

2020 / 2021

**OP'WILL**

**OPTIMIZE THE TEST AS YOUR WILL**

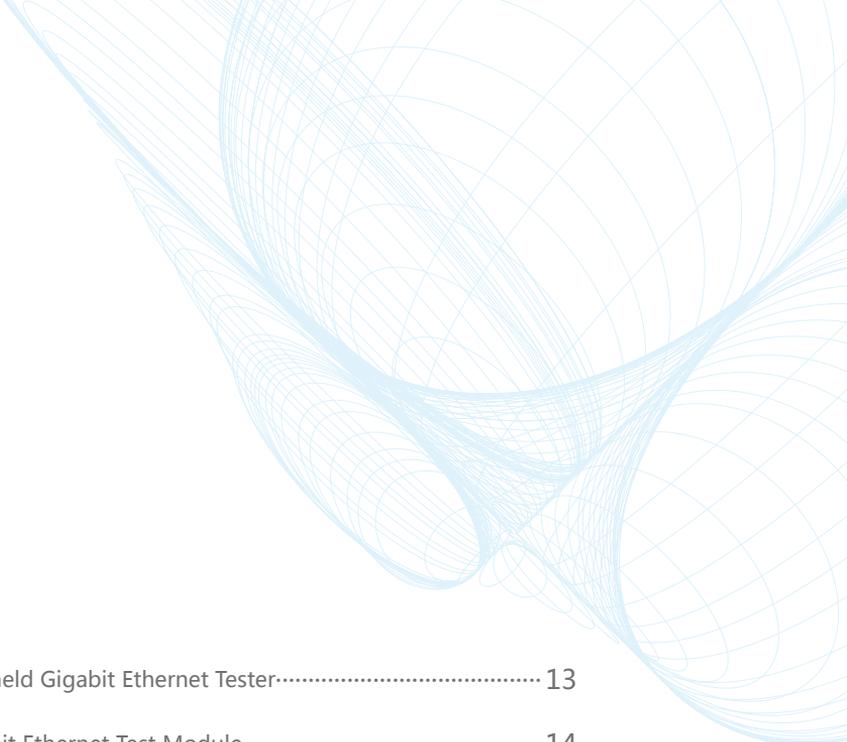
Telecom Testing Instruments Catalogue



OPWILL Technologies CO., LTD

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## ▶ Company Profile



OPWILL Technologies Co., Ltd. (OPWILL) is established in 2007, and headquartered in Beijing. The company business mission is to help service providers and enterprise organisations address their toughest network, application, and service performance challenges and successfully deploy the networks of tomorrow with high accuracy, reliability, and low cost. OPWILL products diligently address all stages of network deployment and field service, and integrate triple play verification features across Optical Fibre, Metro Ethernet, Transport, and Wireless.



**Optical Fibre:** OPWILL Optical products offers various OTDR test solutions for meeting different customers' requirements from high performance to low cost. Particularly, OTP6123 series has occupied the largest market share of Chinese Operators, as well as certain market shares of India, Mexico, Africa and European countries.

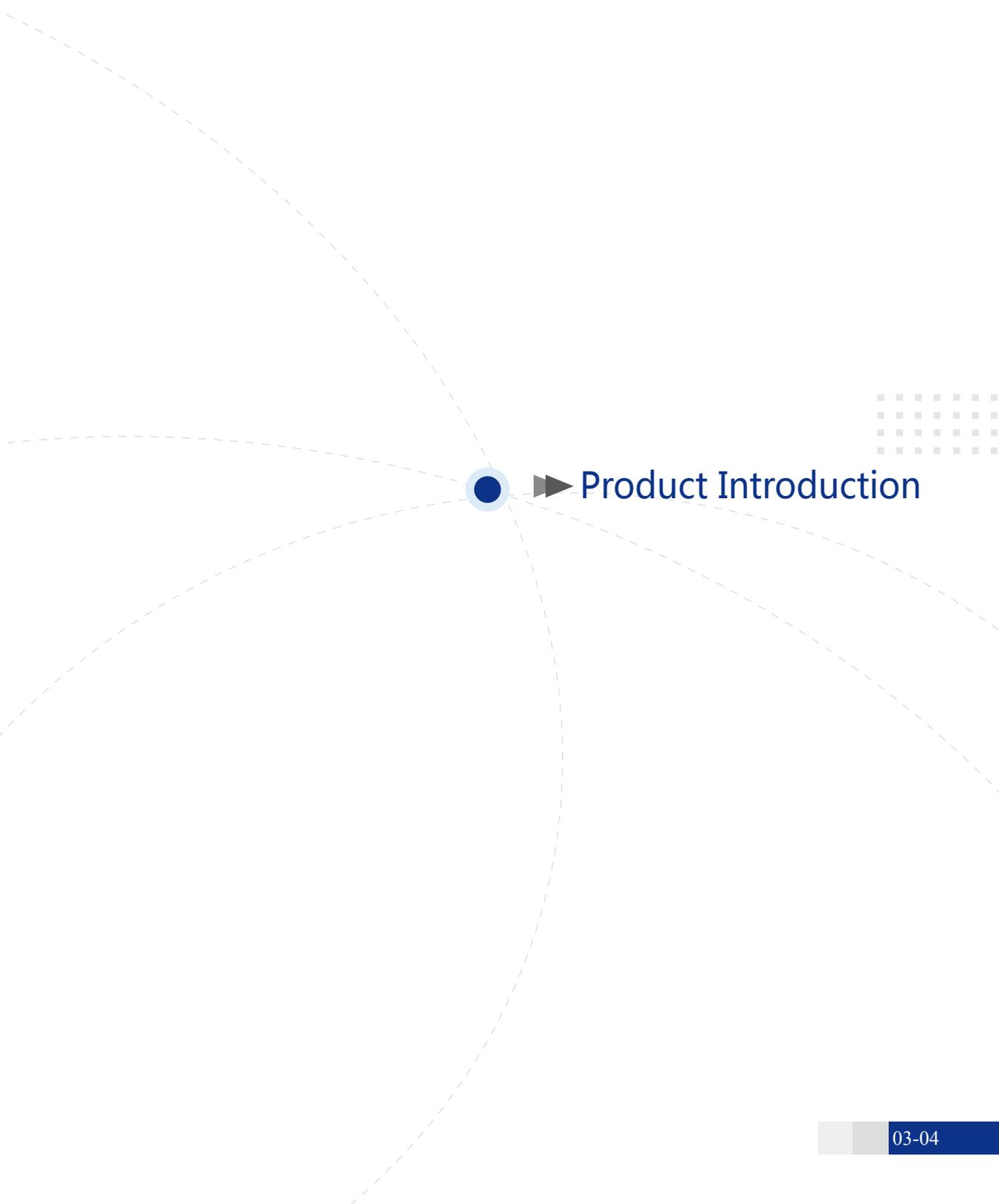
**Metro Ethernet:** OPWILL Ethernet products provides efficient QoS assessment and SLA validation of Metro Ethernet Networks for service providers, operators, and installers. Test Interface supports from 1G Ethernet to 100G Ethernet, and couples with RFC2544, Y.1564, BERT and other test applications. Such as OTP6126 GE tester is the exclusive 1G Ethernet tester for Chinese Telecom Operators such as China Unicom, China Telecom, and China Mobile. Moreover OTP6126 GE also widely used in Asia-Pacific market for operators and engineering maintenance field.

