

# ADA414

AUDIO DISTRIBUTION AMPLIFIER

INSTRUCTION MANUAL

IB 6421-01

COPYRIGHT  
ALL RIGHTS RESERVED  
7-19-2004

TABLE OF CONTENTS

	PAGE
<u>SHIPPING INSPECTION</u>	2
<u>HOW AND WHERE TO MOUNT THE UNIT</u>	2
<u>MODUAL CARD INSTALLATION</u>	2-3
<u>HOW TO CABLE THE AUDIO AMPLIFIER</u>	3
<u>POWER SUPPLY INSTALLATION</u>	3
<u>SET-UP OF THE AUDIO AMPLIFIER</u>	3
<u>OPERATION</u>	4
<u>FRONT PANEL CONTROLS AND INDICATORS</u>	4
<u>HOW TO SET THE INPUT LEVEL JUMPERS</u>	4
<u>HOW TO SET OUTPUT LEVEL JUMPERS</u>	5
<u>HOW TO SET OUTPUT CONFIGURATION JUMPERS</u>	5
<u>CARE AND MAINTENANCE OF THE UNIT</u>	5

## **SHIPPING INSPECTION**

Remove from shipping container and inspect for shipping damage. The ADA414 is a Slide in Card that fits into the RMS-400 Mainframe and Power Supply. The card is supplied with a retaining screw (attached to the PC Board), a Front Label Designator and this instruction book. If an RMS-400 Mainframe and Power Supply have been purchased with Card, the Card will be installed into the Mainframe with labels attached and the retaining screw engaged and locked.

## **HOW AND WHERE TO MOUNT THE UNIT**

Select a position for the RMS-400 that is near the audio signal or other equipment that needs audio distribution. The placement is not critical. Then install the ADA414 PC CARD in any unused CARD SLOT that is empty. Follow the instructions for card installation, be sure not to apply excessive force to the card during installation.

## **MODULE CARD INSTALLATION**

1. Select one of the un-used nine positions to be occupied by the new circuit board module.
2. Remove the blank label in that position by peeling it off of the front panel. Peel the label slowly to remove all of the label and adhesive. Any remaining adhesive may be removed by rubbing the surface with your thumb. **WARNING DO NOT USE SOLVENTS TO REMOVE THE LABEL ADHESIVE.** The solvent could damage the equipment cards or cause a fire.
3. Peel the backing off of the new label and apply it to the front panel of the RMS-400 rack in the position of the new card. Align the new label with the screw head in the hole in the lower right hand corner of the label, and then align the center thumbscrew with the clearance hole in the front panel. This should cause the label to be straight and vertical. When the label is in place press firmly the secure the label.
4. Then remove the thumb-screw retainer from the product card, it is located at the front of the card and is removed by rotating the knob counter-clock-wise.
5. Select any and all product options on the specific card.
6. Next slide the card into the card guides at the rear of the RMS-400. Be sure that the notch in the circuit card is facing forward and down. Push the card all the way to the front of the rack until it stops. **DO NOT APPLY EXCESSIVE FORCE TO THE CARD.**

## MODULE CARD INSTALLATION (cont.)

7. Insert the thumb-screw that was removed in step 5 while rotating it in a clock-wise direction. When it begins to thread into the card, continue until it is finger tight. CAUTION TIGHT BY HAND ONLY, DO NOT USE TOOLS TO TIGHTEN THE THUMB-SCREW. OVER TIGHTENING WILL DAMAGE THE CIRCUIT CARD.
8. Attach any cables or wires necessary for operation. If it is easier, you can attach the cables before inserting the PC card into the rack.

Most circuit board modules have several adjustments which are carefully factory set with precision instruments for optimum performance. Change only those which must be adjusted, some controls when mis-adjusted produce little change under normal operating conditions, but can seriously reduce the ability of the unit to function correctly under other conditions which may be encountered. Therefore, if you must adjust a control, place a mark on it before moving it, so that it may be returned to its original setting with reasonable accuracy.

## HOW TO CABLE THE AUDIO AMPLIFIER

The ADA414 has two removable screw terminal connectors for wiring the audio input and output. Just put the stripped audio wire into the connector and tighten down on the adjacent screw to firmly secure the wire.

