RFOptic
Optical RF Solutions

Low Frequency Mini ODL

Mini-ODL front panel

Key Features:

- Delays 1ns to 32µs up to 6Ghz
- Delay accuracy <0.5%
- High Dynamic Range
- Excellent Phase Noise
- Monitoring & Control – USB
- Power 5VDC 0.6A, (1.5A startup peak)

Monitoring:

- Managed remotely by software

Applications:

- Radar Calibration testing
- Signal and Phase Noise processing
- Extension of radar range site
- Clutter Canceler
- EW systems
- Altimeter

RFOptic's high-frequency up to 6Ghz Mini Optical Delay Line (Mini ODL) series provides a high-performance solution for testing and calibration of radar systems, or for RF communication. This series is intended for OEM integration but can be used as a stand-alone small form factor ODL.

The Mini ODL provides a true time delay for wideband RF signals using low-loss optical fiber. The Input RF signal is converted to an optical signal, delayed by one or more single-mode optical fiber sections and is converted back into RF signal at the output.

RFOptic's Optical Delay Line solutions offer accurate time delays and an ultra-silent operation.

RFOptic's Mini ODL solution, offered in a compact robust enclosure is recommended when single short delays of up to 32µs are required.

Monitoring & control provides performance indication, power saving options, diagnostics and BIT through the USB interface with the RFOptic Configuration tool under Windows OS or using the USB API for embedded applications.

RFOptic's Optical Delay Lines are used in a wide range of EW applications, such as Radar and altimeter testing, calibration, and simulation.

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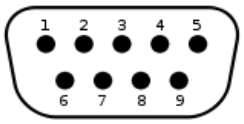
Low Frequency Mini Optical Delay Line

Electrical	Unit	Specifications (typical)
Frequency range	GHz	0.001 – 2.5, 3, 4 or 6
Delay range	µs	0.001 to 32
Delay Accuracy	%	0.5
Delay Repeatability for ± 5°C variations	%	0.05
Built in software-controlled Input and Output step attenuators	dB	Range 31.5, step 0.5 each
Gain Flatness	dB	± 2.5
LNA On state [1]	dB	31
1dB Compression Point (LNA Off/LNA On)	dBm	0 to -31
SFDR	$dB/Hz^{2/3}$	105
Maximum Input No damage	dBm	20
Spurious (input signal at Ip1dBc - 3dB at 1GHz) [2]	dBm	-85
Phase Noise at 2/4/6GHz at 10KHz Offset [2]	dBc/Hz	-135/-145/-150
VSWR Input / Output	dBm	2:1
Input / Output impedance	Ohm	50

Optical and Electrical		
DC Connector D-sub 9 pin	VDC	5 - 12
RF Connectors	-	SMA
Remote Monitoring & Control	-	USB

Mechanical and Environmental Parameters		
Operating Temperature	°C	0 to +60
Storage Temperature	°C	-45 to +85
Dimensions	mm	180(w) x 260(L) x 80(H)

[1] LNA On operation can be switched on for low RF input signals, by using RFOptic software.
[2] At LNA Off.
[3] For an additional information of this product, see brochures of *Programable 2.5/3/4/6GHz RF Over Fiber.*



D-sub 9pin Power and Data connector pinout

Function	Pin	Comments
DC Power	1	+5V to +12V
Ground	5	
USB D-	2	
USB Host +V	3	
USB D+	4	

* Standard USB connection optional

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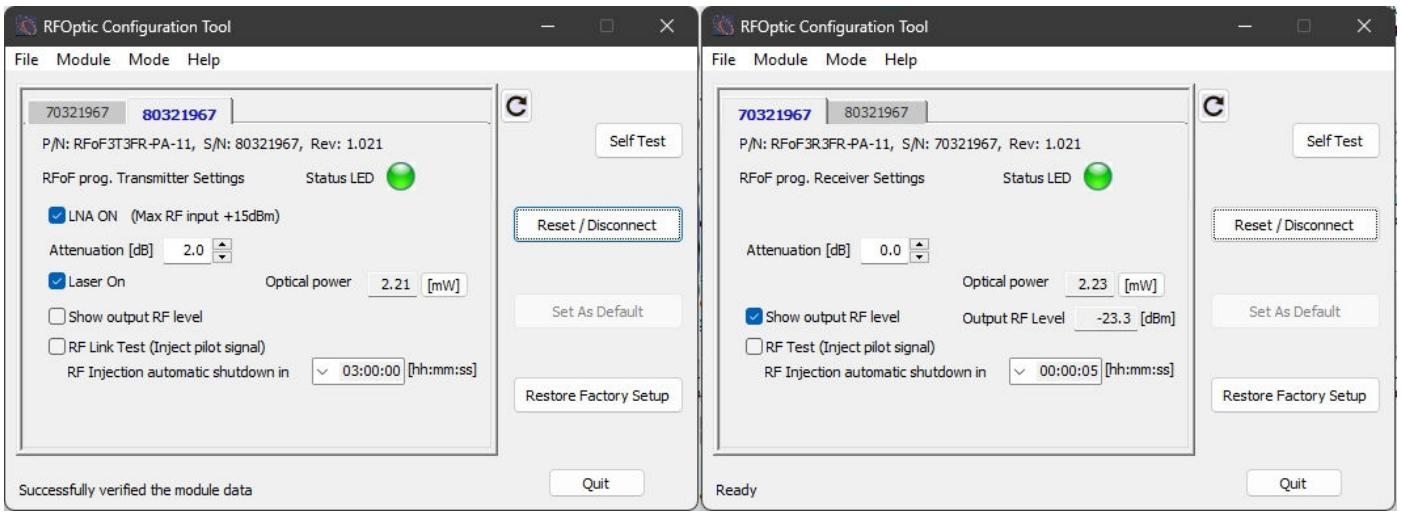
Management & Control