**Transport:** OPWILL Transport products gives a comprehensive support for next generation Transmission Networks. DS<sub>n</sub>/PDH, SDH/SONET, MSTP, OTN, and Ethernet all functions can be integrated into one module, and interface support 100G in maximum. OPWILL 2.5G SDH customized tester has been solely used in main operators of Indian market. OTM2800 synchronisation tester has been mainly supplied to Australia as well as ME Countries.

OPWILL currently has dominated the TOP 3 China telecom operators' test instrument market currently. Also, for overseas market, OPWILL products has been sold to the Telecom Operators and Network Providers in over 30 countries and regions such as BSNL, OPTUS, Vodafone, American Tower, Reliance Jio, VNPT, BTC/VIVACOM. etc. Besides that, the System Equipment Providers such as Nokia, Ericsson, ZTE all are/were OPWILL's Product users.

With the stable and reliable development, OPWILL vision is Optimizing the test as your will for all our distinguished customers and valuable partners.





Product Introduction

# 1. FTS510 Series Handheld OTDR Tester

FTS510 Series Handheld OTDR Tester is entirely new pad product released by OPWILL. It has rapid start technology and supports automatic and real-time test mode which can guarantee engineers to examine and detect optical fibres or cables in MAN; AN/FTTx, and LAN network with high flexibility, efficiency, and convenience. Meanwhile, its operation system interface has high similarity with Android GUI, significantly simplifies the test procedure.

## Feature

- 5.6 inch touchscreen, outdoor enhancement;
- Portable, and durable, particularly designed for outdoor use;
- Support 1310, 1490, 1550, 1625/1650nm wavelengths;
- Dynamic range up to 43dB;
- Event dead zone 0.8m, attenuation dead zone 3m;
- Support VFL function, Ethernet, USB2.0;
- Accessories: Light source, Power meter, iOTA (Intelligent Optical Link Topology), iNET (Intelligent Network Test Tool), Fibre scope.



## Specification

Mode	FTS510-M-ac	FTS510-H-ac	FTS510-N-ac	FTS510-L-ac
Wavelength (nm)	1310/1550	1310/1550	1310/1550	1310/1550
Dynamic Range (dB)	43/42	40/39	35/34	32/30
Mode	FTS510-H-acd	FTS510-H-abcd	FTS510-H-abe	FTS510-H-abce
Wavelength (nm)	1310/1550/1625	1310/1490/1550/1625	1310/1550/1650	1310/1490/1550/1650
Dynamic Range (dB)	40/39/38	40/37/39/38	40/39/38	40/37/39/38
Pulse Width (ns)	3 to 20,000	Attenuation Dead Zone (m)		3
Event Dead Zone (m)	0.8	Test Time (s)		1 to 300, Real time
Sampling Point	256K	Sampling Resolution (m)		0.04 to 2
Storage	16G			
Distance Uncertainty (m)	$\pm(0.75+0.0050\% \times \text{Distance} + \text{Sampling Resolution})$			
Mode	FTS510-S-ac		FTS510-XS-ac	
Wavelength (nm)	1310/1550		1310/1550	
Dynamic Range (dB)	30/28		26/24	
Pulse Width (ns)	3 to 20,000	Attenuation Dead Zone (m)		4
Event Dead Zone (m)	1.5	Test Time (s)		1 to 300, Real time
Sampling Point	256K	Sampling Resolution (m)		0.04 to 2
Storage	16G			
Distance Uncertainty (m)	$\pm(0.75+0.0050\% \times \text{Distance} + \text{Sampling Resolution})$			

## 2. iOTDR Series Portable OTDR Tester

iOTDR Series OTDR Tester is entirely new portable product released by OPWILL. Adopting Bluetooth technology allows engineers to conduct the test remotely on their portable Windows, or Android devices. It has rapid start technology and 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.

### Feature

- Supports all OTDR functions;
- Portable, and durable;
- Support 1310, 1490, 1550, 1625/1650nm wavelengths;
- Dynamic range up to 43dB;
- Event dead zone 1.5m, attenuation dead zone 6m;
- Bluetooth controlled by smart phone, or pad;
- Accessories: Light source, Power meter, iOTA (Intelligent Optical Link Topology).



### Specification

Mode	iOTDR-M-ac	iOTDR-H-ac	iOTDR -N-ac	iOTDR -L-ac
Wavelength (nm)	1310/1550	1310/1550	1310/1550	1310/1550
Dynamic Range (dB)	43/42	40/39	35/34	32/30
Mode	iOTDR -H-abc	iOTDR -H-acd	iOTDR -H-abe	
Wavelength (nm)	1310/1490/1550	1310/1550/1625	1310/1550/1650	
Dynamic Range (dB)	40/37/39	40/39/38	40/39/38	
Event Dead Zone (m)	1.5	Attenuation Dead Zone (m)	6	
Pulse Width (ns)	3 to 20,000	Sampling Resolution (m)	0.125 to 2	
Sampling Point	256K	Test Time (s)	1 to 300, Real time	
Storage		16G		
Distance Uncertainty (m)		$\pm(0.75+0.0050\% \times \text{Distance} + \text{Sampling Resolution})$		

### 3. OTP6123 Series Handheld OTDR Tester

OTP6123 Series Handheld OTDR Tester is particularly designed for engineers to examine and detect optical fibres or cables in MAN; AN/FTTx, and LAN network with high flexibility, efficiency, and convenience. Meanwhile, its durable and portable feature, which is specially optimised for outdoor environment, is the best test equipment for operator to examine or detect optical fibre and cable during the optical network establish procedure.

