

# Novus ONE PLUS L2-7 Fixed Chassis

## Multi-Rate Ethernet Testing— Anywhere, Anytime

Keysight's Novus ONE PLUS is the industry's highest-density portable fixed chassis, offering complete Layer 2-7 network and application testing in a compact form-factor.

With Novus ONE PLUS's unique combination of portability and performance—up to 16 Dual-PHY ports per fixed chassis, you can create cost-effective Ethernet test environments for 3-Speed 10GE/1GE/100M or 5-Speed 10GE/5GE/2.5GE/1GE/100M over copper and fiber media.

The Novus ONE PLUS also supports 100Base-T1 and 1000Base-T1 automotive interfaces, enabling validation of electronic control units (ECU) and in-vehicular network.

A platform capable of time sensitive networking (TSN), Novus ONE PLUS provides a powerful time synchronization underlay that includes the ability to synchronize with an external clock reference or GPS signal powered by Keysight's Metronome Timing System.

Novus ONE PLUS supports up to line-rate L2/3 traffic generation and analysis, high-performance routing/bridging protocol emulation, and true L4-7 application traffic generation and subscriber emulation—all with one fixed chassis!

### Highlights

- Meet high-density test requirements with full-featured Dual-PHY (RJ45 and SFP+) 3-speed or 5-speed fixed chassis
- Test using multiple chassis with Keysight STAR and Metronome Synchronization support
- Test networks and devices cost-effectively with the industry's highest-density portable appliance
- Optimize lab space and power use with compact form factor and reduced power requirements
- Enable broad test functions across L2-7 with unified architecture that supports Keysight's IxNetwork, IxExplorer, and IxLoad applications
- Validate enterprise and service provider environments with appliance that is purpose-built to test high-performance, low-latency devices
- Validate automotive and industrial IoT (IIoT) networks
- Test with a platform that is TSN-capable with a time synchronization underlay



Novus ONE PLUS

Novus ONE PLUS is available in 3-Speed and 5-Speed models to match your requirements and budget:

- **Novus ONE PLUS 3-Speed 10GE/1GE/100M**
  - 16-port fixed chassis
  - 8-port fixed chassis
  - 4-port fixed chassis
- **Novus ONE PLUS 5-Speed 10GE/5GE/2.5GE/1GE/100M**
  - 16-port fixed chassis
  - 8-port fixed chassis
  - 4-port fixed chassis
- **Upgradable:** To support evolving test needs, users can perform a software field-upgrade to convert the 8- and 4-port products to a full 16-port Novus 3-Speed or 5-Speed fixed chassis.

### Portability and performance—small footprint and power

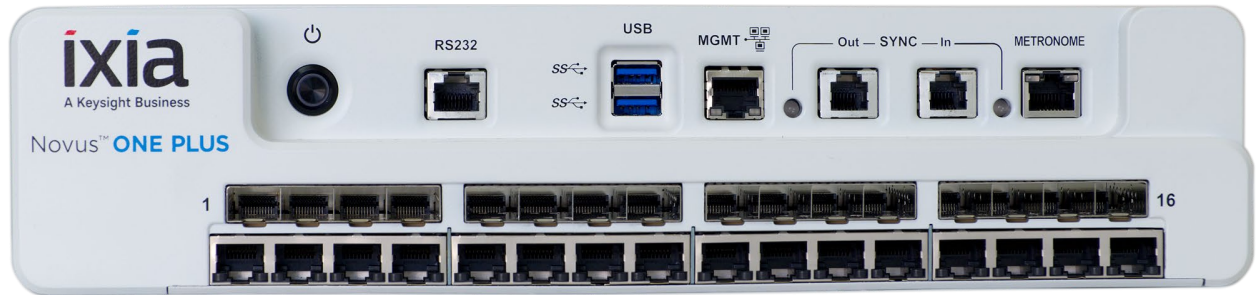
Equipped with powerful multi-core, multi-threaded network processors, Novus ONE PLUS uses Keysight's next-generation architecture designed to meet high-throughput testing needs. Due to its compact form-factor and reduced power requirements, the Novus ONE PLUS is a great option for customers who need high-performance testing yet are constrained by space and power availability in their lab.

A single Novus ONE PLUS allows emulation of up to 160Gbps of stateless application traffic and 20Gbps of stateful application traffic. The system uses inline field programmable gate arrays (FPGAs) for enhanced accuracy pertaining to latency measurements, with a resolution of up to 2.5ns to deliver line-rate performance, including small 64-byte packets.