For stereo audio connect the audio input cables to the Left and Right audio input. The inputs are balanced TIP and RING. If you are using Un-Balanced audio connect the + to the TIP and the - or Ground to RING. In stereo mode each input has 4 balanced outputs. Connect the audio cables in the same way with the + to the TIP and the - to the RING. This method will also be used with un-balanced outputs.

For Mono input and 8 outputs use the Left audio input only. The right input will be inactive with this configuration.

## POWER SUPPLY INSTALLATION

Power for the ADA414 is supplied by the RMS-400 Mainframe. It supplies the card with +/- 12 VDC to power the card.

## SET-UP OF THE AUDIO AMPLIFIER

The ADA414 is set to unity gain 0dBm at the factory. A front panel Audio Level control may be adjusted to set the level for optimum performance using the front panel meter.

## OPERATION

The ADA414 Audio Distribution Amplifier is used to amplify and distribute any BASE-BAND line level audio signal. The unique design allows the user to change the inputs and outputs to make any of the following amplifier configurations.

### SELECTABLE USER CONFIGURATIONS:

<u>INPUTS</u>	<u>OUTPUTS</u>	<u>AUDIO CHANNELS</u>
2 In	4 Out	2 Separate Channels 4 outputs each
1 In	8 Out	Mono input with 8 outputs
2 In	8 Out	Combines Left and Right to 8 Mono

The audio level for each input channel is adjustable to allow the user to set the proper level for the down stream equipment. This adjustment is useful when feeding signals to a DVR (Digital Video Recorder) or other digital devices. DVR's and digital devices are very sensitive to over-loaded audio level, so the ability to adjust the level prior to the device is sometimes necessary.

## FRONT PANEL CONTROLS AND INDICATORS

A 10 segment color L.E.D. indicator on the front panel shows that the audio DA is active. This indicator is a fast attack Peak Program reading audio Meter. This meter meets the DIN 45406 specification.

The PPM specifications require a finite "integration time" so that only peaks wide enough to be audible are displayed. It has a response of 1 dB down from steady-state for a 10ms tone burst and 4dB down for a 3ms tone burst. These requirements are consistent with the other frequently encountered spec of 2dB down for a 5ms burst and are met by an attack time constant of 1.7ms. Per this specification the return time is 1.5s to -20dB or 650ms decay time constant.

Two adjustable controls on the front panel set the audio level input. Clock-wise rotation increases the audio output.

## HOW TO SET THE INPUT LEVEL JUMPERS

The ADA414 should be set-up to work with your audio level input standard. To do this, pick the level that is nearest your input operating average program level (APL). Select either -10dBm, 0dBm or +4dBm APL. Use "J1 and J2 for the Right side and J3 and J4 for the Left side, set the Jumper from the center pin to the "0" or "+4" pin for 0 or +4dBm input. For -10dBm set the jumper on the center pin only. Repeat this step for both the Left and Right side.

## HOW TO SET THE OUTPUT LEVEL JUMPERS

The output level of the ADA414 can be set for three standard levels. When the front panel meter reads "0" the level programmed by these jumpers will be output. The Meter reads Peak Program Level. The output jumpers are marked in standard Average Program Level. Select the APL output level you wish and move the output jumpers on J5 for the Right side and J6 for the Left side. Set the Jumper from the center pin to the "0" or "+4" pin for 0 or +4dBm output. For -10dBm set the jumper on the center pin only. Repeat this step for both the Left and Right.

## HOW TO SET THE CONFIGURATION JUMPERS

The ADA414 can be configured for different applications by using the jumpers J7 and J8. Determine the operating configuration you desire and set the jumpers as indicated in the table. If a jumper is not selected the Jumper Clip should be hung on one pin to retain the jumper on the card. The unit comes factory set for Left/Right input and 4 channel output each for left and right.

J7	J8	CONFIGURATION
STEREO	STEREO	This provides Left and Right input with 4 outputs per side.
STEREO	MONO	This provides Left input mono with 8 outputs. Right input not used.
MONO	MONO	This provides Left and Right input combined to Mono with 8 outputs. This provides input stereo isolation and Mono combining.

## CARE AND MAINTENANCE OF THE UNIT

Care should be taken not to subject the ADA414 to extreme moisture or temperatures outside normal operating range. There are no periodic maintenance adjustments to be made on the ADA414 other than the front panel audio level set control. If the unit does not function properly it should be returned to the factory for repair.