# Linear InGaAs Optical Receiver Lab Buddy with Automatic Gain Control up to 56 Gbaud

## RECOGNIZED IN THE MILITARY AND AEROSPACE ELECTRONICS INDUSTRY, DISCOVERY SEMICONDUCTORS DOES NOT FAIL TO DELIVER WHEN IT COMES TO THE DSC-R421.

The DSC-R421 is a linear PIN + transimpedance amplifier that is primarily designed for 4-level Pulse Amplitude Modulation (PAM 4) and NRZ-ASK (PAM 2) modulation formats up to 56 Gbaud symbol rate in 1310 nm and 1550 nm single-mode systems. The R421 offers a variety of user-adjustable characteristics such as mode of operation (AGC or manual gain control), RF gain, output amplitude, and bandwidth.

The DSC-R421 is available in Discovery's computer-controlled Lab Buddy instrument, where several critical parameters can be controlled and monitored locally or remotely using Standard Commands for Programmable Instruments (SCPI) compatible commands via standard RS232C-over-USB interface. The DC photocurrent can be monitored continuously over a nano-ampere (nA) to milli-ampere (mA) range on the Lab Buddy's digital display or via a custom GUI provided by Discovery. Additionally, the GUI can be used to control different functions of the DSC-R421 Lab Buddy.

DSC-R421 is available in a standalone Lab Buddy, or as a line card in our Configurable Lab Buddy platform.

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#### **OPERATING FEATURES**

- Two modes of operation: AGC or manual gain control
- Differential conversion gain up to 3000 V/W
- High responsivity at 1310 nm and 1550 nm
- Maximum differential RF output >500 mVpp
- Low optical PDL (0.05 dB typical)

### **APPLICATIONS**

- Ideal test and measurement optical front-end
- Ethernet: 400 GbE, 800 GbE
- InfiniBand EDR, HDR, and NDR
- Direct detection for PAM4 and NRZ-ASK.
- Fiber Channel: 32GFC, 64GFC, and 128GFC
- RF-over-fiber link

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