#### Feature

- Support all OTDR test functions;
- Support PON OTDR;
- Support 4 different wavelengths: 1310, 1490, 1550, 1625/1650nm in maximum;
- Dynamic range up to 42dB;
- Event dead zone 2m, attenuation dead zone 4m,
- Support VFL function;
- Accessories: Light source, Power meter, iOTA (Intelligent Optical Link Topology), iNET (Intelligent Network Test Tool), and Fibre scope.



#### Specification

Mode	OTP6123M	OTP6123H	OTP6123N
Wavelength (nm)	1310/1550	1310/1550	1310/1550
Dynamic Range (dB)	42/40	40/39	35/34
Mode	OTP6123L	OTP6123P	OTP6123-a
Wavelength (nm)	1310/1550	1310/1550/1625	1310/1490/1550
Dynamic Range (dB)	32/30	39/38/38	39/37/38
Mode	OTP6123-b	OTP6123-c	OTP6123-d
Wavelength (nm)	1310/1550/1650	1310/1490/1550/1625	1310/1490/1550/1650
Dynamic Range (dB)	39/38/38	39/37/38/38	39/37/38/38
Mode	OTP6123-e		OTP6123-f
Wavelength (nm)	1625		1650
Dynamic Range (dB)	38		38
Pulse Width (ns)	3 to 20,000	Event Dead Zone (m)	2
Attenuation Dead Zone (m)	4	Sampling Resolution (m)	0.125 to 2
Sampling Point	256K	Test Time (s)	1 to 300, Real time
Storage	1G		
Distance Uncertainty (m)	$\pm(0.75 + 0.0075\% \times \text{Distance} + \text{Sampling Resolution})$		

# 4. OTC2300 Series OTDR Module

OTC2300 Series OTDR Test Module is designed and manufactured by OPWILL, specialised for optical fibre monitoring system. This compact and high performance module was launched due to increasingly demand for online maintaining and monitoring optical fibre system recently.

## Feature

- Specialised for optical fibre monitoring system;
- Working temperature from: -10°C to +60°C ;
- Event dead zone 1.5m, attenuation dead zone 6m;
- Control by computer or server though Ethernet port (Compatible with 10M/100M Ethernet port, set IP address by RS232C);
- Integrated a complete set of control command including configuration, test, data transfer etc.



## Specification

Mode	OTC2300-H-a	OTC2300-H-b	OTC2300-H-c	OTC2300-H-d
Wavelength (nm)	1310	1490	1550	1625
Dynamic Range (dB)	38	38	38	38
Mode	OTC2300-N-a	OTC2300-N-b	OTC2300-N-c	OTC2300-N-d
Wavelength (nm)	1310	1490	1550	1625
Dynamic Range (dB)	35	35	35	35
Mode	OTC2300-L-a	OTC2300-L-b	OTC2300-L-c	OTC2300-L-d
Wavelength (nm)	1310	1490	1550	1625
Dynamic Range (dB)	30	30	30	30
Pulse Width (ns)	3 to 20000	Event Dead Zone (m)		1.5
Attenuation Dead Zone (m)	6	Sampling Resolution (m)		0.125 to 2
Sampling Point	256K	Test Time (s)		5 to 300, Real time
Distance Uncertainty (m)	$\pm(1 + 0.005\% \times \text{Distance} + \text{Sampling resolution})$			
Interface	Ethernet: 10M/100M, Self-adopt, 4 pin; RS-232C: 115.2kbps (Can be modified by RS-232C to set IP address).			

## 5. PFS-220 Fusion Splicer

PFS-220 Fusion Splicer is designed by OPWILL. Small in size, and light in weight. 7 seconds fastsplicing, and 15 seconds arc heating. It adopts advanced PAS Fibre adjustment technology, and drive four motors, has fibre adjustment function. It is not only used for FTTX project, but also can be used for the trunk line. PFS-220 is a machine which is the smallest volume, the lightest weight, the most fast splicing speed.

### Feature

- Hardness: The body is made from titanium alloy, and it has rubber protection function, quakeproof, waterproof, dustproof.
- Fast: 7s fast splicing, 15s fast heating, support continuous heating;
- 4 Motors core alignment, automatic zoom model, core to core alignment;
- Long life time: 1 group batteries, 240 times splicing and heating;
- Conveniences: Convenient for maintenance.



### Specification

Size and Weight	120D×120W×130H (mm); 1.66kg (with batteries)	Alignment	Core; Cladding; Fine
Applicable Fibre Count	Single	Interface	USB2.0
Applicable Fibre Type	SM (ITU-T G.652); MM (ITU-T G.651); DS (ITU-T G.653); NZ/ NZDS (ITU-T G.655); BI (ITU-T G.657)	Applicable Fibre Diameter	Cladding: 80um to 150um; Coating: 100um to 1000um
Splice Mode	Stored 40 groups, 80 groups of user-defined	Splicing Time	9s (typical time) or 7s (fast type)
Maximum Storage	10,000 set of the latest record storage	Return Loss	≥60dB
Applicable Sleeve Length	60mm/45mm/40mm (FP-03)	Average Splice Loss	0.02dB (SM); 0.01dB (MM); 0.04dB (DS); 0.04dB (NZ/NZDS)
Operating Environment	Altitude: 0 to 5,000m; Humidity: 0% to 95% relative; Temperature: -20°C to 50°C; Wind speed: 15m/s	Screen	4.3 inch could LCD
Tensile Test	≥2N	Battery	Typical work 240 cycles (splicing / heating); Fully charge 3 hours; Recharge cycles 500 times; 4000mAh lithium battery
Optical Magnification	X or Y: 520 times	Power Supply	4000mA lithium battery; AC100-240V power adapter

## 6. PFS-220T Fusion Splicer

PFS-220T Fusion Splicer is designed by OPWILL. Small in size, and light in weight. 7 seconds fastsplicing, and 15 seconds arc heating. It adopts advanced PAS Fibre adjustment technology, and drive four motors, has fibre adjustment function. It is not only used for FTTX project, but also can be used for the trunk line. PFS-220T is a machine which is the smallest volume, the lightest weight, the most fast splicing speed.

