- GND 1L+ 1L-
TB1

C17 C18 C19 C20
RP14 RP1 RP7

SW1

J1

CH1

C2 C4

C1 R1

C5 C3

R2 R3

RP6
C41 C42 C43 C44
C64 C63 C62 C61

RP5
C57 C58 C59 C60

RP4

R38 R36
R35 R37
R7 R6 R5 R4
C16 C14
U10 C15 U3 C13

C22 C21

RP2 RP3

MONO 1 JP1
MONO 2 JP2
MONO 3 JP3

R40 R39 R41 R42

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C37 C23 C24
U4 RP8 C39 C47 C48
C38 U5 RP9 C65 C66
C40 U6 C49 RP10 C67 C68
C53 U7 C50 RP11 C71 C72
C54 C51 RP12 C71 C72
C55 U8 RP13
C52 U9 C56

L 1GAIN R
R9   R14

L 2GAIN R
R19   R24

L 3GAIN R
R29   R34

D1

Stereo/Monaural Jumpers
JP1 = Output 1   JP2 = Output 2   JP3 = Output 3

FRACTIONAL SCHEMATIC

Modification date: 06/29/15

APPENDIX

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FRACTIONAL SCHEMATIC

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Modification date: 06/29/15