Differential / Dual-Channel WideBand Amplifier

MODEL 9250

- **Large signal bandwidth to 15 MHz**
- **Small signal bandwidth to 30 MHz**
- **High amplitude to 40Vp-p (into high impedance)**
- **Slew rate to 200V/µs**
- **Low distortion**
- **Custom Configuration of:**
  - **Gain**
  - **Input impedance**
  - **Output impedance**
  - **Output configuration**

The 9250 is a bench-top, 2U, half 19" rack size, fully metal case dual channel amplifier. The instrument can be configured to be used as two, single-ended independent channels, or as a one input with two differential outputs.

Input Characteristics
The inputs to the amplifiers be configured to match different source impedances such as 50Ω, 75Ω, or 1MΩ and the outputs can be configured to match different load impedances such as 50Ω, 75Ω, or 600Ω. There are three inputs for each channel:

1. Main input. This input is located on the front panel is normally be used for signal inputs.
2. Auxiliary input. This input is located on the rear panel and can be used as a summing input.
3. DC Offset input. This input is also located on the rear panel and can be used for offsetting the signal level within the specified output level window.

Output Characteristics
The outputs are located on the front panel. There are two outputs, one for each channel. When the 9250 is configured as two separate amplifiers, the outputs generate amplified signals within the range of 40Vp-p into open circuit or 20Vp-p into matching load impedance. The bandwidth of the outputs is around 20MHz for large signals. Small signal bandwidth can reach 50MHz.

Instrument Configuration
The 9250 can be configured as a differential amplifier. In this case, the channel 2 input is disabled and channel 1 input is amplified and distributed differentially to both outputs. In this case, channel 1 output generates in-phase signal while channel 2 outputs an inverted signal that has exactly 180 phase offset to the normal output. Full amplitude and bandwidth is preserved when the 9250 operates in differential mode. The output impedance of the differential outputs is modified to 25Ω, 37.5Ω, or 300Ω for differential drive of 50Ω, 75Ω, or 600Ω loads. Using the differential mode, the 9250 does not sacrifice accuracy, nor does it sacrifice bandwidth.

Auxiliaries
The 9250 has two additional inputs for each channel allowing summation of two signals and providing an external control of DC level offset. These inputs are accessible from the rear panel only.

Target Applications
The amplifier case was designed to stack on top or below other Tabor products. It also can be mounted alongside a Tabor generator in a standard 19" rack. The waveform-amplifier combo is an ideal solution for virtually any high-voltage, wide bandwidth application.

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Service and Support

Beyond providing precision Test & Measurement instruments, Tabor Electronics provides unparalleled service and support, and is continuously finding new ways to bring added value to its customers.

Our after-sales services are comprehensive. They include all types of repair and calibration, and a single point of contact that you can turn to whenever you need assistance. As part of our extensive support, we offer individualized, personal attention Help Desk, both online and offline, via e-mail, phone or fax.

Tabor Electronics maintains a complete repair and calibration lab as well as a standards laboratory in Israel and USA. Service is also available at regional authorized repair/calibration facilities.

Contact Tabor Electronics for the address of service facilities nearest you.

Applications

For expert technical assistance with your specific needs and objectives, contact your local sales representative or our in-house applications engineers.

Manuals, Drivers, and Software Support

Every instrument comes equipped with a dedicated manual, developer libraries, IVI drivers, and software. However, if your specific manual is lost or outdated, Tabor Electronics makes it possible to log-on to its Download Center and get the latest data “in a click”.

Product Demonstrations

If your application requires that you evaluate an instrument before you purchase it, a hands-on demonstration can be arranged by contacting your local Tabor Electronics representative or the Sales Department at our Corporate Headquarters.

Three-year Warranty

Every Tabor Electronics instrument comes with a three-year warranty. Each one has full test results, calibration certificate, and CD containing product's manual and complete software package. Our obligation under this warranty is to repair or replace any instrument or part thereof which, within three years after shipment, proves defective upon examination. To exercise this warranty, write or call your local Tabor representative, or contact Tabor Headquarters and you will be given prompt assistance and shipping instructions.

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Specification
Differential / Dual-Channel WideBand Amplifier

Model 9250

INPUT CHARACTERISTICS

Number of channels: 2 with single-ended outputs; 1 with differential outputs
Connector: BNC
Impedance: 50Ω, 75Ω or 1MΩ
Coupling DC or AC
Damage Level: 12Vp-p (-6V to +6V peaks)
Frequency Range: (full power bandwidth)

DC to 15MHz	DC coupled, 50Ω input/output impedance;
40kHz to 15MHz	AC coupled, 50Ω/75Ω input impedance;
20Hz to 15MHz	AC coupled, 1MΩ input impedance;

OUTPUT CHARACTERISTICS

Specification is given for the standard configuretion only

GENERAL

Connector: BNC
Impedance:

Single-Ended	50Ω, 75Ω, or 600Ω
Differential	600Ω

Coupling: DC or AC
Protection: Short-circuit, 10 seconds
Gain: x10, fixed
(can be ordered from factory with different gain setting. Bandwidth may change with different gain configuration)
Polarity: Output normal
Amplitude: 0 to 20Vp-p into matching impedance (50Ω, 75Ω, or 600Ω); 0 to 40Vp-p into high impedance

SINE WAVE CHARACTERISTICS

Small Signal:
Bandwidth 30MHz, at 2Vp-p (-3dB)
Accuracy: ±(3% of full-scale amplitude range + 25mV), Square wave at 1KHz
Flatness (10Vp-p): ±5% of amplitude to 1MHz; ±10% of amplitude to 15MHz
THD: 0.1%, 10Hz to100kHz
Harmonics: <-50dBc, 100kHz to 5MHz
<-40dBc, 5MHz to 15MHz (10Vp-p)

SQUARE WAVE CHARACTERISTICS

Transition Time: <22ns
Aberrations: <7%

ENVIRONMENTAL

Operating Temperature: 0 - 50°C
Humidity: RH 80% (non-condensing)
Storage Temperature: -30°C - 80°C

GENERAL

Physical Size: 2U, half-rack size
Power Requirements: 85V to 265V, 47-63Hz, <25W
Dimensions: 3.5" x 8.3" x 15.4" (HxWxL)
Weight: Approximately 7Lbs
Signal Ground: Grounded to case ground
EMC Certification: CE marked
Reliability: MTBF per MIL-HDBK- 217E, 25°C, Ground Benign
Safety: Designed to meet IEC EN61010-1, UL 3111-1
Workmanship Std: Conform to IPC-A-610D
Supplied Accessories: Power Cord, CD containing Operating Manual
Warranty: 3 years standard

ORDERING INFORMATION

Dual-Channel / Differential WideBand Amplifier,

MODEL	**9250-10-50-50-D-S** (1)
Gain:	**10**, 15 or 20, fixed (2)
Input Impedance:	**50** = 50Ω 75 = 75Ω 1M = 1MΩ
Output Impedance:	**50** = 50Ω 75 = 75Ω 600 = 600Ω
Coupling:	**D** = DC A = AC
Output Configuration:	**S** = Two seperated channels D = Single channel with differential outputs (3)

(1) Standard Configaration
(2) Custom gain from x10 to x20 can be ordered however, bandwidth may change.
(3) Output impedance for differential drive is 600Ω only .

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