### Feature

- Hardness: The body is made from titanium alloy, and it has rubber protection function, quakeproof, waterproof, dustproof.
- Fast: 8s fast splicing, 20s fast heating, support continuous heating;
- 6 Motors 3D fiber core alignment;
- Long life time: 1 group batteries, 240 times splicing and heating;
- Conveniences: Convenient for maintenance.



### Specification

Size and Weight	130W×135D×130H (mm); 1.77kg (with batteries)	Alignment	Core; Cladding; Fine
Applicable Fibre Count	Single	Interface	USB2.0
Applicable Fibre Type	SM (ITU-T G.652); MM (ITU-T G.651); DS (ITU-T G.653);NZ/ NZDS (ITU-T G.655); BI(ITU-T G.657)	Applicable Fibre Diameter	Cladding: 80um to 150um; Coating: 100um to 1000um
Splice Mode	Stored 40 groups, 80 groups of user-defined	Splicing Time	9s (typical time) or 7s (fast type)
Maximum Storage	10,000 set of the latest record storage	Return Loss	≥60dB
Applicable Sleeve Length	60mm/45mm/40mm (FP-03)	Average Splice Loss	0.02dB (SM); 0.01dB (MM); 0.04dB (DS); 0.04dB (NZ/NZDS)
Operating Environment	Altitude: 0 to 5,000m; Humidity: 0% to 95% relative; Temperature: -20°C to 50°C; Wind speed: 15m/s	Screen	5.0 inch could LCD
Tensile Test	≥2N	Battery	Typical work 240 cycles (splicing / heating); Fully charge 3 hours; Recharge cycles 500 times; 4000mAh lithium battery
Optical Magnification	X or Y: 460 times	Power Supply	4000mA lithium battery; AC100-240V power adapter

# 1. OTP3017A E1& Power Meter Tester

OTP3017A is a hand-held testing instrument which integrates E1 and optical power meter testing functions. It can provide error code, alarm and upper-level business level test for comprehensive evaluation of network quality. It can directly display statistical results in an intelligent or advanced operation mode. It can be used to install, test and maintain on-site for engineers and maintenance personnel. Field installation, testing and maintenance, save a lot of time.

## Feature

- Handheld 3.5inches colour and display screen;
- Online or outline business service testing;
- Non framing and framing operations (PCM-30, PCM-30C, PCM-31, PCM-31C);
- 2.048Mbps (Nx64kbps, N=1 to 31) Speed Sending/Receiving;
- BERT Testing;(G.821, G.826, M.2100/550)
- Alarm generation/error insertion test;
- Fully automatic and advanced operation mode;
- Results data storage/printing functions;
- Optical power meter.



## 2. OTP6126 Handheld Gigabit Ethernet Tester

OTP6126 Handheld Gigabit Ethernet Test Set is one of Ethernet test product of OPWILL. The product fully meets Ethernet standards (ITU-T Y.1564, IETF RFC2544, IETF RFC3393, IEEE 802.3, IEEE802.1 etc.), and supports Ethernet WAN and LAN network test with high reliability, convenience, and flexibility. Meanwhile, the module can provide a high efficient SLA test function for service provider.

### Feature

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- Support 1 Gbit/s data stream in maximum;
- Support RFC2544, includes Throughput, Frame Loss, Latency, and Back-to-Back;
- Support RFC3393 Packet Jitter test;
- Support Y.1564 test;
- Support BERT and Loopback test from Layer 1 to Layer 4;
- Support Through test;
- Support IPV6 test;
- Support Service Disruption test;
- Support to set 8 data stream in maximum, each data stream can conduct Throughput, Latency, Frame Loss, and Packet Jitter.



### Application

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- Ethernet performance evaluation for operator or customer;
- BERT, RFC2544, and SLA verification.

## 3. OTM2602 Gigabit Ethernet Test Module

OTM2602 Gigabit Ethernet/PTN test module is one of OPWILL modular test products, and which is particularly designed for network test engineer to do deployment and comprehensive test for Ethernet. The Ethernet test module fully meets Ethernet standards, and supports Ethernet WAN and LAN network test with high reliability, convenience, and flexibility. Meanwhile, the module can provide a high efficient SLA test function for service provider. This module is compatible with OTP6200v2 (OPWILL Intelligent Network Test Platform).

### Feature

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- Support 1 Gbit/s data stream in maximum;
- Support RFC2544, includes Throughput, Frame Loss, Latency, and Back-to-Back;
- Support IEEE802.3ah, ITU-T Y.1731 and ITU-T G.8113.1 standard OAM testing
- Support RFC3393 Packet Jitter test;
- Support Y.1564 test;
- Support BERT and Loopback test from Layer 1 to Layer 4;
- Support Through test;
- Support IPV6 test;
- Support Service Disruption test;
- Support up to 8 streams generator and analysis, each stream can conduct Throughput, Latency, Frame Loss, and Packet Jitter.



### Application

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- Ethernet performance evaluation for operator or customer;
- BERT, RFC2544, and SLA verification.

## 4. OTM2610 10Gigabit Ethernet Test Module

OTM2610 10Gigabit Ethernet/PTN test module is one of OPWILL modular test products, and which is particularly designed for network test engineer to do deployment and comprehensive test for Ethernet. The 10Gigabit Ethernet test module fully meets Ethernet standards, and supports 10 Gigabit Ethernet WAN and LAN network test with high reliability, convenience, and flexibility. Meanwhile, the module can provide a high efficient SLA test function for service provider. This module is compatible with OTP6200v2 (OPWILL Intelligent Network Test Platform).

