

## SAT-18EA series OTDR



SAT-18EA Series OTDR is the newest instrument mainly used to measure the physical characteristics of optical fibers, such as the length, the transmission loss and splice loss etc. also can locate the fiber faults or breaks. which widely applied in manufacture, construction and maintenance in optic fiber communication system. It supports automatic and real-time test mode, which can guarantee engineers to examine and detect optical fibres or cables in core, metro, and access network with high flexibility, efficiency, and convenience.

Meanwhile, its operation system interface has high similarity with Android GUI, significantly simplifies the test procedure

### Features:

- Novice mode with automatic trace diagnostics, one-button setup and events detection;
- Markers for distance, attenuation, reflectance, and splice loss;
- Dynamic range up to 45dB;
- SR-4731.sor file formats;
- Support VFL;
- Support iOTA (Optional);
- Support power meter (Optional);
- Support light source (Optional);
- Event dead zone is less than 0.6m;
- Attenuation dead zone is less than 4m;
- The minimum sampling resolution is 4cm and the sampling points up to 256,000;
- Remote measurement via RJ45 connection using AITELONG OTDR Desktop software.



## Entire New Design, One Button 'Auto' Test

SAT-18EA Series OTDR Test Set has few models to meet various test environment. Specific information has been demonstrated in below:

Product	Wavelength	Dynamic Range
<b>Regular OTDR</b>		
SAT-18EA-13A	1310/1550nm	45/45dB
SAT-18EA-13B	1310/1550nm	43/42dB
SAT-18EA-13D	1310/1550nm	35/34dB
SAT-18EA-13E	1310/1550nm	32/30dB
<b>PON OTDR</b>		
SAT-18EA-134	1310/1550/1625nm	39/37/38dB
SAT-18EA-1234	1310/1490/1550/1625nm	39/37/37/38dB
SAT-18EA-1235	1310/1490/1550/1650nm	39/37/38/37dB
SAT-18EA-12345	1310/1490/1550/1625/1650nm	40/39/39/39/39dB

## SAT-18EA Series General Specifications

<b>GENERAL SPECIFICATIONS</b>	
Screen	5.6 inch TFT touch screen (800×480)
Other Interface	
USB	USB, type A port, 2
Ethernet	10/100M Base-T, RJ45
Other Parameters	
Storage	16G
Size and Weight	161(H) x 210(W) x 46(D)mm; 1.0kg
Temperature	Operating: -10°C to 50°C; Storage: -40°C to 70°C
Relative Humidity	0% to 95% (non-condensing)
EMC	EN55022/CIPSR22; EN61000-3-2; EN55024
Battery and Power Supply	
Battery	Rechargeable Li-Lon battery; Working time: 8 hours; Charging time: <3 hours (typical: 25°C)
Power Supply	<ul style="list-style-type: none"> <li>• Input: 100-240V AC, 50-60Hz, 2A;</li> <li>• Output: 15V DC, 2A</li> </ul>



## SAT-18EA Series Technical Specifications

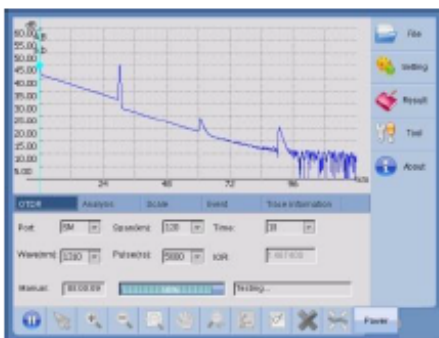
TECHNICAL SPECIFICATIONS			
Wavelength	1310±20 nm 1550±20 nm	1490±20 nm 1625±10 nm	1650±7 nm
Dynamic Range (SNR=1) at 25°C	30 to 45 dB, <b>Typical at 20us</b>		
Fibre under Test	9µm/125µm single-mode optical fibre (ITU-T G.652)		
Pulse Width	3, 5, 10, 30, 50, 100, 275, 500, 1000, 5000, 10000, 20000 ns		
Distance Range	0.5, 2.5, 5, 15, 40, 80, 120, 160, 200, 240 km		
Event Dead Zone	≤0.6 m		
Attenuation Dead Zone	≤4 m		
Sampling Resolution	0.04 to 2m		
Sampling Points	256K		
IOR	1.30000 to 1.80000		
Linearity	±0.05 dB/dB		
Distance Uncertainty	±(0.75+0.0050%×distance + sampling resolution) m		
Measurement Time	1s to 300s, Real time		
OTDR Port	<ul style="list-style-type: none"> <li>• FC/PC (Standard),</li> <li>• SC/PC (Optional),</li> <li>• LC/PC (Optional)</li> </ul>	<ul style="list-style-type: none"> <li>• FC/APC (Standard iOTA)</li> <li>• SC/APC (Optional iOTA),</li> <li>• LC/APC (Optional iOTA)</li> </ul>	
VFL	Wavelength	650±20nm	
	Output Power	+10dBm	
	Operation mode	CW, 1Hz	
Power Meter (Optional)	Wavelength	780 to 1800 nm	
	Calibrated wavelengths	850, 1300, 1310, 1490, 1550, 1625 nm	
	Measurement range	+10 to -60 dBm	
	Resolution	0.01 dB	
Light Source (Use OTDR port, Optional)	Wavelength	1310/1550 ±20 nm	
	Output power	>-4 dBm	
	Operation mode	CW, 270Hz, 330Hz, 1KHz, 2kHz	
Intelligent optical link topology analysis (Optional)	Intelligently combine different pulse width, one time get loss and return loss of fibre and splitter. Multiple pulse acquisitions and algorithms to deliver detail information of every element on the fibre		
Intelligent network test tools (Optional)	The iNET include PING, Trace Route, FTP upload and download, and HTTP features for Ethernet Link Fault check testing.		
Laser Safety	IEC 60825-1: 2007: CLASS 1; 21 CFR 1040.10		



