

**AL2174  
INTERFACER  
IOC802**



## **AUTOMATIC GAIN CONTROLLED (AGC) AMPLIFIER**

### **FEATURES**

- 19" W x 9" D x 3.5" H (2 U Rack Units)
- Rack Mountable
- Up to 7 Pluggable Interface Modules
- Front panel Module Adjustments
- Front Panel Power Indicator
- Pluggable Power Supply
- Two Independent Channels per Module
- DC to 20 MHz Response
- Input Level Range: 400mV p-p to 20V p-p into 75 Ohms
- Output Level: 2.83V p-p Adjustable (Manual) or Preset (AGC)
- Output Impedance: 75 Ohms
- DC Coupled Amplifier
- Buffered Output Test Point per Channel
- Harmonic Distortion:  $\geq 40$  dB Below Rated Output
- DC Offset: Adjustable Output Offset  $\pm 4$ V
- Channel-to-Channel Isolation:  $\geq 60$  dB at 20 MHz;  $\geq 80$  dB at 1 MHz
- Signal Port Return Loss:  $\geq 20$  Db
- Contributed Noise:  $\geq 60$  dB Below Rated Output

### **OVERVIEW**

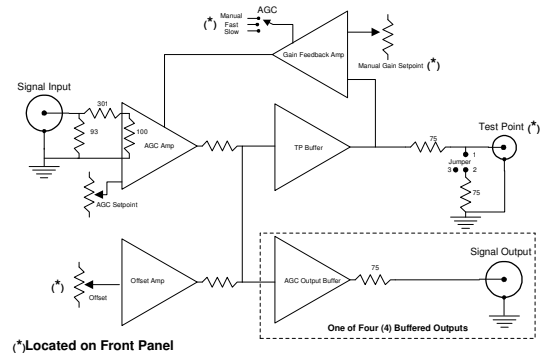
The Apogee Labs AL2174 Interfacer is a wide band, Automatic Gain Control (AGC) analog signal buffer amplifier system containing one or more IOC802 module(s). A typical use of the IOC802 is as an automatic gain control for telemetry receiver outputs that are input to recorders.

The AL2174 chassis houses up to seven (7) dual-slot IOC802 modules, each containing one signal input and four (4) buffered outputs. Front-panel access is provided for test points, toggle switches and trimmers. Each IOC802 module is a self-contained wideband AGC analog signal buffer amplifier. Front panel controls for each channel include an AGC mode selector (Fast, Slow attack / Manual), Offset control, and a Gain control. A Test Point connector provides an accurate buffered signal output.

The design of the 2174 and its complement of IOC802 modules stress the concepts of signal integrity, channel isolation and low noise contribution. So as to minimize the possibility of signal contamination, there is no interconnection between modules on the backplane of the chassis.



Figure 1: AL2174 REAR VIEW



(\*) Located on Front Panel

Figure 2: IOC802 Functional Block Diagram

## SPECIFICATIONS

### CHASSIS:

Size: 19" W, 9" D, 3.5" H  
 Weight: Less Than 15 Pounds  
 7 Card Slots

### POWER SUPPLY:

109-240 Vac (47-63 Hz)  
 75 Watts  $\pm 12V$

### ENVIRONMENT:

Operating Temperature:  
 0° to 50° C (32° to 122° F)  
 Relative Humidity:  
 15-95% Non-Condensing  
 Altitude:  
 Sea Level to 10,000 ft.

### IOC802 AGC AMPLIFIER:

1 DC-Coupled input per Module with 4 Outputs  
 Dual Slot Module (3" x 6" x 1.8")

### INPUT:

Isolated BNC Connector, One per Module  
 75 Ohm Shunt Terminated  
 Minimum Input Level:  $\pm 200$  mV  
 Maximum Input Level:  $\pm 10$  V  
 Input Impedance: 75 Ohms

### OUTPUT:

Isolated BNC Connector, 4 per Module  
 75 Ohm Series Terminated  
 Maximum Output Level: 2.83Vp-p

Output Resistive Drive: 75 Ohms

DC Output Offset  $\pm 4$  Volts

### FRONT PANEL TEST POINT:

Isolated SMB, One per Module  
 Series Termination: 75 Ohm  
 Shunt Termination: Jumper Enabled 75 Ohm

### PERFORMANCE:

FREQUENCY RESPONSE:

DC to 20 MHz  $\pm 0.5$ dB

HARMONIC DISTORTION

$\geq 40$ dB Below rated Output

NOISE

$\geq 60$ dB below rated output

SIGNAL PORT RETURN LOSS

$\geq 20$ dB

CHANNEL TO CHANNEL ISOLATION

60dB @ 20MHz; 80 dB @ 1MHz

### CONTROLS AND ADJUSTMENTS:

Switch Selectable Modes  
 AGC FAST (10 Milli-Second)  
 AGC SLOW (1-Second)  
 MANUAL  
 Manual Adjustments  
 Gain: -16dB to + 24 dB  
 Output Offset:

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