### Feature

- Support 10 Gbit/s data stream in maximum;
- Support RFC2544, includes Throughput, Frame Loss, Latency, and Back-to-Back;
- Support Y.1564 test;
- Support IEEE802.3ah, ITU-T Y.1731 and ITU-T G.8113.1 standard OAM testing;
- Support BERT and Loopback test from Layer 1 to Layer 4;
- Support Through test;
- Support IPV6 test;
- Support Service Disruption test;
- Support to set 512 data stream in maximum, and support to measure QoS by setting priority VLAN and TOS/DSCP.



### Application

- 10G Ethernet performance evaluation for operator or customer;
- BERT, RFC2544, and SLA verification;
- 10G data stream generation and analysis.

## 5. OTM2612 10G Ethernet/SDH/OTN Test Module

OTM2612 10G Packet Ethernet/SDH/OTN Module is a test solution for the installation and maintenance for Metro/Carrier Ethernet and IP services. It supplies a compact test solution for 10G packet Ethernet/SDH/OTN installation and maintenance, it provides Ethernet, SDH/SONET, and OTN Functions. This module is compatible with OTP6200v2 (OPWILL Intelligent Network Test Platform).



### Feature

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#### Ethernet Test :

- Dual 10G ports;
- Support 10 Gbit/s data stream in maximum;
- Support RFC2544, includes Throughput, Frame Loss, Latency, and Back-to-Back;
- Support 10G WAN and LAN test;
- Support RFC6349;
- Support Y.1564 test;
- Support BERT and Loopback test from Layer 1 to Layer 4;
- Support Through test and support to insert error and alarm during Through test;
- Support IPV6 test;
- Support Service Disruption test;
- Support to set 512 data stream in maximum, and support to measure QoS by setting priority VLAN and TOS/DSCP.

## 5. OTM2612 10G Ethernet/SDH/OTN Test Module

### SDH Test :

- Support STM-1/STM-4/STM-16/STM-64 and OC-3/OC-12/OC-48/OC-192 SDH/SONET testing for optical port;
- AU/TU, STS/VT pointer generator and monitor, G.783 point test sequence testing;
- Overhead Editor and Monitor. Alarm Generation and Monitor, Error Injection and Monitor;
- Support TCM test;Support G.821, G.826, G.828, G.829, M.2100 and M.2101 performance testing;
- Support APS/SDT testing.

### OTN Test :

- Support OTU1, OTU2, OTU1e, OTU2e optical interface, and relevant test;
- Support BERT and FEC performance analysis for OTU1, and OTU2 in accordance with ITU-T G.709;
- Support Mapping from OTU0 to OTU1/OTU2, and OTUFLEX Mapping test.

### Application

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- 10G Ethernet performance evaluation for operator or customer;
- 10/100/1000MBase-T, 100/1000MBase-X, and 10GE, BERT, RFC2544, Y.1564 test and SLA verification;
- 10G data stream generation and analysis.SDH/SONET, and ROADM network installation, troubleshooting, and maintenance;
- SONET/SDH test, up to OC-192/STM-64;
- G.709 OTN test, can satisfy FEC test and ODU multiplex function which is up to 10.7 Gbit/s.

## 6. OTM2515/2516/2517 155Mbit/s~2.5Gbit/s PDH/SDH Test Module

OTM2515/2516/2517 155Mbit/s~2.5Gbit/s PDH/SDH Test Module is one of OPWILL modular test products, and which is particularly designed for maintaining or testing SDH network in MAN. This series module can be applied in SDH, SONET, and PDH test. For SDH, it supports 155Mbit/s; 622Mbit/s; and 2.5Gbit/s, and for PDH, it supports 2M, 34M, and 139M. This series module is compatible with OTP6200v2 (OPWILL Intelligent Network Test Platform).

### Feature

- Support DS1/DS3, E1/E3/E4/STM-1 electrical port, STM-1/STM-4/STM-16 and OC-3/OC-12/OC-48 SDH/SONET testing;
- Support Through test, and support to insert error and alarm during Through test;
- AU/TU, STS/VT pointer generator and monitor, G.783 point test sequence testing;
- Overhead Editor and Monitor. Alarm Generation and Monitor, Error Injection and Monitor;
- Support TCM test;
- Support G.821, G.826, G.828, G.829, M.2100 and M.2101 performance testing;
- Support APS/SDT testing.



### Application

- TDM network installation, maintenance, and troubleshooting;
- Out of Service and In Service test;
- Network performance evaluation.



# 7. OTM2502/2512 10G OTN/SDH/Ethernet Test Module

OTM2502/2512 10G OTN/SDH/Ethernet Test Module is one of OPWILL modular test products, and which can provide a comprehensive solution for OTN/SDH/SONET and Packet Network installation and maintenance. It provides DSn/PDH, SDH/SONET, OTN, and Ethernet functions. This module is compatible with OTP6200v2 (OPWILL Intelligent Network Test Platform).

## Feature

- Support OTU1, OTU2, OTU1e, OTU2e optical interface, and relevant test;
- Support BERT and FEC performance analysis for OTU1, and OTU2 in accordance with ITU-T G.709;
- Support Mapping from OTU0 to OTU1/OTU2, and OTUFLEX Mapping test;
- Support DS1/DS3, E1/E3/E4/STM-1 electrical port, STM-1/STM-4/STM-16/STM-64 and OC-3/OC-12/OC-48/OC-192 SDH/SONET testing;
- Support Through test, and support to insert error and alarm during Through test;
- AU/TU, STS/VT pointer generator and monitor, G.783 point test sequence testing;
- Overhead Editor and Monitor. Alarm Generation and Monitor, Error Injection and Monitor;
- Support TCM test;
- Support G.821, G.826, G.828, G.829, M.2100 and M.2101 performance testing;
- Support APS/SDT testing;
- Support 10/100/1000M Base-T, 100/1000M Base-X and 10G Base-X interface Ethernet testing;
- Support RFC2544, includes Throughput, Frame Loss, Latency, and Back-to-Back;
- Support RFC3393 Packet Jitter test;
- Support Y.1564 test;
- Support BERT and Loopback test from Layer 1 to Layer 4;
- Support Service Disruption test;
- Support to set 16 data stream in maximum, each data stream can conduct Throughput, Latency, Frame Loss, and Packet Jitter.