## iOTA – Intelligent Optical Link Topology Analysis

Traditional OTDR only can display loss and event list of fibre link. Event types and link topology requires an experienced engineer to analyse manually. However, rapid growth of FTTH deployment demand definitely increases engineer’s workload and operator’s labour cost. iOTA function of AITELONG provides more comprehensive analysis of fibre link, assists engineer to deploy, operate, and maintain optical fibre network more easily

**Traditional OTDR Trace Interface**



**iOTA—Intelligent Optical Link Topology Analysis**



Link topology chart

Link information

### iOTA Test Principles

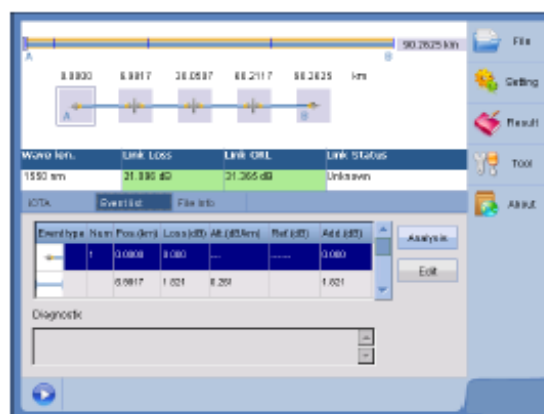
iOTA intelligently combines different pulse widths, only needs one time and one button can get loss and return loss of fibre and splitter. Multiple pulse acquisition and algorithm can deliver more detail information of every element of the fibre link.

Using multiple pulse for data acquisition

Analyse data repeatedly

Merge multiple analysis data

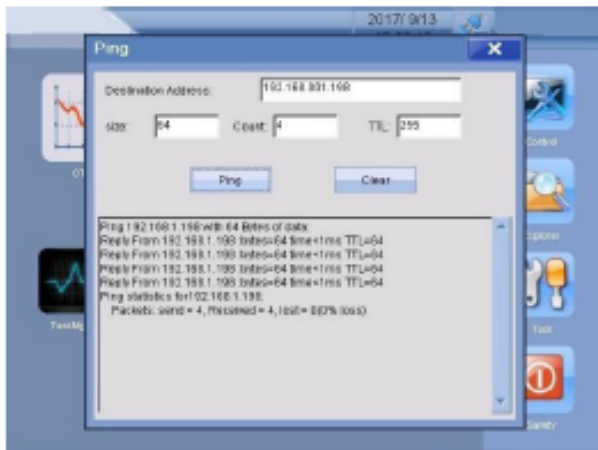
Multiple test only need to press ONE button, no longer need to analyse curve manually!



## iNET – Intelligent Network Test Tool

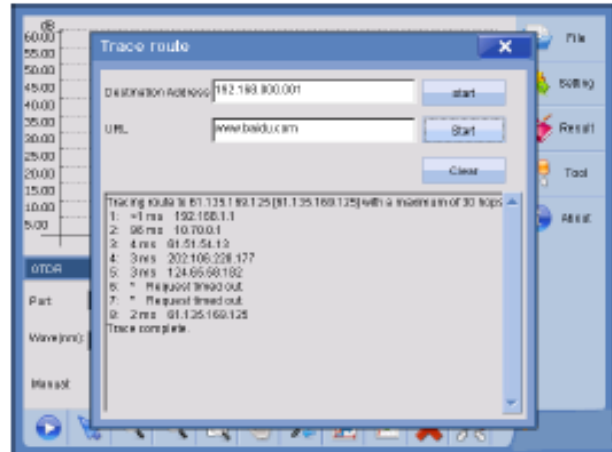
Traditional OTDR only can determine the defects occurred in physical optical fibres. However, during the installation and maintenance of FTTH, it always requires to determine the defects which occurred in data layer. The iNET function of AITELONG integrates common Ethernet testing methods, such as Ping, Traceroute, FTP, and HTTP; can verify Ethernet performance with high efficiency and reduce operation cost greatly

### Network test tool—Ping



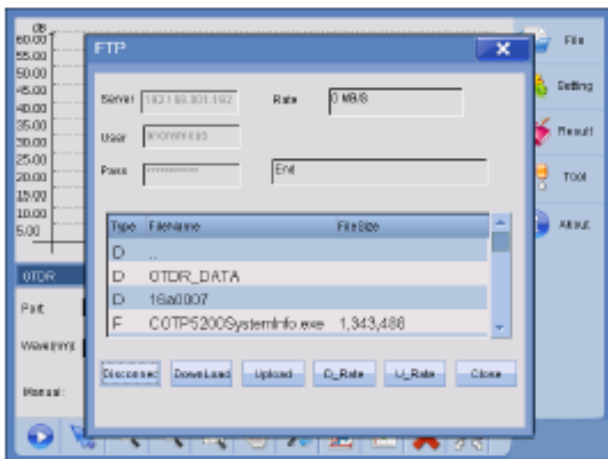
**Ping—quick verification whether network connect**

### Network test tool—Traceroute



**Traceroute—quick search network route path**

### Network test tool—FTP



**FTP—quick test FTP upload, download speed**

### Network test tool—HTTP

**HTTP—HTTP protocol testing**