### Key features

- Full line-rate traffic generation to evaluate ASIC designs, FPGAs, and hardware switch fabrics
- High scale and performance for emulating L2/3 protocols to validate performance and scalability of routing/switching and data center test cases by using Keysight's IxNetwork application
- Support for testing SFP+ and 10GBase-T RJ-45 copper ports at different speeds simultaneously
- Industry-standard RFC tests and protocol emulation on 10G, 5G, 2.5G, 1G, and/or 100M ports in a single test—to benchmark data-plane and performance and scale of network equipment
- 3-Speed 10G, 1G, and 100M or 5-Speed 10G, 5G, 2.5G, 1G, and 100M line-rate packet capture and decode tools to detect and debug data transmission errors
- Support for IxExplorer, IxNetwork, and IxLoad applications and related Tcl and automation APIs
- Flexible 4:1 CPU and memory aggregation, for high-scale protocol emulation and performance
- Real-time latency with latency resolution of up to 2.5ns

- Extensive port and traffic flow statistics
- Keysight synchronization support: STAR (secondary only) and Metronome synchronization



## Specifications

Novus ONE PLUS Product Description						
<b>Port Speeds</b>	<b>3-Speed 10GE/1GE/100M</b>			<b>5-Speed 10GE/5GE/2.5GE/1GE/100M</b>		
<b>Number of Ports</b>	<b>16</b>	<b>8</b>	<b>4</b>	<b>16</b>	<b>8</b>	<b>4</b>
<b>Part Number</b>	<b>941-0063</b>	<b>941-0064</b>	<b>941-0065</b>	<b>941-0066</b>	<b>941-0067</b>	<b>941-0068</b>
<b>Hardware Specifications</b>						
<b>Physical Interfaces</b>	Dual-PHY SFP+ / 10GBASE-T RJ-45					
<b>Synchronization</b>	Keysight STAR and Metronome Synchronization, enabling Keysight inter-chassis latency synchronization					
<b>CPU and Memory</b>	Multicore processor with 2GB of CPU memory per port pair					
<b>Cable Media</b>	<ul style="list-style-type: none"> <li>• Fiber</li> <li>• CAT5e</li> <li>• CAT6</li> <li>• CAT6A</li> </ul>					
<b>Appliance Dimensions</b>	<ul style="list-style-type: none"> <li>• 13.2" (W) x 3.0" (H) x 18" (D)</li> <li>• 335mm (W) x 76mm (H) x 457mm (D)</li> </ul>					
<b>Appliance Weights</b>	<ul style="list-style-type: none"> <li>• Appliance only: 27.4 lbs (12.41 kg)</li> <li>• Shipping: 34.5 lbs (15.65 kg)</li> </ul>					
<b>Temperature (Ambient Air)</b>	<ul style="list-style-type: none"> <li>• Operating: 41°F to 95°F (5°C to 35°C)</li> <li>• Storage: 41°F to 122°F (5°C to 50°C)</li> </ul>					

## Novus ONE PLUS Product Description

<b>Power</b>	<ul style="list-style-type: none"> <li>• Input voltage: 90V to 264V</li> <li>• Total max power: 750W</li> </ul>
<b>Humidity (Ambient Air)</b>	<ul style="list-style-type: none"> <li>• Operating: 0 % to 85 %, non-condensing</li> <li>• Storage: 0 % to 85 %, non-condensing</li> </ul>
<b>Operating System</b>	Native IxOS
<b>Transmit Feature Specifications</b>	
<b>Transmit Engine</b>	Wire-speed packet generation with timestamps, sequence numbers, data integrity signature, and packet group signatures
<b>Max. Streams per Port</b>	512
<b>Max. Streams per Port in Data Center Ethernet</b>	256
<b>Stream Controls</b>	Rate and frame size change on the fly, sequential and advanced stream scheduler
<b>Minimum Frame Size</b>	10GbE: <ul style="list-style-type: none"> <li>• 49 bytes at full line rate without UDF</li> <li>• 60 bytes at full line rate with UDF</li> </ul> 1GbE and 100MbE: <ul style="list-style-type: none"> <li>• 49 bytes at full line rate</li> </ul>
<b>Maximum Frame Size</b>	16,384 bytes
<b>Maximum Frame Size in Data Center Ethernet</b>	9,216 bytes
<b>Priority Flow Control</b>	<ul style="list-style-type: none"> <li>• 8 line-rate-capable queues, each supporting up to 2,500-byte frame lengths</li> <li>• 1 queue supporting up to 9,216-byte frame lengths</li> </ul>
<b>Frame Length Controls</b>	Fixed, increment by user-defined step, weighted pairs, uniform, repeatable random, IMIX, and Quad Gaussian
<b>User-Defined Fields (UDF)</b>	Fixed, increment or decrement by user-defined step, sequence, value list, and random configurations; up to five, 32-bit-wide UDFs are available
<b>Value Lists (Max.)</b>	2M across 5 UDF
<b>Sequence (Max.)</b>	512