## Application

- SDH/SONET, and ROADM network installation, troubleshooting, and maintenance;
- DSn/PDH and SONET/SDH test, up to OC-192/STM-64;
- G.709 OTN test, can satisfy FEC test and ODU multiplex function which is up to 10.7 Gbit/s;
- 10/100/1000MBase-T, 100/1000MBase-X, and 10GE, BERT, RFC2544 and Y.1564 test.

## 8. OTM2620 100G Ethernet/OTN Test Module

OTM2620 100G Test Module is a new modular product, which is released by OPWILL in 2015. This module is designed for satisfying the current increasingly test demand of Core Network and MAN 100GE/40GE and OTU4/OTU3E1/OTU3E2/OTU3 such high speed network performance and stability. This module is compatible with OTP6200v2 (OPWILL Intelligent Network Test Platform).



### High Lights

- CFP interface for 100GE and OTU4 Applications;
- QSFP28+ interface support with CFP-to-QSFP28+ and CFP-to-QSFP+ adapters;
- QSFP+ interface for 40GE and OTU3E1/OTU3E2/OTU3 Applications;
- External clock interface;
- 200ppm clock offset generation;
- Eye diagram reference clock output;
- Soft LED indicators.

### Ethernet Testing:

- Optical 100G/40G Ethernet testing; Optical Lane BERT and CAUI-4/XLAUI Lane BERT;
- PCS Layer Testing with Skew generation and monitoring;
- Multi-stream testing up to 512 independent streams;
- RFC2544 and Y.1564 SLA testing;
- Service Disruption Measurements;
- IPv4 and IPv6 traffic generations;
- BERT , Loopback and Throughput testing at Layer1 to Layer 4;
- 100G/40G packet capture with OPWILL Capture Software decode;
- Error Injection and Alarm Generation.

# 8. OTM2620 100G Ethernet/OTN Test Module

## OTN Testing :

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- OTN testing for OTU4/OTU3E1/OTU3E2/OTU3;
- Complete multi-stage Mapping/Multiplexing;
- Ethernet/SDH over OTN;
- Service Disruption Measurements;
- Overhead monitoring and byte decoding;
- Error Injection and Alarm Generation;
- Terminate and Through test modes;
- External clock reference interface;
- Eye diagram reference interface.

## CFP Testing:

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- Optical Lane BERT;
- PCS layer testing with skew generation and monitoring;
- Transmit and receive optical power measurement;
- Module status display.

## Application

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- OTN Core Network, MAN development, installation, and maintenance;
- Carrier Ethernet infrastructure manufacture, installation, and maintenance;
- Mobile Front haul and Backhaul Network installation, and test;
- BERT, RFC2544, and SLA verification;
- 100G/40G data stream generation and analysis.

## 9. OTM2800 Synchronization Analyser Test Module

OTM2800 Synchronisation Analyser is specially designed for conducting clock synchronisation of PTN or Packet Ethernet, which is developed and manufactured by OPWILL. It is developed in accordance with IEEE1588v2, SYNC-E, 1PPS+ToD, Ethernet, and E1 such standards, provides a complete clock synchronisation test solution for operators. This module is compatible with OTP6200v2 (OPWILL Intelligent Network Test Platform).



### Synchronization Test

- Support 1588v2, SYNC-E, 1PPS+ToD, and TDM;
- Integrated a rubidium atomic GPS clock, which can keep GPS time signal for 2 hours, beneficial for some situation where is inconvenient for setting GPS antenna;
- Support to reproduce UTC time and clock with high precision;
- Support to test IEEE1588v2 time server, IP RAN/PTN/OTN/xPON infrastructures, and BS time synchronization precision and performance;
- Support 1PPS+ToD, IEEE1588v2 PTP and SYNC-E mask and slave emulation testing.
- Support ESMC simulation and analysis, which is in accordance with ITU-T G.8264 standard;
- Support to conduct 7X24 continuous test to analyse the performance of Jitter and Wander in a long term situation for time and clock synchronization;
- Support to calculate MTIE, TDEV.

# 9. OTM2800 Synchronization Analyser Test Module

## Ethernet Test:

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- Single 1000M/100M/10M port;
- Support 1 Gbit/s data stream in maximum;
- Support RFC2544, includes Throughput, Frame Loss, Latency, and Back-to-Back;
- Support Y.1564 test;
- Support BERT and Loopback test from Layer 1 to Layer 4;
- Support IPV6 test;
- Support Service Disruption test;
- Support to set 512 data stream in maximum, and support to measure QoS by setting priority VLAN and TOS/DSCP.
- Support E1/T1 Testing
- 6.5 inch outdoor enhanced LCD touch color display screen, suitable for the outdoor environment;
- Remote access and control based on 10/100M Base-T interface;
- Export the test report by USB2.0 port;
- Graphical user interface, easy to operate;

## Application

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- Network planning test;
- Synchronization service open, maintain, and troubleshoot;
- PTN network performance test.

## 10. OTM2810 Synchronization Analyser Test Module

OTM2810 10GE time analyser has built-in GPS and Beidou II tame atomic clock, providing high-precision time clock information. It can not only support the verification and calibration of traditional TDM and SDH network timing technology, but also support the verification and calibration of the latest commercial Ethernet timing technologies such as Sync-E, 1PPS + TOD and IEEE 1588v2 PTP. It provides efficient, high- precision and comprehensive time and clock performance analysis and testing for power system, railway system, military communication network and 2G / 3G / 4G / 5G synchronous network of operators.This module is compatible with OTP6200v2 (OPWILL Intelligent Network Test Platform).



