



Network & Service Companion (NSC-100)

Enterprise Ethernet Test

Empower techs with the simplest, most comprehensive, fastest (one-minute) service activation test and troubleshooting solution.

The NSC-100 is a test solution for Ethernet, Enterprise and Data Center Networks. It combines active Ethernet and WiFi testing capabilities enabling service activation and troubleshooting tests on all network layers.

- Simplify the Ethernet turn-up and troubleshooting process by enabling Ethernet tests on network Layers 2, 3, and 4.
- Identify and prevent customer affecting throughput issues by running active throughput tests (Speedtest, TrueSpeed RFC6349, iPerf).
- Validate business services as standalone unit, or as remote loopback device when combined with the T-BERD/MTS-5800 for Y.1564 and RFC2544 tests.
- Optimize WiFi coverage and performance; get network improvement recommendations when performance is below expectation.
- Perform 24/7 monitoring sessions for long-term, root cause failure analysis and SLA monitoring.



Benefits

- Support of Fiber, Ethernet and WiFi in one solution
- Flexible multi-tool for enterprise and fixed-line/mobile fronthaul service installation, performance measurements and troubleshooting
- Drive compliance of both direct and contracted staff with centralized, cloud-based workflow and result management
- Remote control for leave-behind use case enables long-term testing and failure analysis
- Service activation, test and performance management (L2/L3 loopback up to 10G, TWAMP reflector)
- Centralized test system (VIAVI Fusion) leveraging NSCs as remote controlled test agents

Features

- Ethernet test interfaces up to 10G
- Ethernet testing up to Layer 4 (TCP/UDP)
- WiFi 3x3 tests and WiFi Expert up to WiFi 6
- StrataSync and Mobile Tech app support
- Job Manager



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Specifications

GPON (Optional)		
ONU/ONT Emulation		VIAVI GPON SFP
Interface		SC/APC
Standard	G.984.2 GPON compliant	
	G.988 OMCI compliant	
Upstream (1310 nm) Tx Signal Power Range		0.5 dBm to 5.0 dBm
Downstream (1490 nm) Rx Signal Power Range		-28.0 dBm to -8.0 dBm
Test Results		PON Activation State, Power Level values from the SFP, PON ID, ODN Class – according to ITU-T G.984 and G.988 standards
XGSPON (Optional)		
ONU/ONT Emulation		VIAVI XGSPON SFP
Interface		SC/APC
Standard	G.9807.1 XGSPON compliant	
	G.988 OMCI compliant	
Upstream (1270 nm) Tx Signal Power Range		4.0 dBm to 9.0 dBm
Downstream (1577 nm) Rx Signal Power Range		-28.0 dBm to -9.0 dBm
Test Results		PON Activation State, Power Level values from the SFP, PON ID, ODN Class – according to ITU-T G.9807 and G.988 standards
Ethernet (Optional)		
Standard	IEEE 802.3	
	10M, 100M, 1G, 2.5G, 5G, and 10G Ethernet	
Test Results		Ethernet Frames, IP Connectivity, Ping, Traceroute, Web Connectivity, Speed Test up to 2 Gbps
TWAMP Reflector (Optional)	10M, 100M, and 1G Ethernet	
	TWAMP Light Reflector support	
Port/L2/L3 Loopback (Optional)	10M, 100M, 1G, and 10G Ethernet	
	Port Loopback and Source specific VIAVI Loopback support	
WiFi (Optional)		
Test Results	WiFi Expert (Passive Mode)	Up to WiFi 6 (802.11 a/b/g/n/ac/ax) Signal strength (RSSI), Channel, Standard, Width, Channel Noise, Total Airtime, Noise Airtime, Estimated Throughput, Recommendations
	OneCheck WiFi (Connected Mode)	Up to WiFi 5 3x3 (802.11 a/b/g/n/ac) Signal strength (RSSI), Standard, Width, Max Router PHY Rate, IP/Web connectivity, Throughput Tests

