



**SPECTRADYNAMICS, INC.**

**HIGH PERFORMANCE DISTRIBUTION AMPLIFIER  
HPDA100-RM-A  
OPERATING MANUAL**

**SPECTRADYNAMICS, INC** • 1849 Cherry St. Unit 2 • Louisville, CO 80027

Phone: (303) 665-1852 • Fax: (303) 604-6088

[www.spectradynamics.com](http://www.spectradynamics.com)

## HPDA100-RM-A Description



The HPDA100-RM-A is a high performance distribution and isolation amplifier. It contains 1 module that provides five unity gain outputs. Typical cross channel isolation and reverse isolation is typically greater than 100 dB. The phase noise of the modules is exceptionally low, typically  $-145$  dBc/Hz @ Fourier frequency of 1 Hz and  $-173$  dBc/Hz @ Fourier frequency greater than 10 kHz. Both the input and output are matched to 50 ohms to obtain better than 25 dB return loss. All outputs are AC coupled and the grounds are DC isolated to reduce the effect of ground loops.

**SPECTRADYNAMICS, INC** • 1849 Cherry St. Unit 2 • Louisville, CO 80027 • Phone: (303) 665-1852 • Fax: (303) 604-6088

[www.spectradynamics.com](http://www.spectradynamics.com)

Se habla español

# Safety and Preparation for Use



## **CAUTION!**

Voltages capable of causing injury or death are present in this instrument. Use extreme caution whenever the instrument cover is removed.

## **Line Voltage**

This instrument has been setup to operate on 100 to 120 VAC and a line frequency of 50 to 60 Hz. The unit can be converted to operate on a line voltage of 220 to 240 VAC. **For this option please contact SDI.**

## **Fuse**

A 0.25 Ampere 250V slow-blow fuse is used for 100 to 120 VAC operation. Only replace fuses with the same type and specifications.

## **Line Cord**

The instrument has a detachable, three wire power cord for connection to a grounded power source. The enclosure of the unit is directly connected to the outlet ground to protect against electrical shock. Always use an outlet with a protective ground and do not disable this safety mechanism.

## **Service**

Do not attempt to service or adjust the instrument unless another person, capable of providing first aid or resuscitation, is present. Contact SDI for any questions or repairs.

## **Operation**

To operate the unit, locate the AC power entry connector on the rear panel and connect the power cable. When power is applied to the unit, a red led located on the front panel, labeled "on", should light up.

## The Front Panel



### Power LED

The LED is on when power is applied to unit and the unit is operating properly.

### Monitor LED

The LED will turn on if the signal to the corresponding channel is greater than +7 dBm.

### SMA INPUTS

There is one amplifier module that has one input and five outputs. The signal to be distributed should be connected to the SMA jack labeled input.

### SMA OUTPUTS

The five outputs of each amplifier module are DC isolated from the chassis ground to prevent ground loops. Make sure that the amplifier ground does not float to a potential greater than 50 VDC from the chassis ground. An output ground potential greater than 50 VDC will damage the amplifier and could cause injury or death to personnel.

## The Back Panel



---

### AC POWER ENTRY MODULE

The HPDA100-RM-A is configured to operate on 100 to 120 VAC.

## Operation



**This unit is designed to operate only with a 100 to 120 VAC power source. For conversion to a different voltage of operation contact SDI.** To operate the unit, locate the power entry module on the rear of the enclosure and connect the power cord. Plug the unit into an appropriate power outlet. A red LED on the front panel labeled "POWER" will turn on. Attach the signal to be distributed to one of the SMA input connectors on the front panel. Any HPDA100 output may be used to drive the input of another distribution module.

# Specifications



## HPDA100 Module Specifications

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Max. Input Power	1 dB compression	15	16		dBm
Bandwidth	+/- 1 dB	80 - 120			MHz
Gain	@ 100 MHz			+/- 0.5	dB
Impedance	input output		50 50		Ohms
Return Loss	input(S11) 5MHz output(S22) 5MHz		-22 -30	-20 -25	dB
Distortion	+13 dBm		-45	-40	dBc
Isolation	output to output output to input	95 105	100 110		dB
Phase Noise	10 Hz 100 Hz 1 kHz 10 kHz		-158 -165 -171 -174	-155 -162 -168 -171	dBc/Hz

All tests done at 100 MHz and +13 dBm input unless otherwise specified.

# Warranty



The HPDA100-RM-A is warranted to be free of defects under normal operating conditions, as specified, for one year from the date of original shipment from SpectraDynamics, Inc (SDI). SDI's obligation and liability under this warranty is expressly limited to repairing or replacing, at SDI's option, any product not meeting the said specifications. This warranty shall be in effect for one (1) year from the date an HPDA-100RM-A is sold by SDI. SDI makes no other warranty, express or implied, and makes no warranty of the fitness for any particular purpose. SDI's obligation under this warranty shall not include any transportation charges or costs of installation or any liability for direct, indirect, or consequential damages or delay. Any improper use, operation beyond capacity, substitution of parts not approved by SDI, or any alteration or repair by others in such manner as in SDI's reasonable judgement affects the product materially and adversely shall void this warranty. No employee or representative of SDI is authorized to change this warranty in any way or grant any other warranty.