

Series 6000

For Testing and Calibration of Altimeters

Features

- Easy, repeatable operation
- Up to 8 switchable altitude cells
- Progressive or Discrete Altitude cells configurations
- Accurate amplitude balance
- External delay option
- Stable and repeatable performance
- Pulse and CW Operation
- 19-inch rackmount (3U)
- > 140,000 hours of operation in field environments

Configure Now



Global Provider of Test & Measurement Solutions



Series 6000 Altimeter Test Set

Eastern OptX Series 6000 Altimeter Test Set is designed to test and calibrate radar altimeter systems. The Series 6000 provides multiple, programmable delays with front panel and/or remote computer control. It features ultra wide bandwidth, low loss, high isolation, and high dynamic range. Able to simulate altitudes up to 50,000 feet, the test set operates from 4.2 to 4.4 GHz and offers altitude accuracy up to 0.1 %. Tests all Radar Altimeter models and technologies.

Technology Features

EOX fiber optic technology overcomes the shortcomings of conventional schemes such as acoustic, digital, and coaxial transmission line delays including:

- Quantization Errors
- Triple Transit Time
- Dispersion

Core Technology - Delay Lines

Our Core Technology enables the conversion of microwave signals to optical signals (E/O), time delaying this signal then reconverts the light back to original microwave signal (O/E) with superior fidelity over traditional time delay methods. Products include Radar Target Simulation, Radar Altimeter Testing, Channel Simulation (Air Interface) and multi-path creation. Many of our products allow users to test in a laboratory environment, resulting in dramatically lower costs and higher efficiencies than available with outdoor test ranges. Systems are available with fixed or programmable delays ranging from a few nanoseconds (2 feet) to hundreds of microseconds (150 miles), input RF frequencies of up to 40 GHz, internal attenuation control accurately simulates free space propagation loss. All features can be operated from the front panel touchscreen using the intuitive graphical user interface.



Series 6000 Altimeter Test Set



Series 6000 Altimeter Test Set Specifications

Parameter	Specifications	Notes
Frequency Range	4.2 to 4.4 GHz	Pulse and CW Operation
Altitude Accuracy	1 %	0.1% available
Altitude Repeatability	0.01%	At constant Temperature
System RF Gain *	6 dB (0.1 dB/us delay loss)	Typical, 8000 ft, 4.3 GHz
VSWR	2 : 1	Maximum
Spurious Free Dynamic Range	100 dB/Hz ^{2/3}	Minimum
1 dB Input Compression	30 dBm	Minimum
Noise Figure	50 Ω	Maximum (Lower NF optional)
Input/Output Impedance	19" Rack Per EIA-310-D	Nominal
Dimensions	120/230 VAC	3.5 (2U) to 8.75" (5U), 18-22" deep

Series 6000 Altimeter Test Set Options

Feature	Options / Description
Number of Delays	2 to 8
Altitude Values	50 to 50,000 ft (Round-trip delay)
Delay Configuration	Discrete (Individually, selectable cells), or Progressive 2n possible combinations of user selectable cells
Remote Control	Ethernet, TTL, USB, GPIB, None
Front Panel Control	Rotary Switch, LCD Touch Screen, Keypad, Toggle, None
RF connector	Type N or SMA (Jack (F)), Other connector types available.
Bypass	Yes / No. (Bypasses optical path)
Amplitude Control	Yes (< 0.5 dB total) / No (< 0.06 dB/μsec for the longest delay), (Delay to delay amplitude variation, contact factory for control options)
External Delay	Yes / No . (Optical ports provided for user connected, external fiber optic delay line)
Power Meter	Yes / No. (Built-in, average RF power meter)
Switching Speed	< 10 ms, (Remote control delay switching speed)
Power Option	120 VAC (60 Hz) or 230 VAC (50 Hz) (Alternates Available)





