Product Datasheet - Technical Specifications

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The Ceyear-6481C (AV6418C) OTDR is a mini test instrument designed for FFTx networks. It is mainly used to measure the physical characteristics of optical fiber and cables including length, transmission loss and splice loss etc. It can also accurately detect the positions of events, such as splices, far end and breaks, along the optical fiber line. It can be used in a variety of applications in the engineering construction, maintenance test, and urgent repairing of optical fiber communication systems, as well as R&D, manufacturing, and test of optical fiber and cables.

The Ceyear-418C OTDR adopts the most advanced technology of double color and material integrative mould, which makes it verry rugged and robust. With both touch screen and keypad, the operation is quite convenient. The built-in advanced antireflection LCD makes the operation interface easy to read even in the field. The instrument has 4-path of optical interface which can simultaneously realize the functions of an optical power meter, VFL, single-mode and multi-mode tester. The connector type is exchangeable, which makes it more convenient to clean the end surface of the fiber. The instrument has multiple external interfaces. It can not only be remote-controlled via Ethernet interface, but can also perform data communication with U disk, printer and PC via two different types of USB interfaces. The test result can be saved in the instrument, or to an SD card via SD interface. With a large capacity lithium battery, the Ceyear-6418C OTDR can continuously work over 8 hours, which is very suitable for field work.

Main Features:
- ≤0.8 m ultra-short event dead zone, easy to test optical fiber jumper.
- 45 dB large dynamic range, 256 k data sampling points.
- The most advanced technology of double color and material integrative mould, strong and firm.
- Advanced antireflection LCD, clear display interface in field.
- Various test modes, touch screen and keypad operation.
- Automatic detection of the communication light signal.
- Remote control via Ethernet.
- Two USB interfaces: Can connect to the external U disk, or communicate with PC through SyncActive software.
- Support Bellcore GR196 and SR-4731 file format.
- Alarm on low voltage of the battery.
- WinCE window operation system, English operation interface.
- Built-in visible fault locator (VFL) and optical power meter function.
- Exchangeable optical output connector, more convenient for surface cleaning.
- Online upgrading of application software, no need to return back to the manufacturer.

Ordering Code			
Ceyear-6418C	**- XXxx**	**- yy**	**- V/P/S**
Mainframe	**OTDR module XX**	**Optical connector**	**Options**
	11: single-wavelength for SMF	FA: FC/APC	/V: VFL
	12: single-wavelength for MMF	FU: FC/UPC	/P: OpticalPowerMeter
	21: dual-wavelength for SMF		/S: LightSource
	22: dual-wavelength for MMF		
	31: triple-wavelength for SMF		
	41: quadruple-wavelength for SMF		
	xx sequence number of OTDR module (see table below)		

| OTDR Modules[1]					
Module No.	Operating wavelength	Fiber type	Dynamic range[2]	Event deadzone[3]	Attenuation deadzone[4]
Ceyear-6418C-1103	1625 nm	Single-mode	38 dB	0.8 m	10 m
Ceyear-6418C-1104	1625 nm (built-in filter)		36 dB		
Ceyear-6418C-1105	1650 nm		38 dB		
Ceyear-6418C-1106	1650 nm (built-in filter)		36 dB		
Ceyear-6418C-1201	850 nm	Multi-mode	24 dB	1.6 m	10 m
Ceyear-6418C-1202	1300 nm		36 dB	1.6 m	10 m
Ceyear-6418C-2101	1310/1550 nm	Single-mode	42/40 dB	0.8 m	10 m
Ceyear-6418C-2102	1310/1550 nm		40/38 dB		
Ceyear-6418C-2103	1310/1550 nm		37/35 dB		
Ceyear-6418C-2104	1550/1625 nm		38/38 dB		
Ceyear-6418C-2105	1550/1625 nm (built-in filter)		36/36 dB		
Ceyear-6418C-2106	1550 /1650 nm		38/38 dB		
Ceyear-6418C-2107	1550 /1650 nm (built-in filter)		36/36 dB		
Ceyear-6418C-2108	1310/1550 nm		45/43 dB		
Ceyear-6418C-2109	1310/1550 nm		32/30 dB		
Ceyear-6418C-2201	850 mm/1300 mm	Multi-mode	24/34 dB	1.6 m	10 m
Ceyear-6418C-3101	1310/1490/1550 nm	Single-mode	39/36/38 dB	0.8 m	10 m
Ceyear-6418C-3102	1310/1550/1625 nm		39/38/36 dB		
Ceyear-6418C-3103	1310/1550/1625 nm (built-in filter)		37/36/34 dB		
Ceyear-6418C-3104	1310/1550 /1650 nm		39/38/36 dB		
Ceyear-6418C-3105	1310/1550/1650 nm (built-in filter)		37/36/34 dB		
Ceyear-6418C-4101	1310/1490/1550/1625 nm		36/34/34/34 dB		
Ceyear-6418C-4102	1310/1383/1550/1625 nm		36/34/34/34 dB		
Ceyear-6418C-4103	1310/1490/1550/1625 nm (built-in filter)		36/34/34/34 dB		
Ceyear-6418C-4104	1310/1490/1550/1650 nm		38/36/36/36 dB		
Ceyear-6418C-4105	1310/1490/1550/1650 nm (built-in filter)		36/34/34/34 dB		

1) One and only one standard module must be selected.