## Novus ONE PLUS Product Description

<b>Error Generation</b>	Generate good CRC or force bad CRC, undersize and oversize standard Ethernet frame lengths, and bad checksum
<b>Hardware Checksum Generation</b>	Checksum generation and verification for IPv4, IP over IP, ICMP/GRE/TCP/UDP, L2TP, GTP
<b>Link Fault Signaling</b>	10GE: Reports, no fault, remote fault, and local fault port statistics; ability to select the option to have the transmit port ignore link faults from a remote link partner
<b>Latency Measurement Resolution</b>	2.5 nanoseconds
<b>Transmit Line Clock Adjustment</b>	Ability to adjust the parts-per-million line frequency over a range of -100 ppm to +100 ppm across all ports on the appliance
<b>Receive Feature Specifications</b>	
<b>Receive Engine</b>	Wire-speed packet filtering, capturing, real-time latency, and inter-arrival time for each packet group, with data integrity, sequence and advanced sequence checking capability
<b>Trackable Receive Flows per Port</b>	<ul style="list-style-type: none"> <li>• 1M without Tx/Rx Sync and sequence checking</li> <li>• 512k with Tx/Rx Sync and sequence checking</li> </ul>
<b>Minimum Frame Size</b>	<ul style="list-style-type: none"> <li>• 64 bytes at full line rate into the capture buffer</li> <li>• 49 bytes at less than full line rate</li> </ul>
<b>Filters (User-Defined Statistics, UDS)</b>	2 SA/DA pattern matchers, 2x16-byte user-definable patterns with offsets capability for start of: frame, IP, or protocol; up to 6 UDS counters are available
<b>Hardware Capture Buffer</b>	512MB per port
<b>Statistics and Rates</b>	Link state, line speed, frames sent, valid frames received, bytes sent/received, fragments, undersize, oversize, CRC errors, VLAN tagged frames, 6 user-defined stats, capture trigger (UDS 3), capture filter (UDS 4), 8 QoS counters, data integrity frames, data integrity errors, sequence and advanced sequence checking frames, sequence checking errors, ARP, and PING requests and replies
<b>Latency/Jitter Measurements</b>	Cut-through, store and forward, forwarding delay, up to 16 time bins, MEF jitter, and inter-arrival time

## Novus ONE PLUS Product Description

### Layer 2-3 Protocol Support

<b>Routing and Switching</b>	BGP4/BGP4+, OSPFv2/v3, ISISv4/v6, EIGRP/EIGRPv6, RIP/RIPng, BFD, IGMP/MLD, PIM-SM/SSM, STP/RSTP/MSTP, PVST+/RPVST+, Link Aggregation (LACP), LISP
<b>Software Defined Network</b>	OpenFlow, Segment Routing, BGP Link State (BGP-LS), PCEP, VXLAN, EVPN VXLAN, OVSD, GENEVE
<b>MPLS</b>	RSVP-TE P2P/P2MP, LDP/LDPv6/mLDP, LDP L2VPN (PWE/VPLS), BGP VPLS, L3VPN/6VPE, 6PE, BGP RFC3107, MPLS-TP, MPLS OAM, EVPN/PBB-EVPN, Multicast VPN Rosen Draft, NG Multicast VPN
<b>Broadband and Authentication</b>	PPPoX/L2TPv2, DHCPv4/DHCPv6, ANCP, IPv6 Autoconfiguration (SLAAC), IGMP/MLD, IPTV, 802.1x, WebAuth, EAPoUDP, Cisco NAC
<b>Industrial Ethernet</b>	Link OAM (IEEE 802.3ah), CFM/Y.1731, PBB/PBB-TE, ELMI, TWAMP, Sync-E ESMC, IEEE 1588v2 (PTP), gPTP (IEEE 802.1AS), MSRP (IEEE 802.1 Qat), IEEE 1722
<b>Data Center Ethernet</b>	DCBX/LLDP, FCoE/FIP, PFC (IEEE 802.1Qbb), TRILL, Cisco FabricPath, SPBM, VEPA