The mini-OD is supported by the RFOptic Configuration tool which is a free Windows based USB software that provides full control and management of the mini-ODL. It reports functional indicators as well as provides BIT and control functions. The software does not require installation or special drivers. It also a useful diagnostic tool capable of logging operational parameters for support actions.

For OEM applications the mini-ODL supports a programing API which is capable of performing similar function for control and Monitoring of the mini-ODL status.



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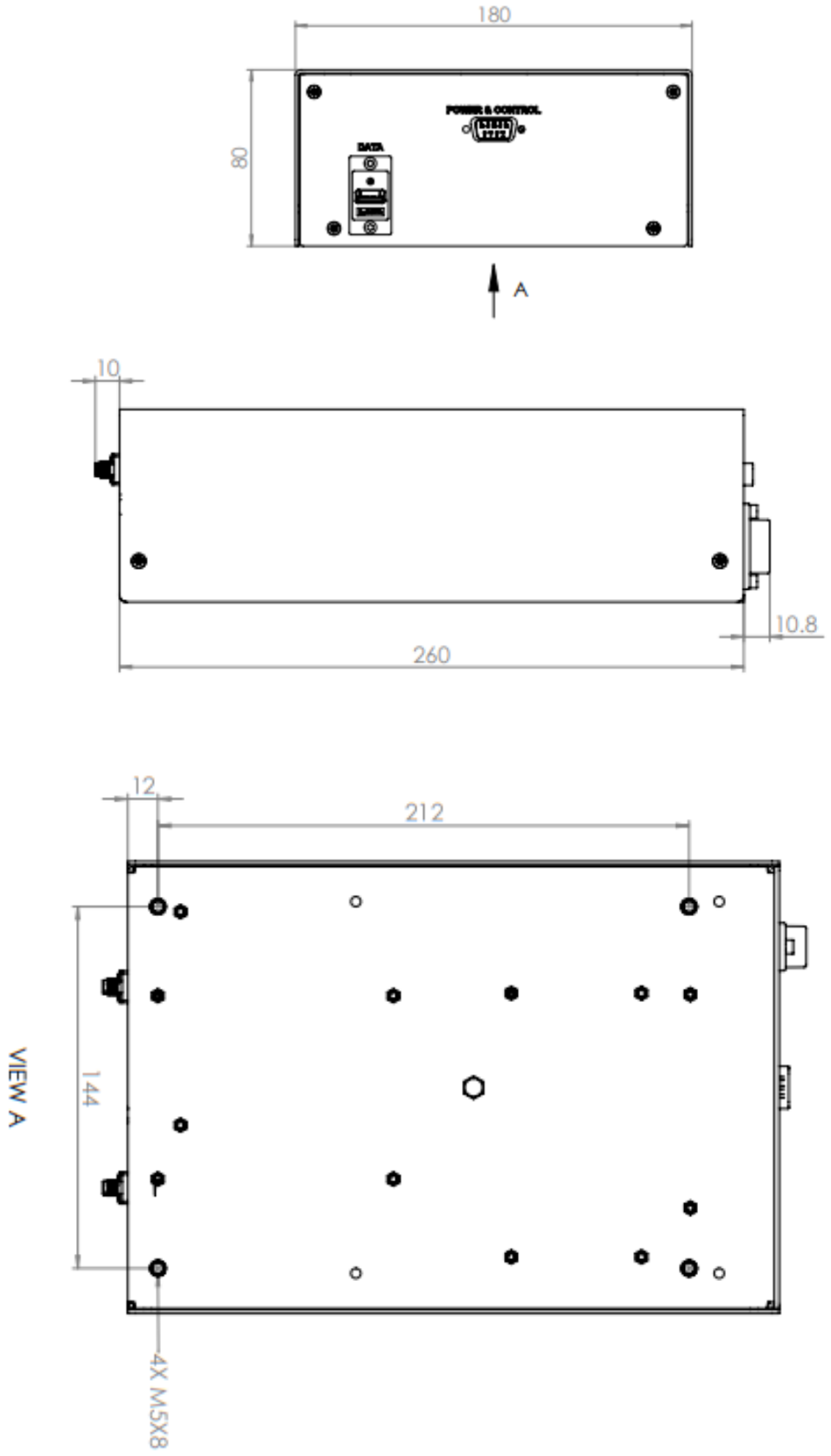
Mini Optical Delay Line Mechanical Outline



4 sealed M5 screw threads are available for OEM mounting of the mini-ODL on the bottom of the enclosure as indicated in the above drawing.

To order or for more information, please contact your local RFOptic distributor or contact us

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