

Altimeter Optical Delay Line



Key Features:

- Altitude range 1 to 100,000 feet
- Display Delay, Round-trip Distance, Range or Altitude
- Customizable Steps
- Supports frequencies from DC up to 6 GHz
- Pulse and CW
- Delay accuracy of 0.1%
- Customized solution with short delivery time
- High Dynamic Range
- Excellent Phase Noise
- USB API for automated tests

Options:

- RF and Optical bypass
- DC Power
- External Delay
- Amplitude Control
- Optical Power Meter
- Built-in diagnostics

Monitoring:

- Managed remotely by software or manually via a navigation switch

Applications:

- Radar Calibration Testing
- Altimeter

RFOptic's high frequency Altimeter Optical Delay Line (ALT ODL) provides a high-performance solution for testing and calibration of radar altimeter systems.

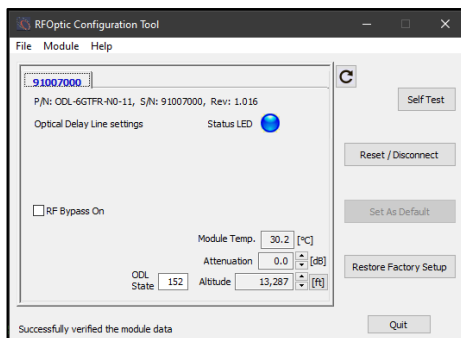
The RF input signal is converted into a modulated optical signal, which is then transmitted into a single mode fiber, creating a fixed time delay defined by the fiber length corresponding to a desired altitude. After passing through the fiber, the optical signal is converted back into an electrical RF signal, identical to the input RF signal.

The ALT ODL can be configured to emulate a single altitude or up to 4,096 altitude steps.

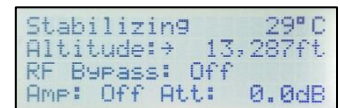
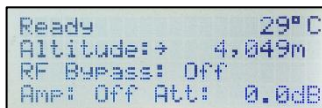
RFOptic's ODL unit is a compact solution, which provides superb signal performance and altitude simulation accuracy with an ultra-silent operation.

The control and monitoring is done using a front panel, a navigation switch, and a LCD display, or via a USB connection using RFOptic's configuration tool software. USB API is available for automated testing applications as well as Ethernet remote management with RFOptic's HTML/SNMP/REST remote management solution.

The Altimeter ODL offers very high accuracy up to 0.3ns for altitude steps under 6ft and > 0.1% above. The maximum altitude can reach 100,000 feet or 30Km in one enclosure.



USB GUI Screen



LCD Panel (in m and ft.)

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Electrical	Unit	Specifications (Typical)
Frequency Range ^[1]	GHz	0.1-6
Delay Range ^[2]	ft	1 - 100,000
Delay steps	ft	Custom (1ft, 2ft, etc.)
Number of Delays	each	1 to 4,096
Delay Accuracy	%	0.1
Delay Repeatability at +/- 5°C variations	%	0.01
Switching time	ms	10
1dB Compression Point	dB	-2
Minimum Noise Figure -LNA On	dB	6
SFDR	dB/Hz ^{2/3}	105
Gain Flatness	dB	±2.5
Maximum Input No damage	dBm	20
Spurious	dBm	-80
Phase Noise at 6 GHz at 10KHz offset	dBc/Hz	-130
VSWR Input / Output	dBm	2.1
Input / Output impedance	Ohm	50

Optical and Electrical		
Main AC Supply ^[3]	VAC	220/110
RF Connectors		SMA or N Type
Control – Manual (front panel)		Navigation Switch
Control – Remote (rear panel)		USB

Mechanical and Environmental Parameters		
Operating Temperature	C°	0 to +60
Storage Temperature	C°	-45 to +85
Dimensions	mm	Rack 19' -3U

[1] Other frequencies upon request

[2] Other Optical Delay Lines upon request

[3] For additional fibers spools

To order or for more information, please contact your local RFOptic distributor or send an email to sales@rfoptic.com