2) Environmental temperature 23°C ±2°C, max. pulse width, average times >300, SNR=1.

3) Dead zone test mode (range ≤1.6 km, pulse width 5 ns), fiber end reflection loss ≥40 dB, typical value.

4) Dead zone test mode (range ≤1.6 km, pulse width 5 ns), fiber end reflection loss ≥50 dB, typical value.

| Technical Specifications:	
Dynamic range	See details in table below of Ceyear-6418C OTDR standard modules
Distance accuracy	±(0.75 m + sampling spacing + 0.0025 % x distance) (excluding refractive error)
Distance resolution	0.05, 0.1, 0.2, 0.5, 1, 2, 4, 8, 16, 32 m
Distance range	0.4, 0.8, 1.6, 3.2, 6.4, 16, 32, 64, 128, 256, 512 km (single-mode); 0.4, 0.8, 1.6, 3.2, 6.4, 16, 32 (850 nm multi-mode)
Pulse width	5, 10, 30, 80, 160, 320, 640, 1280, 5120, 10240, 20480 ns; 5, 10, 30, 80, 160, 320, 640, 1280 (850 nm multi-mode)
Loss threshold	0.01 dB
Sampling points	256 k
Linearity	0.03 dB/dB
Loss resolution	0.001 dB
Storage capacity	≥800 (within the instrument); ≥65500 (2 G SD card)
Refractive index setting range	1.00000...2.00000 (step: 0.00001)
Distance unit	km, m, K ft , ft
Display	640 x 480, 6.5"/16,5 cm TFT color LCD (touch screen)
Optical output connector	FC/UPC (standard; options: LC/UPC, SC/UPC, ST/UPC)
External interfaces	USB, Min-USB, Ethernet, earphone, SD
Power supply	AC/DC adaptor: AC 100 V... 240 V, 50/60 Hz, 1.5 A; DC: 19 V ±2 V (2 A)
Built-in lithium battery	14.8 V, 4400 mAh , battery service time: 8 hours (room temperature, low brightness)
Maximum power consumption	10 W
Dimensions (mm)	186 x 295 x 75; approx. 2.5 kg
Environmental	Operating temperature -5...+50°C (battery charging 5...40°C); storage temperature -40...+70°C (battery -20...+60°C); relative humidity 5...95%, non-condensing
Option /V - VFL	Operating wavelength 650 nm ±20 nm; output power 2 mW (typ.); operating mode CW, 1 Hz, 2 Hz
Option /P - optical power meter	Wavelength range 1200...1650 nm; power range -60 ...0 dBm, test uncertainty ±5% (-25 dBm, CW)
Option /S - stable light source	Operating wavelength same as OTDR; output power ≥-5 dBm; operating mode CW, 270 Hz, 1 kHz, 2 kHz
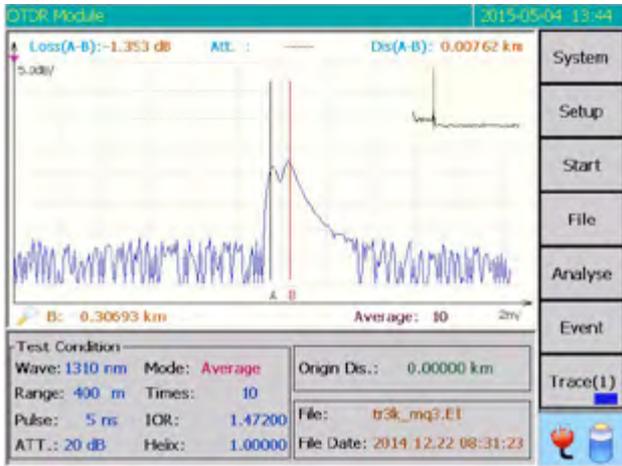
Ultra-short event dead zone

The Ceyear-6418C has ≤0.8 m ultra-short event dead zone, which is especially suitable to test short optical fiber lines and optical fiber jumpers.

High-speed curve analysis

The Ceyear-6418C can quickly and accurately analyze and find the event points or fault points in a testing curve, and then list all event information in an event table, which is very helpful for maintenance personnel.