Throughput / Performance Test (Optional)	
TCP Throughput Test	VIAVI SpeedCheck Ookla Speedtest VIAVI TrueSpeed (RFC-6349) iPerf
Performance	2 Gbps for SpeedCheck, Ookla Speedtest, TrueSpeed, iPerf
Test Results	Delay, Upstream and Downstream Bit Rates
User Interface	
Communication Interface	Bluetooth v5.0
Smart Device Support (recommendation)	Mobile Tech app
	Android 8 or newer
	iOS 12 or newer
VIAVI Instrument Support	ONX-580, ONX-CATV
General	
Size	116 x 190 x 52 mm (4.6 x 7.5 x 2.0 in)
Weight	0.8 kg (1.7 lb)
Operating Temperature Range	Non-Charging: -10°C to 50°C
	Battery Charging: 0°C to 40°C
Storage Temperature Range	-20°C to 60°C
Operating Humidity Range	10% to 90% RH, non-condensing
Operating Altitude	4000 m max
DC Input Power	15V @ 3A, USB-C Power Delivery (PD)
Battery	32 W/hr Li-Ion rechargeable battery
	Field replaceable
Battery Life	1-week typical usage for installation technicians
Charge Port	USB-C
USB Host Port	USB-A (USB 3.0)

Ordering Information

Standard Packages		
PON Package	NSC100-GPON-BASE	GPON
	NSC100-GPON-PLUS	GPON, Ethernet, SpeedCheck 1G, Speedtest 1G
	NSC100-GPON-PRO	GPON, Ethernet, WiFi, SpeedCheck 1G, Speedtest 1G
	NSC100-XGSPON-BASE	XGSPON
	NSC100-XGSPON-PLUS	XGSPON, Ethernet, SpeedCheck 1G, Speedtest 1G
	NSC100-XGSPON-PRO	XGSPON, Ethernet, WiFi, SpeedCheck 1G, Speedtest 1G
	NSC100-GPON-XGSPON-BASE	GPON, XGSPON
	NSC100-GPON-XGSPON-PLUS	GPON, XGSPON, Ethernet, SpeedCheck 1G, Speedtest 1G
	NSC100-GPON-XGSPON-PRO	GPON, XGSPON, Ethernet, WiFi, SpeedCheck 1G, Speedtest 1G
Home Package	NSC100-HOME-PLUS	Ethernet, SpeedCheck 1G, Speedtest 1G
	NSC100-HOME-PRO	Ethernet, WiFi, SpeedCheck 1G, Speedtest 1G
Enterprise	NSC100-ENTERPRISE-PLUS	Ethernet, TrueSpeed 1G
	NSC100-ENTERPRISE-PRO	Ethernet, WiFi, TrueSpeed 1G
Loopback	NSC100-LOOPBACK-BASE	Ethernet Loopback 1G
	NSC100-LOOPBACK-PLUS	Ethernet Loopback 10G
Platinum	NSC100-PLATINUM-1G	GPON, Ethernet, WiFi, SpeedCheck 1G, Speedtest 1G, TrueSpeed 1G, Loopback 1G, TWAMP
	NSC100-PLATINUM-10G	GPON, Ethernet, WiFi, SpeedCheck 2G, Speedtest 2G, TrueSpeed 2G, Loopback 10G, TWAMP
Options		
Test Applications	NSC-OC-GPON	NSC OneCheck GPON
	NSC-OC-XGSPON	NSC OneCheck XGSPON
	NSC-OC-ETHERNET	NSC OneCheck Ethernet
	NSC-OC-WIFI	NSC OneCheck WiFi
	NSC-WIFI-EXPERT	NSC WiFi Expert
Speed Tests	NSC-SPEEDCHECK-1G	NSC SpeedCheck over 1GE port up to 1Gbps
	NSC-SPEEDCHECK-2G	NSC SpeedCheck over 2.5/5/10GE port up to 2Gbps
	NSC-SPEEDTEST-1G	NSC Ookla Speedtest over 1GE port up to 1Gbps
	NSC-SPEEDTEST-2G	NSC Ookla Speedtest over 1+1/2.5/5/10GE ports up to 2Gbps
	NSC-TRUESPEED-1G	NSC TrueSpeed (RFC-6349) over 1GE port up to 1Gbps
	NSC-TRUESPEED-2G	NSC TrueSpeed (RFC-6349) over 2.5/5/10GE port up to 2Gbps
	NSC-IPERF-1G	NSC iPerf Test over 1GE port up to 1Gbps
	NSC-IPERF-2G	NSC iPerf Test over 2.5/5/10GE port up to 2Gbps
Enterprise	NSC-LOOPBACK-1G	NSC L2/L3 1G Loopback
	NSC-LOOPBACK-10G	NSC L2/L3 10G Loopback
	NSC-FUSION-CLIENT	NSC Fusion Client
	NSC-TWAMP-REFLECTOR	NSC TWAMP Reflector
	NSC-OPTICAL-ETHERNET	NSC Optical Ethernet