### Synchronization Test

- Support 1PPS Testing, 1PPS/PP2S testing, 1588v2 testing, SyncE testing, E1/2MHz□10M up to 10G;
- Support STM-1/4/16/64, OC-3/12/48/192 for clock performance test of the SDH/SONET interface;
- Support the measurement, analysis and evaluation of time and clock based on G.811, G.812, G.813, G.823, G.8261, G.8262, G.8265.1, G.8275.1, G.8275.2, G.8273.2, C37.238 series standard specifications;
- Support 1588v2 master clock and slave clock (support one-step clock and two-step clock), and can automatically carry out 1588v2 master-slave messages exchange;
- Support PTP information mapping of PTP message over Ethernet and PTP message over UDP over IPv4;
- Support for SYNC, Announcement and Delay\_ Transmission frequency setting of Req PTP message;
- Support the real-time statistics of PTP information sent and received, and the PTP data content includes the real-time analysis of PTP time stamp (T1, T2, T3, T4);
- Support any combination of time and clock can test the function at the same time;
- Supports directional capture of messages of TOD, 1588v2, PTP, sync and NTP / SNTP protocols through filtering
- Support to conduct 7X24 continuous test to analyse theperformance of Jitter and wander in a long term situation for time and clock synchronization;
- Support to calculate MTIE, TDEV;
- Support OAM test function;
- Built in Beidou II and GPS tame atomic clock.

# 10. OTM2810 Synchronization Analyser Test Module

## Ethernet Test:

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- Dual 10G 1000M/100M/10M ports;
- Support 10 Gbit/s data stream in maximum;
- Support RFC2544, includes Throughput, Frame Loss, Latency, and Back-to-Back;
- Support Y.1564 test;
- Support BERT and Loopback test from Layer 1 to Layer 4;
- Support Through test and support to insert error and alarm during Through test;
- Support IPV6 test;
- Support Service Disruption test;
- Support to set 512 data stream in maximum, and support to measure QoS by setting priority VLAN and TOS/DSCP.
- Support E1/T1 Testing
- 6.5 inch outdoor enhanced LCD touch color display screen, suitable for the outdoor environment;
- Remote access and control based on 10/100M Base-T interface;
- Export the test report by USB2.0 port;
- Graphical user interface, easy to operate;

## Application

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- Network planning test;
- Synchronization service open, maintain, and troubleshoot;
- PTN network performance test.

# PRODUCT TABLE

## OPTICAL COMMUNICATION TEST INSTRUMENTS

NO.	Name	Mode	Description
1	Handheld OTDR	FTS510-XS-ac	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 26/24dB.
2	Handheld OTDR	FTS510-S-ac	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 30/28dB.
3	Handheld OTDR	FTS510-L-ac	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 32/30dB.
4	Handheld OTDR	FTS510-N-ac	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 35/34dB.
5	Handheld OTDR	FTS510-H-ac	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 40/39dB.
6	Handheld OTDR	FTS510-M-ac	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 43/42dB.
7	Handheld PON OTDR	FTS510-H-acd	Three Wavelength 1310/1550/1625nm PON OTDR Tester, Dynamic Range 40/39/38dB.
8	Handheld PON OTDR	FTS510-H-abcd	Four Wavelength 1310/1490/1550/1625nm PON OTDR Tester, Dynamic Range 40/37/39/38dB.
9	Handheld PON OTDR	FTS510-H-ace	Three Wavelength 1310/1550/1650nm PON OTDR Tester, Dynamic Range 40/39/38dB.
10	Handheld PON OTDR	FTS510-H-abce	Four Wavelength 1310/1490/1550/1650nm PON OTDR Tester, Dynamic Range 40/37/39/38dB.
11	Portable OTDR	iOTDR-L-ac	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 32/30dB.
12	Portable OTDR	iOTDR-N-ac	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 35/34dB.
13	Portable OTDR	iOTDR-H-ac	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 40/39dB.
14	Portable OTDR	iOTDR-M-ac	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 43/42dB.
15	Portable PON OTDR	iOTDR-H-abc	Three Wavelength 1310/1490/1550nm PON OTDR Tester, Dynamic Range 40/37/39dB.
16	Portable PON OTDR	iOTDR-H-acd	Three Wavelength 1310/1550/1625nm PON OTDR Tester, Dynamic Range 40/39/38dB.
17	Portable PON OTDR	iOTDR-H-ace	Three Wavelength 1310/1550/1650nm PON OTDR Tester, Dynamic Range 40/39/38dB.
18	Handheld OTDR	OTP6123L	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 32/30dB.
19	Handheld OTDR	OTP6123N	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 35/34dB.

## OPTICAL COMMUNICATION TEST INSTRUMENTS

NO.	Name	Mode	Description
20	Handheld OTDR	OTP6123H	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 40/39dB.
21	Handheld OTDR	OTP6123M	Two Wavelength 1310/1550nm OTDR Tester, Dynamic Range 42/40dB.
22	Handheld PON OTDR	OTP6123P	Three Wavelength 1310/1550/1625nm PON OTDR Tester, Dynamic Range 39/38/38dB.
23	Handheld PON OTDR	OTP6123-a	Three Wavelength 1310/1490/1550nm PON OTDR Tester, Dynamic Range 39/37/37dB.
24	Handheld PON OTDR	OTP6123-b	Three Wavelength 1310/1550/1650nm PON OTDR Tester, Dynamic Range 39/38/38dB.
25	Handheld PON OTDR	OTP6123-c	Four Wavelength 1310/1490/1550/1625nm PON OTDR Tester, Dynamic Range 39/37/38/38dB.
26	Handheld PON OTDR	OTP6123-d	Four Wavelength 1310/1490/1550/1650nm PON OTDR Tester, Dynamic Range 39/37/38/38dB.
27	Handheld PON OTDR	OTP6123-e	Single Wavelength 1625nm PON OTDR Tester, Dynamic Range 38dB.
28	Handheld PON OTDR	OTP6123-f	Single Wavelength 1650nm PON OTDR Tester, Dynamic Range 38dB.
29	OTDR Module	OTC2300-H-a	Single Wavelength 1310nm OTDR Module, Dynamic Range 38dB.
30	OTDR Module	OTC2300-H-b	Single Wavelength 1490nm OTDR Module, Dynamic Range 38dB.
31	OTDR Module	OTC2300-H-c	Single Wavelength 1550nm OTDR Module, Dynamic Range 38dB.
32	OTDR Module	OTC2300-H-d	Single Wavelength 1625nm OTDR Module, Dynamic Range 38dB.
33	OTDR Module	OTC2300-N-a	Single Wavelength 1310nm OTDR Module, Dynamic Range 35dB.
34	OTDR Module	OTC2300-N-b	Single Wavelength 1490nm OTDR Module, Dynamic Range 35dB.
35	OTDR Module	OTC2300-N-c	Single Wavelength 1550nm OTDR Module, Dynamic Range 35dB.
36	OTDR Module	OTC2300-N-d	Single Wavelength 1625nm OTDR Module, Dynamic Range 35dB.
37	OTDR Module	OTC2300-L-a	Single Wavelength 1310nm OTDR Module, Dynamic Range 30dB.
38	OTDR Module	OTC2300-L-b	Single Wavelength 1490nm OTDR Module, Dynamic Range 30dB.
39	OTDR Module	OTC2300-L-c	Single Wavelength 1550nm OTDR Module, Dynamic Range 30dB.
40	OTDR Module	OTC2300-L-d	Single Wavelength 1625nm OTDR Module, Dynamic Range 30dB.
41	Fusion Splicer	PFS-220	Fusion Splicer.
42	Fusion Splicer	PFS-220T	Transmission Fusion Splicer.