Series 6000 Altimeter Test Set



Series 6000 Part Number Configurator

Part Number

6	0	4	D	-	3	3	S	1	1	-	0	1	1	1	0	1	0
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Custom Options: (1) Yes or (0) No

Built In Self Test: (1) Yes or (0) No

Doppler*: (1) Yes or (0) No

Travel Case: (1) Yes or (0) No

Switching Speed: (1) <100 ms or (0) <10 ms

Power meter: (1) Yes or (0) None

External Delay: (1) Yes or (0) No

Amplitude Control: (1) Yes or (0) No

Bypass: (1) Yes or (0) None

RF Connectors: (N) N, (S) SMA, (k) K, (0) None

Front Panel Control: (1) Rotary Switch (2) Touchscreen (3) Keypad (4) Toggle (0) None

Remote Control: (1) USB (2) TTL (3) Ethernet (4) GPIB (0) None

Delay Configuration: (P) Progressive or (D) Discrete

Number of Cells: (2), (3), (4), (5), (6), (7), (8)

Power Option: (0) 120 VAC 60Hz (1) 230 VAC 50Hz

Series:

- (1) Single-Delay Radar Range Simulator
- (3) Multi-Delay Radar Range Simulator
- (6) Altimeter Test Set

Altitude 1 _____

Altitude 2 _____

Altitude 3 _____

Altitude 4 _____

Altitude 5 _____

Altitude 6 _____

Altitude 7 _____

Altitude 8 _____

Enter the desired altitude for each cell (in feet).

Note: Actual delay is two times the requested altitude (round-trip)



Series 6000 Altimeter Test Set



Delay Configuration Options

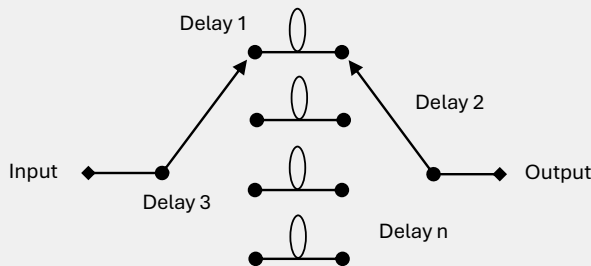
Progressive Delay

- Best solution for equally spaced delay step sizes
- Numerous possible delay combinations (Binary: 1, 2, 4, 8 etc.)
- More delays in a smaller package
- 1% overall accuracy

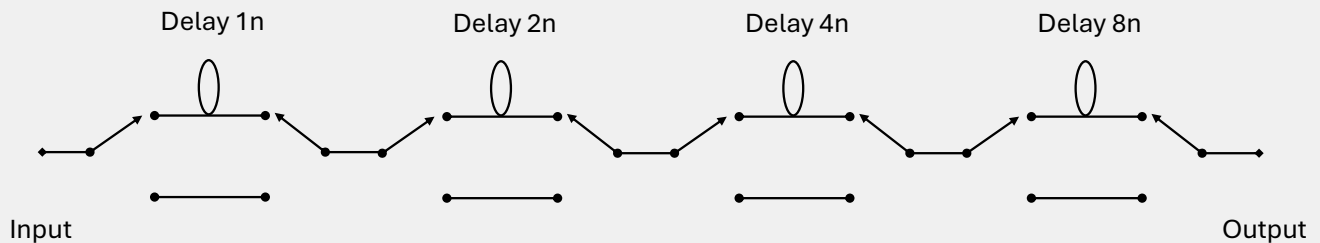
Discrete Delay

- Best solution for few delays or unequal delay steps sizes
- One to eight delays typical
- Better than 0.1% accuracy possible

Discrete Delay



Progressive Delay



Cell Delay Feature

- Up to eight (8) switchable delays can be configured separately
 - When ordering, let the Eastern OptX salesperson know the desired total round-trip delay for each cell (in μsec)
- Example: Delay 1 (5 μsec), Delay 2 (8 μsec)...