Ordering Information continued

Options continued		
SFP	NSC-SFP-ELEC-1G	NSC 1G Electrical Ethernet SFP
	NSC-SFP-ELEC-AUTO-10G	NSC 2.5G, 5G and 10G Autoneg Electrical Ethernet SFP+
	NSC-SFP-ELEC-1-2.5-5-10G	NSC 1G, 2.5G, 5G and 10G Electrical Ethernet SFP+
	NSC-SFP-850-1G-10G	NSC 1G and 10G Optical Ethernet SFP+ 850 nm SR
	NSC-SFP-1310-1G-10G	NSC 1G and 10G Optical Ethernet SFP+ 1310 nm LR
	NSC-SFP-1550-1G-10G	NSC 1G and 10G Optical Ethernet SFP+ 1550 nm ER
	NSC-SFP-GPON	NSC GPON SFP
	NSC-SFP-XGSPON	NSC XGSPON SFP+
Optional Accessory		
	NSC-CAR-CHARGER	NSC Car Charger with Cable
Replacement Parts		
	NSC-BATTERY	NSC Battery
	NSC-CHARGER	NSC Charger with Cable
	NSC-STRAP	NSC Hand Strap
	NSC-CASE	NSC Carrying Case
	NSC-ETHERNET-ADAPTER	Ethernet Cat6a M-Adapter Cable
	NSC-ETHERNET-CABLE	Ethernet Cat6a M-M Patch Cable

VIAVI

Network & Service Companion (NSC-100)

Test Residential and Business Services

Empower techs with the simplest, most comprehensive, fastest service activation test and troubleshooting solution.

The Network & Service Companion (NSC-100) allows techs and contractors to validate both network and service layers before sharing their test results with customers and providers.

- Simplify the closeout test process and analysis for both inexperienced and expert techs with one-button, one-screen result tests, all run under 1 minute.
- Prevent customer complaints or find the root cause of issues by testing at every access point (GPON, XGSPON, Ethernet, WiFi) for a clear and fast demarcation – the way your customer experiences it.
- Optimize WiFi coverage and performance; educate end users with simple room-by-room analysis. Get network improvement recommendations when performance is below expectation.



Benefits

- Simply test everything anywhere – PON, Ethernet, WiFi
- Verify true customer experience and/or physical network layer on all PON, Ethernet and WiFi test interfaces
- Confirm PON service delivery is good before troubleshooting the premises
- Share reports directly via email
- Drive compliance of both direct and contracted staff with centralized, cloud-based workflow and result management

Features

- GPON, XGSPON, Ethernet and WiFi tests, including throughput tests up to 2 Gbps
- Ethernet 1G, 2.5G, 5G and 10G interfaces
- WiFi 3x3 tests and WiFi Expert up to WiFi 6 (802.11 a/b/g/n/ac/ax)
- PON data analysis (PON-ID)
- PON power levels
- Job Manager
- Mobile Tech app and StrataSync support



