

# VIAVI

## Network and 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).
- 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.



2019 Broadband Technology Review –  
4.0 Diamond Award Winner



2020 Lightwave Innovation Award –  
4.5 Winner

### 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)
- 3x3 WiFi antenna with 2.4 and 5 GHz
- StrataSync and Mobile Tech enabled
- Job Manager

## Specifications

<b>GPON (Optional)</b>		
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	
<b>XGSPON (Optional)</b>		
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	
<b>Ethernet (Optional)</b>		
Ethernet	RJ-45 (10M/100M/1G Ethernet)	
	1G Ethernet SFP, 1/2.5/5/10G Ethernet SFP+, 10G Ethernet SFP+	
Standard	IEEE 802.3	
	1 Gbps, 2.5 Gbps, 5 Gbps and 10 Gbps Ethernet	
Test Results	Ethernet Frames, IP Connectivity, Web Connectivity, Speed Test up to 2 Gbps	
TWAMP Reflector (Optional)	RJ-45, 1G Ethernet SFP	
	TWAMP Light Reflector support	
Port/L2/L3 Loopback (Optional)	RJ-45, 1G Ethernet SFP, 10G Ethernet SFP+	
	Port Loopback and Source specific VIAVI Loopback support	
<b>WiFi (Optional)</b>		
Interfaces	2.4 GHz, 5 GHz	
Test Results	WiFi Expert (Passive Mode)	Up to 802.11 a/b/g/n/ac/ax (WiFi 6 8x8) <ul style="list-style-type: none"> <li>Signal strength (RSSI), Channel, Standard, Width, Channel Noise, Total Airtime, Noise Airtime, Estimated Throughput, Recommendations</li> </ul>
	OneCheck WiFi (Connected Mode)	Up to 802.11 a/b/g/n/ac/ax (WiFi 6 8x8 with NSC connected as WiFi 5 3x3) <ul style="list-style-type: none"> <li>Signal strength (RSSI), Standard, Width, Max Router PHY Rate</li> </ul> Up to 802.11 a/b/g/n/ac (WiFi 5 3x3) <ul style="list-style-type: none"> <li>Adds IP/Web connectivity, Throughput Tests</li> </ul>
WiFi Radio	802.11 a/b/g/n/ac 3x3	

<b>Throughput / Performance Test (Optional)</b>	
Interface	GPON, Ethernet, WiFi
TCP Throughput Test	Ookla Speedtest VIAVI TrueSpeed (RFC-6349) VIAVI SpeedCheck
Performance	2 Gbps for Ookla Speedtest, TrueSpeed, SpeedCheck
Test Results	Delay, Upstream and Downstream Bit Rates
<b>User Interface</b>	
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
<b>General</b>	
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-day typical usage
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, Speedtest
	NSC100-GPON-PRO	GPON, Ethernet, WiFi, Speedtest
	NSC100-XGSPON-BASE	XGSPON
	NSC100-XGSPON-PLUS	XGSPON, Ethernet, Speedtest
	NSC100-XGSPON-PRO	XGSPON, Ethernet, WiFi, Speedtest
	NSC100-GPON-XGSPON-BASE	GPON, XGSPON
	NSC100-GPON-XGSPON-PLUS	GPON, XGSPON, Ethernet, Speedtest
Home Package	NSC100-GPON-XGSPON-PRO	GPON, XGSPON, Ethernet, WiFi, Speedtest
	NSC100-HOME-PLUS	Ethernet, Speedtest
Enterprise	NSC100-HOME-PRO	Ethernet, WiFi, Speedtest
	NSC100-ENTERPRISE-PLUS	Ethernet, TrueSpeed
Loopback	NSC100-ENTERPRISE-PRO	Ethernet, WiFi, TrueSpeed
	NSC100-LOOPBACK-BASE	Ethernet 1G
All	NSC100-LOOPBACK-PLUS	Ethernet 10G
	NSC100-PLATINUM-1G NSC100-PLATINUM-10G	All
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-TRUESPEED-1G	NSC TrueSpeed (RFC-6349) over 1GE port up to 1Gbps
	NSC-SPEEDTEST-1G	NSC Ookla SpeedTest over 1GE port up to 1Gbps
	NSC-SPEEDCHECK-1G	NSC SpeedCheck over 1GE port up to 1Gbps
	NSC-TRUESPEED-2G	NSC TrueSpeed (RFC-6349) over 2.5/5/10GE port up to 2Gbps
	NSC-SPEEDTEST-2G	NSC Ookla SpeedTest over 1+1/2.5/5/10GE ports up to 2Gbps
	NSC-SPEEDCHECK-2G	NSC SpeedCheck 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-10G	NSC 10G 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 (ONT Emulation)
	NSC-SFP-XGSPON	NSC XGSPON SFP+ (ONT Emulation)
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	



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