

# MODELS 3222/3322

40Vp-p PXIBus / PCIBus  
Signal Amplifiers



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Signal Amplifiers

- Large signal bandwidth to 15MHz
- Small signal bandwidth to 30MHz
- High amplitude to 40Vp-p (into high impedance)
- Slew rate to 500V/ $\mu$ s
- Low distortion
- Custom Configuration of:
  - Gain
  - Input impedance
  - Output impedance
  - Output configuration

Model 3222/3322 is a 3U single-slot, signal amplifier designed for signal amplification. Offering unmatched signal purity, model 3222/3322 amplifies signals from DC to over 20MHz. The unit has a fixed gain of x10, however, the same amplifier is available with custom gain, with no signal purity or performance degradation.

### Solves Common Problems

A common problem with PXI & PCI equipment is the inability to produce high voltages resulting from low power supply rails. For example, waveform generators or similar signal source devices draw power from 12V rails. Consequently, they cannot produce signals above 10Vp-p into 50 $\Omega$ . Model 3222/3322 solves this problem by using DC/DC converters to increase rail voltages which, along with custom components and unique design, enable amplification of input signals to 40Vp-p into high impedance, or 20Vp-p into 50 $\Omega$ .

### Allows Full Current Rating to Other Devices

The power amplifier draws current only from the +5V rail, leaving the other power supply rails free to supply their full current rating to other devices.

### Ground Level

Model 3222/3322 can be supplied with input and output connectors that are isolated from case ground allowing the amplifier to float from case ground level up to 250VDC. The only limitation is that both the input and output grounds must connect to the same ground level. This capability is extremely important in applications where the amplifying device must reside on the same ground level as its source. The floating capability can be added or removed using a simple, user-accessible jumper connection.

### Target applications

Although the model 3222/3322 wideband amplifier occupies a single slot, its performance is unique and outstanding by any standards. With 40Vp-p and over 20MHz

bandwidth one can use model 3222/3322 for virtually any application. A common application is in the automotive industry where signals need to be in the 12V to 28V range. Another application would be in the aviation industry where even higher levels are required to route signals throughout the aircraft body.

### Cost effective solution

Model 3222/3322 is a cost-effective, versatile power amplifier that opens the door to numerous applications, specifically implemented with PXI/PCI equipment.

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**TABOR ELECTRONICS Inc.**  
Since 1971

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## Specification

### CONFIGURATION

<b>Channels:</b>	1 single-ended output
<b>Interface:</b>	
3222	PXIBus
3322	PCIBus

### INPUT CHARACTERISTICS

<b>No. of channels:</b>	1
<b>Connector:</b>	Front panel BNC
<b>Impedance:</b>	50Ω or 1MΩ
<b>Coupling</b>	DC Coupled
<b>Damage Level:</b>	
50Ω	±2V
1MΩ	±5V
<b>Frequency Range:</b>	DC to 20MHz

### OUTPUT CHARACTERISTICS

#### GENERAL

<b>Connector:</b>	Front panel BNC
<b>Impedance:</b>	50Ω, 75Ω, or 600Ω
<b>Coupling:</b>	DC Coupled
<b>Protection:</b>	Short-circuit, 10 seconds
<b>Gain:</b>	x10 <sup>(2)</sup> , fixed
<b>Polarity:</b>	Normal or inverted
<b>Amplitude:</b>	0 to 20Vp-p into matching impedance 0 to 40Vp-p into high impedance

**Max. Output Current:** 200mA into 50Ω

### SQUARE WAVE CHARACTERISTICS

<b>Transition Time:</b>	<22ns
<b>Aberrations:</b>	<7%

### SINE WAVE CHARACTERISTICS

<b>Bandwidth:</b>	-3dB
Small Signal	50MHz, at 2Vp-p
Large Signal	20MHz, at 20Vp-p
<b>Accuracy:</b>	±(3% of full-scale amplitude range + 25mV), Square wave at 1KHz
<b>Flatness (10Vp-p):</b>	
DC to 1MHz	5%
1MHz to 15MHz	10%
<b>THD:</b>	0.1%, 10Hz to 100kHz
<b>Harmonics (10Vp-p):</b>	
100kHz to 5MHz	<-50dBc
5MHz to 20MHz	<-40dBc

### GENERAL

<b>Voltage:</b>	+5V
<b>Power Consumption:</b>	7.2W max.
<b>Current Consumption:</b>	3.5A max.
<b>Signal Ground:</b>	Floated to the same level as the source, 250VDC max. Single slot, PXI/PCI
<b>Dimensions:</b>	
<b>Weight:</b>	
Without Package	0.5kg
Shipping Weight	1kg
<b>Temperature:</b>	
Operating	0°C to 50°C
Storage	-40°C to 70°C
<b>Humidity:</b>	80% RH, non condensing
<b>Safety:</b>	CE Marked, IEC61010-1
<b>Calibration:</b>	1 year
<b>Warranty <sup>(1)</sup>:</b>	3 years standard

### ORDERING INFORMATION

MODEL	DESCRIPTION
<b>3222-50-50-10-I-G<sup>(1)</sup></b>	40Vp-p PXIBus Single Channel Signal Amplifier
<b>3322-50-50-10-I-G<sup>(1)</sup></b>	40Vp-p PCIBus Single Channel Signal Amplifier
<b>Input Impedance:</b>	<b>50</b> = 50Ω 1M = 1MΩ <sup>(3)</sup>
<b>Output Impedance:</b>	<b>50</b> = 50Ω 75 = 75Ω 600 = 600Ω
<b>Gain:</b>	<b>10, 1</b> through 10, fixed <sup>(2)</sup>
<b>Polarity:</b>	<b>I</b> = Inverted N = Normal
<b>Signal Ground:</b>	<b>G</b> = Tied to Ground F = Floated Ground

<sup>(1)</sup> Standard Configuration

<sup>(2)</sup> Custom gain from x10 to x20 can be ordered however, bandwidth may change.

<sup>(3)</sup> 1MΩ is available with none inverting output polarity only.

<sup>(4)</sup> Specification is given for the standard configuration only

<sup>(1)</sup> Standard warranty in India is 1 year.