① connect the fiber

① Connect the fiber

②press【start】

②Press【start】

③Event table
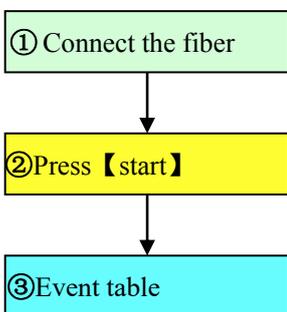
High-speed automatic test

With the automatic measurement function of the Ceyear-6418C OTDR, users can easily conduct the test with no need to know about the operation details. The steps are simple: Just connect the fiber, and press |Start|, then the instrument will automatically set the optimum test conditions and display accurate test results, such as testing curve and event table etc.
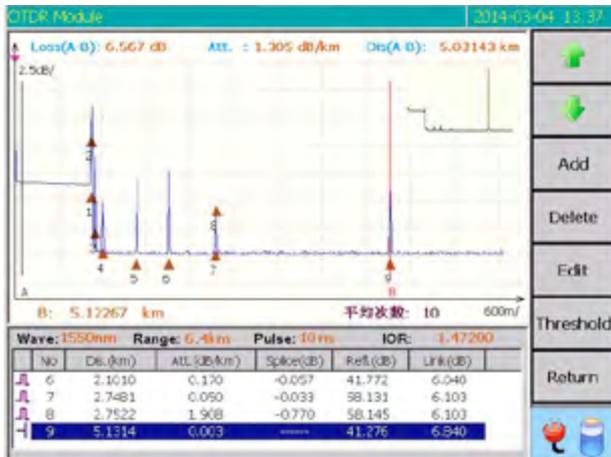
PON network test function

The Ceyear-6418C is an ideal test instrument for FTTx, with special built-in PON (pasive optical network) test function. It can conduct high-precision test on all branches of PON through 1:8...1:64 optical divider.

Visual fault locator (VFL) function

The built-in optional VFL function of the Ceyear-6418C has 3 operating modes: CW/1 Hz/2 Hz. VFL can rapidly and conveniently find the breaking point or remarkable loss point along a short-distance optical fiber line, so that the maintenance personnel can take steps in short time.

Automatic detection and alarm on the communication light signal

When measuring a fiber line in service, if there is communication light signal in the fiber, the result will be inaccurate, and it may even cause permanent damage to the optical detector in the instrument. The Ceyear-6418C is capable of automatically detecting the communication light signal in the fiber under test once the fiber is connected to the optical connector. If there is a light signal, it will alarm to provide protection for the instrument in time.

Multiple external interfaces

Ceyear-6418C offers multiple external interfaces as standard configuration, such as USB, Mini-USB, Ethernet, earphone and SD interface, which can realize functions as follows:

- Connection with external U disk or SD card.
- Connection with external printer based on USB interface.
- Data communication with PC.
- Remote control via Ethernet.
- Connection with earphone.

Typical Applications

The Ceyear-6418C high-performance OTDR offers three test modes:

- manual (real-time, average),
- automatic and
- dead zone.

Manual test mode: Manual mode is suitable for skilled operators who are familiar with the instrument, to get more accurate test results. In manual test mode, **real-time mode** or **average mode** can be selected based on user demand. **Real-time test** can rapidly detect the dynamic changes of the optical fiber line. It is applied to real-time monitor or to observe the optical fiber connection process and effect. **Average test mode** can at most suppress the noise in the testing curve, so to get a more accurate result. In average mode, the more average times, the better suppression of the noise, but the longer time it takes. So, in practice, the average times should be set properly according to necessity.

Automatic test mode: In this mode, the instrument can automatically set the optimized test conditions, and output the test result. There is no need for the operator to know the complicated background information and operation details. To enhance the automatic test efficiency, the average times can be increased properly, though it will prolong the test time.

Dead zone mode: This mode is suitable to test an optical fiber with short distance, for example, to test the jumper length of an optical fiber. In this mode, to get the best result, the reflection loss (also called return loss) of the fiber terminal is required to be larger than 40 dB.
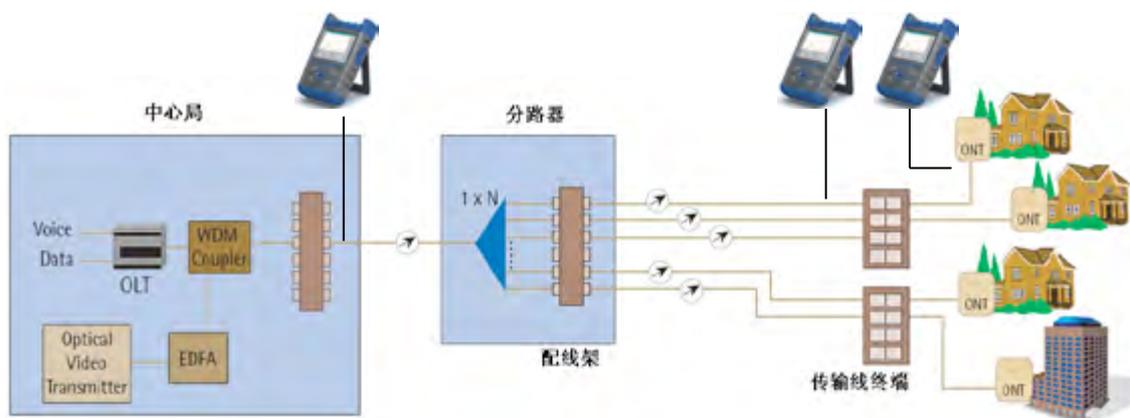
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