



Wintek Technology (S) Pte Ltd
CR (GST) No.: 200412624Z

OFDR-Optical Frequency Domain Reflectometry



OFDR is a high sensitivity and high precision fiber reflectometry for measuring the optical components or monitoring fiber network with millimeter spatial resolution and kilometers distance range. It utilize the frequency-sweeping interferometry to measure backscatter light in fiber with -90 dBm sensitivity and 1.5 mm spatial resolution, and is perfect for application in fault location in fiber network, fiber sensing and fiber measurement.

Application:

- Fault location in the fiber communication network
- Monitoring fiber sensing network inside spacecrafts, aircrafts, ships, vehicles, etc.
- High precision measurement of fiber length or fiber delay.

Characters:

- Up to 3 kilometers maximum measurement distance
- 1.5 millimeter spatial resolution (less than 500 m distance) or 3 mm (500 m ~ 3 km distance).
- Up to -90 dBm detection sensitivity.
- 70 dB dynamic range.
- less than 6 second measuring time.

Wintek Technology (S) Pte Ltd

Admin Office: 192 Waterloo Street #05-01,
Skyline Building, Singapore 187966

Operation Office: TUV SUD PSB Building
1 Science Park Drive, B2-59/60, Singapore 118221

Tel: 67779800, 67779051, 67747932, 67746201, Fax: 67746201, 31330908

Email: sales@wtktech.com, web: www.wtktech.com



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Highlights:

- **High spatial resolution.**
The large scale frequency-sweeping laser in OFDR delivers a high spatial resolution up to 1.5 mm, which guarantees a precision measurement of the fiber length and fault location in fiber network.
- **Low Noise Level.**
The adoption of servo control for laser frequency sweeping and phase noise compensation scheme in OFDR promoted the signal to noise ratio (SNR), which enlarged the dynamic range and maximum measurement distance, and achieved 3 km measurable device length.
- **High Sensitivity.**
The polarization diversity coherent detection keep the issue of polarization in measurement away, which improved the sensitivity of OFDR to -90 dBm.

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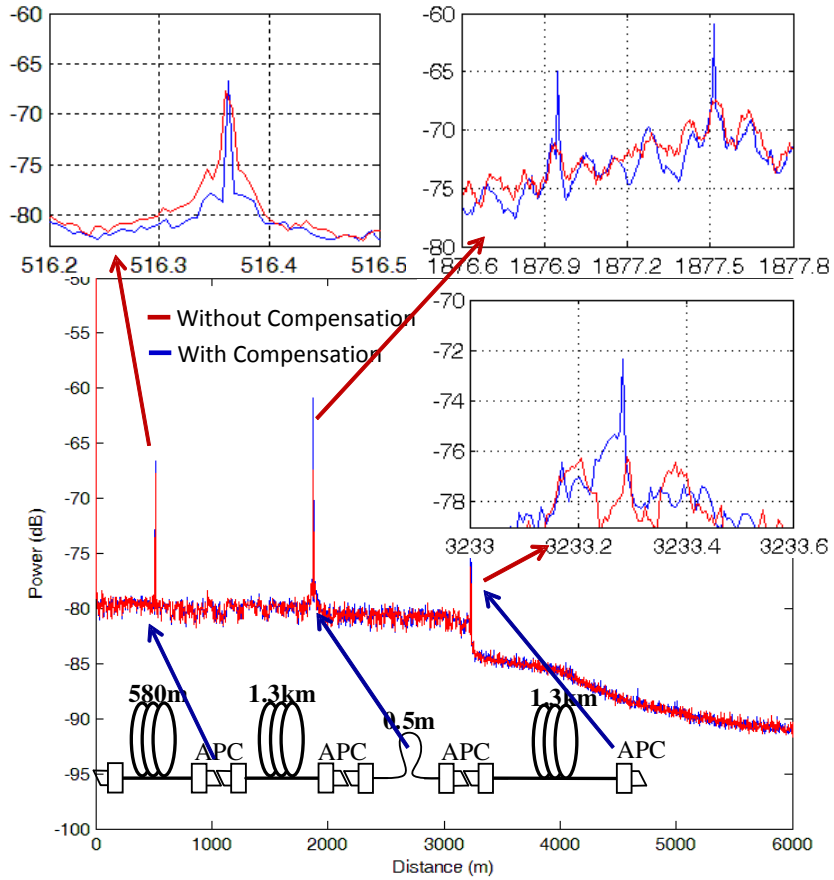
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A typical OFDR measurement result

PARAMETER	SPECIFICATION	UNITS	REMARKS
Physical			
Weight	15	kg	
Dimensions	60(W)×50(H)×30(D)	cm	
Optical Connector Type	FC/APC		
Fiber Under Test	10 μm/125 μm SMF (ITU-T G.652)		
Measurement*			

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Wavelength	1550	nm	
Maximum Device Length	3	km	
Spatial Resolution (two-points)	1.5	mm	Distance under 500 m
	3		Distance between 500 m~3 km
Dead Zone	1.5	mm	
Length Accuracy	±0.001%		
Dynamic Range	>70	dB	
Sensitivity	-90	dB	
Measuring Time	<6	second	
Fiber Index	1.30000~1.70000		
Display			
Display Range	-100~10	dB	
Display Resolution	0.001	dB	
Environment			
Working Temperature	20~30	°C	
Power Supply	220 V / 300 W max		
Safety			
Maximum Optical Power	0.5	mW	
Laser Safety	CLASS 1		

* These parameters is in the condition of 20 average times.

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