## TRANSMISSION AND METRO ETHERNET TEST INSTRUMENTS

NO.	Name	Mode	Description
1	E1&Power Meter Tester	OTP3017A	E1 test and Power Meter
2	Ethernet Tester	OTP6126	Handheld Dual Optical and Electrical Dual Port 1G Ethernet Tester
3	Ethernet Tester	OTM2602	Modular Dual Optical and Electrical Dual Port 1G Ethernet Tester
4	Ethernet Tester	OTM2610	Modular 10G Ethernet Tester.
5	Multi-Service Tester	OTM2612	Modular Dual Optical and Electrical Dual Port 10G Ethernet/SDH/OTN Tester Ethernet Test: <ul style="list-style-type: none"> <li>● BERT, Frame analysis, RFC2544, Y.1564;</li> </ul> SDH/SONET Test: <ul style="list-style-type: none"> <li>● STM-1/STM-4/STM-16/STM64 Optical port;</li> <li>● OC-3/OC-12/OC-48/OC-192 Optical port;</li> </ul> OTN Test: <ul style="list-style-type: none"> <li>● OTU1/OTU2/OTU1e/OTU2e.</li> </ul>
6	Transmission Analyser	OTM2515	PDH/SDH Test: <ul style="list-style-type: none"> <li>● E1/E3/E4/STM-1 Electrical port;</li> <li>● STM-1 Optical Port;</li> </ul> DSn/SONET Test: <ul style="list-style-type: none"> <li>● DS1/DS3/OC-3 Electrical port;</li> <li>● OC-3 Optical Port.</li> </ul>
7	Transmission Analyser	OTM2516	PDH/SDH Test: <ul style="list-style-type: none"> <li>● E1/E3/E4/STM-1 Electrical port;</li> <li>● STM-1/4 Optical Port;</li> </ul> DSn/SONET Test: <ul style="list-style-type: none"> <li>● DS1/DS3/OC-3 Electrical port;</li> <li>● OC-3/12 Optical Port.</li> </ul>
8	Transmission Analyser	OTM2517	PDH/SDH Test: <ul style="list-style-type: none"> <li>● E1/E3/E4/STM-1 Electrical port;</li> <li>● STM-1/4/16 Optical Port;</li> </ul> DSn/SONET Test: <ul style="list-style-type: none"> <li>● DS1/DS3/OC-3 Electrical port;</li> <li>● OC-3/12/48 Optical Port.</li> </ul>

## TRANSMISSION AND METRO ETHERNET TEST INSTRUMENTS

NO.	Name	Model	Description
9	10G Multi-Service Tester	OTM2502	PDH/SDH Test: <ul style="list-style-type: none"> <li>• E1/E3/E4/STM-1 Electrical port;</li> <li>• STM-1/4/16/64 Optical Port;</li> </ul> DSn/SONET Test: <ul style="list-style-type: none"> <li>• DS1/DS3/OC-3 Electrical port;</li> <li>• OC-3/12/48/64 Optical Port;</li> </ul> 10M to 10G: <ul style="list-style-type: none"> <li>• BERT, Frame Analysis, RFC2544, Y.1564.</li> </ul>
10	10G Multi-Service Tester	OTM2512	PDH/SDH Test: <ul style="list-style-type: none"> <li>• E1/E3/E4/STM-1 Electrical port;</li> <li>• STM-1/4/16/64 Optical Port;</li> </ul> DSn/SONET Test: <ul style="list-style-type: none"> <li>• DS1/DS3/OC-3 Electrical port;</li> <li>• OC-3/12/48/192 Optical Port;</li> </ul> OTN Test: <ul style="list-style-type: none"> <li>• OTU1/OTU2, OTU1e/OTU2e;</li> </ul> 10M to 10G: <ul style="list-style-type: none"> <li>• BERT, Frame Analysis, RFC2544, Y.1564.</li> </ul>
11	100G Tester	OTM2620	100GE: <ul style="list-style-type: none"> <li>• BERT, Frame Analysis, RFC2544, Y.1564;</li> </ul> 100G OTN: <ul style="list-style-type: none"> <li>• OTU4/OTU3E1/OTU3E2/OTU3 BERT, SDT</li> </ul>
12	GE Synchronization Analyser	OTM2800	IEEE1588v2, SYNC-E, 1PPS+ToD, 1PPS, and TDM Synchronisation Test
13	10GE Synchronization Analyser	OTM2810	IEEE1588v2, SYNC-E, 1PPS+ToD, 1PPS, and TDM Synchronisation Test



## **SERVICE and SUPPORT**

### Sales Contact

Tel: +86(10)82771386-888

Email: [sales@opwill.com](mailto:sales@opwill.com)

### Technical Support

Tel: +86(10)82771386-800

Email: [support@opwill.com](mailto:support@opwill.com)



**OPWILL**

**OPWILL TECHNOLOGIES CO., LTD.**

Address: Room A-1445, Level 6 No. 28 Shangdi Information Road, Haidian District, Beijing, PRC

Post: 100085

Tel: +86(10)82771386/2866/3382

Fax: +86(10)82771782

Web: [www.opwill.com](http://www.opwill.com)

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