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ONU/ONT Emulation		VIAVI XGSPON SFP
Interface		SC/APC
Standard	G.9807.1 XGSPON compliant	
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Performance	2 Gbps for SpeedCheck, Ookla Speedtest, TrueSpeed, iPerf
Test Results	Delay, Upstream and Downstream Bit Rates
User Interface	
Communication Interface	Bluetooth v5.0
Smart Device Support (recommendation)	Mobile Tech app
	Android 8 or newer
	iOS 12 or newer
VIAVI Instrument Support	ONX-580, ONX-CATV
General	
Size	116 x 190 x 52 mm (4.6 x 7.5 x 2.0 in)
Weight	0.8 kg (1.7 lb)
Operating Temperature Range	Non-Charging: -10°C to 50°C
	Battery Charging: 0°C to 40°C
Storage Temperature Range	-20°C to 60°C
Operating Humidity Range	10% to 90% RH, non-condensing
Operating Altitude	4000 m max
DC Input Power	15V @ 3A, USB-C Power Delivery (PD)
Battery	32 W/hr Li-Ion rechargeable battery
	Field replaceable
Battery Life	1-week typical usage for installation technicians
Charge Port	USB-C
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	NSC100-XGSPON-PRO	XGSPON, Ethernet, WiFi, SpeedCheck 1G, Speedtest 1G
	NSC100-GPON-XGSPON-BASE	GPON, XGSPON
	NSC100-GPON-XGSPON-PLUS	GPON, XGSPON, Ethernet, SpeedCheck 1G, Speedtest 1G
	NSC100-GPON-XGSPON-PRO	GPON, XGSPON, Ethernet, WiFi, SpeedCheck 1G, Speedtest 1G
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	NSC100-HOME-PRO	Ethernet, WiFi, SpeedCheck 1G, Speedtest 1G
Enterprise	NSC100-ENTERPRISE-PLUS	Ethernet, TrueSpeed 1G
	NSC100-ENTERPRISE-PRO	Ethernet, WiFi, TrueSpeed 1G
Loopback	NSC100-LOOPBACK-BASE	Ethernet Loopback 1G
	NSC100-LOOPBACK-PLUS	Ethernet Loopback 10G
Platinum	NSC100-PLATINUM-1G	GPON, Ethernet, WiFi, SpeedCheck 1G, Speedtest 1G, TrueSpeed 1G, Loopback 1G, TWAMP
	NSC100-PLATINUM-10G	GPON, Ethernet, WiFi, SpeedCheck 2G, Speedtest 2G, TrueSpeed 2G, Loopback 10G, TWAMP
Options		
Test Applications	NSC-OC-GPON	NSC OneCheck GPON
	NSC-OC-XGSPON	NSC OneCheck XGSPON
	NSC-OC-ETHERNET	NSC OneCheck Ethernet
	NSC-OC-WIFI	NSC OneCheck WiFi
	NSC-WIFI-EXPERT	NSC WiFi Expert
Speed Test	NSC-SPEEDCHECK-1G	NSC SpeedCheck over 1GE port up to 1Gbps
	NSC-SPEEDCHECK-2G	NSC SpeedCheck over 2.5/5/10GE port up to 2Gbps
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	NSC-IPERF-1G	NSC iPerf Test over 1GE port up to 1Gbps
	NSC-IPERF-2G	NSC iPerf Test over 2.5/5/10GE port up to 2Gbps
Enterprise	NSC-LOOPBACK-1G	NSC L2/L3 1G Loopback
	NSC-LOOPBACK-10G	NSC L2/L3 10G Loopback
	NSC-FUSION-CLIENT	NSC Fusion Client
	NSC-TWAMP-REFLECTOR	NSC TWAMP Reflector
	NSC-OPTICAL-ETHERNET	NSC Optical Ethernet

Ordering Information continued

Options continued		
SFP	NSC-SFP-ELEC-1G	NSC 1G Electrical Ethernet SFP
	NSC-SFP-ELEC-AUTO-10G	NSC 2.5G, 5G and 10G Autoneg Electrical Ethernet SFP+
	NSC-SFP-ELEC-1-2.5-5-10G	NSC 1G, 2.5G, 5G and 10G Electrical Ethernet SFP+
	NSC-SFP-850-1G-10G	NSC 1G and 10G Optical Ethernet SFP+ 850 nm SR
	NSC-SFP-1310-1G-10G	NSC 1G and 10G Optical Ethernet SFP+ 1310 nm LR
	NSC-SFP-1550-1G-10G	NSC 1G and 10G Optical Ethernet SFP+ 1550 nm ER
	NSC-SFP-GPON	NSC GPON SFP
	NSC-SFP-XGSPON	NSC XGSPON SFP+
Optional Accessory		
	NSC-CAR-CHARGER	NSC Car Charger with Cable
Replacement Parts		
	NSC-BATTERY	NSC Battery
	NSC-CHARGER	NSC Charger with Cable
	NSC-STRAP	NSC Hand Strap
	NSC-CASE	NSC Carrying Case
	NSC-ETHERNET-ADAPTER	Ethernet Cat6a M-Adapter Cable
	NSC-ETHERNET-CABLE	Ethernet Cat6a M-M Patch Cable