

Fiber Coupled Optical Delay Line

ATS-LRD Series

Product Introduction

Advanced Terahertz Systems' fiber coupled delay lines are fully fiber coupled module for optical delay control. The standard version provides a tunable optical delay up to 1500 ps, while the resolution is lower than 1 um. Such an optical delay management unit is capable of compensation the optical delay variation when switching the Transmission mode, Reflection mode, Imaging mode and so on in time resolved systems. The optimized design grants extraordinary stability to the modules, ideal for long term operation. The optical delay modules can be independent instrument for "Plug in & use", and suitable for integrating into wide range of systems, such as:

- Terahertz Time domain spectrometers
- Optical coherence tomography (OCT) systems, and
- Other equipment and/or testing instruments where the long optical delay management is required.

The standard version *ATS-LRD-1500-PM1550* equipped with standard 1550 nm PM fibers with FC/APC pigtailed. Other type of fiber and connectors/pigtails are available upon requests. The delay unit has integrated controllers in the optical heads, and it is controlled via RS232 Port. Basic LabView (NI) program are provided for quick usage. Examples based on C, Python are available upon requests.

Recommended combinations

For ultrahigh speed (up to 40 spectrum/s), high precision (0.1 um resolution) optical delay management, we recommend the *ATS-LM-S-12* Fiber Series Fast Scanner.

In THz TDS system, *ATS-LRD-1500* is recommended to be on the probe/detector line, while *ATS-LM-S-12* Fiber Series on the Pump line. *AFG-400* module is recommended for THz signal amplification, *DCHV* module for DC bias up to 120V and *ACHV* for high speed AC modulation up to 50 kHz with ± 50 V (peak amplitude).

Specifications (ATS-LRD-1500)

Optical Delay Range	1500 ps (Typical 1550 ps)
Optical Delay Resolution	0.6 um or 2 fs (calculated from encoder counts)
Optical damage power	150 mW (Ultrashort pulse laser)
Insertion loss	< 3dB (typical 2dB)
Power in	12-24 V DC
¹Control	Integrated controller with RS232 communication
²Dimensions	25.1 cm × 6.0 cm × 3.8 cm

Notes:

¹The drivers are integrated in the optical module.

²The dimensions exclude the optical and electrical connectors.

Advanced Terahertz Systems Pte Ltd.

229 Loyang Rise, Singapore

Contact: Dr. Wu Yang

HP: +65-81789557

Email: wuyang@tuotuo.com

Technical Support: Techsupport@tuotuo.com

Compatibility test:

The **ATS-LRD-1500** series has been tested in an all PM fiber constructed THz TDS system, and the performance matches all the needs.

Product Code

Please contact us for the availability if your needs are beyond the listed terms

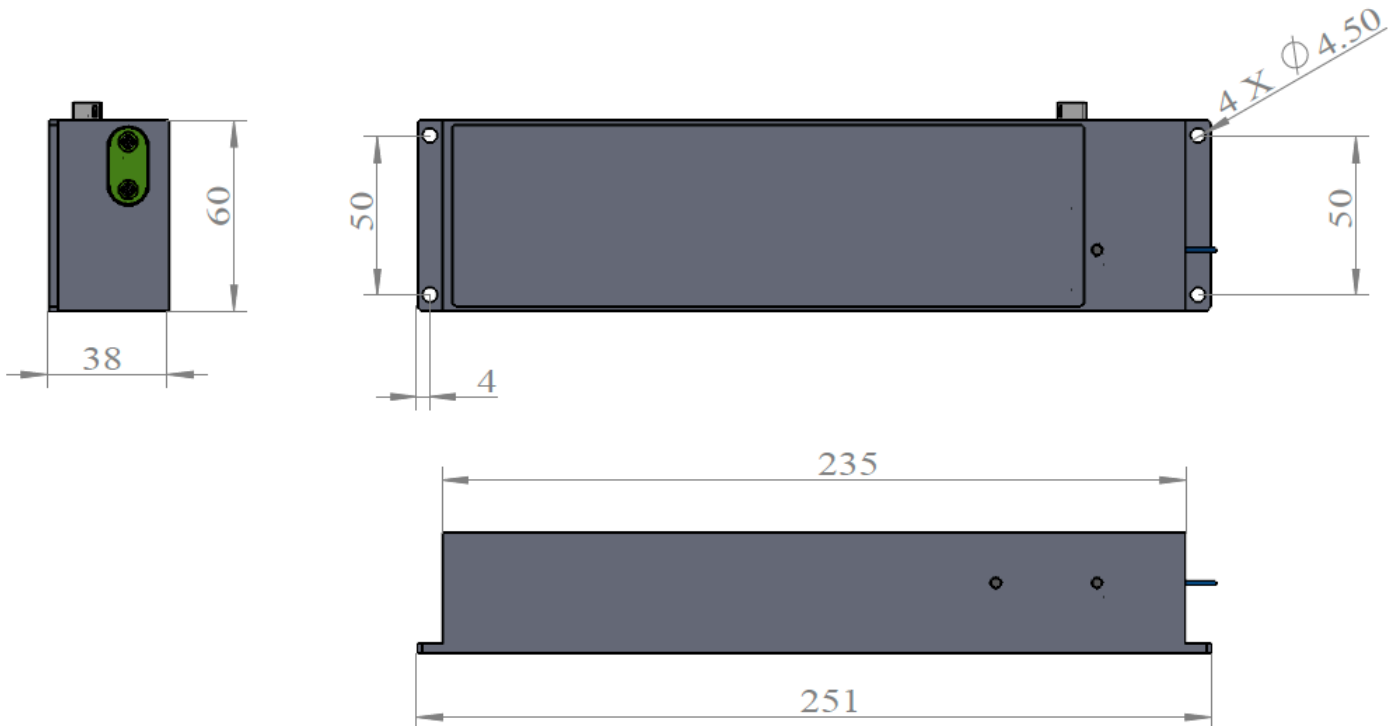
ATS	-LRD	-XXXX	-XXXX	-XXXX	-XXXX
↓	↓	↓	↓	↓	↓
A product of Advanced THz Systems	Long range delay series	Optical delay range: 800 for 800 ps 1500 for 1500 ps 2000 for 2000 ps	Fiber type: PM1550 SM1550 PM1030 ...	Fiber length: Min: 0.3 Meter Max: 10 meter	Patch cord: FC/APC FC/PC SC/PC LC/PC ...

Caution!

- Precision instruments, handle with extra caution.
- Usage and storage out of controlled environment leads to lower performance.
- Disassemble the module with lead to the warranty void immediately.

3D drawing of the Fiber coupled long range delay line

All the dimensions are in mm.



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