### Layer 4-7 Application Traffic Testing Support

<b>Data</b>	HTTP, HTTPS, TCP Session, FTP, DNS, Mail (SMTP, POP3, and IMAP), TFTP, AppReplay, AppLibrary
<b>Video</b>	RTSP, IPTV, VoD, Adobe Flash Client, Apple HLS Client, Microsoft Silverlight Client, Adobe HDS Client, DASH Client; includes Video Quality VQMON and TCP Video Quality
<b>Voice</b>	Advanced VoIP SIP and RTP, Audio and Video Codecs, VoLTE, MSRP, Telepresence, SMS; includes: Voice Quality and Video Quality for conversational video traffic
<b>Storage</b>	iSCSI, CIFSv1, CIFSv2 (SMB2), SMB3, NFSv3 Client, NFSv4 Client, NFS4.1 Client, Cloud Storage Client
<b>Access</b>	IPv4, IPv6, VLAN, Emulated Routers, DNS, DHCP

## Ordering Information

### 3-Speed Novus ONE PLUS

#### 941-0063

IXIA Novus ONE PLUS 10/1GE16DP Fixed Chassis, 16-port, SFP+/10GBASE-T Dual-PHY 10GE/1GE/100M, 1-slot Dual-PHY with 16-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software.

#### 941-0064

IXIA Novus ONE PLUS 10/1GE8DP Fixed Chassis, 8-port, SFP+/10GBASE-T Dual-PHY 10GE/1GE/100M, 1-slot Dual-PHY with 8-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software.

#### 941-0065

IXIA Novus ONE PLUS 10/1GE4DP Fixed Chassis, 4-port, SFP+/10GBASE-T Dual-PHY 10GE/1GE/100M, 1-slot Dual-PHY with 4-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software.

### 5-Speed Novus ONE PLUS

#### 941-0066

IXIA Novus ONE PLUS 10/5/2.5/1GE16DP Fixed Chassis, 16-port, SFP+/10GBASE-T Dual-PHY 10/5/2.5/1GE/100M, 1-slot Dual-PHY with 16-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software.

#### 941-0067

IXIA Novus ONE PLUS 10/5/2.5/1GE8DP Fixed Chassis, 8-port, SFP+/10GBASE-T Dual-PHY 10/5/2.5/1GE/100M, 1-slot Dual-PHY with 8-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software.

#### 941-0068

IXIA Novus ONE PLUS 10/5/2.5/1GE4DP Fixed Chassis, 4-port, SFP+/10GBASE-T Dual-PHY 10/5/2.5/1GE/100M, 1-slot Dual-PHY with 4-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software.

## TAA 3-Speed Novus ONE PLUS

### 941-0063-T

IXIA TAA Compliant, Novus ONE PLUS 10/1GE16DP Fixed Chassis, 16-port, SFP+/10GBASE-T Dual-PHY 10GE/1GE/100M, 1-slot Dual-PHY with 16-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software.

### 941-0064-T

IXIA Novus ONE PLUS 10/1GE8DP Fixed Chassis, 8-port, SFP+/10GBASE-T Dual-PHY 10GE/1GE/100M, 1-slot Dual-PHY with 8-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software.

### 941-0065-T

IXIA TAA Compliant, Novus ONE PLUS 10/1GE4DP Fixed Chassis, 4-port, SFP+/10GBASE-T Dual-PHY 10GE/1GE/100M, 1-slot Dual-PHY with 4-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software.

## TAA 5-Speed Novus ONE PLUS

### 941-0066-T

IXIA TAA Compliant, Novus ONE PLUS 10/5/2.5/1GE16DP Fixed Chassis, 16-port, SFP+/10GBASE-T Dual-PHY 10/5/2.5/1GE/100M, 1-slot Dual-PHY with 16-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software.

### 941-0067-T

IXIA TAA Compliant, Novus ONE PLUS 10/5/2.5/1GE8DP Fixed Chassis, 8-port, SFP+/10GBASE-T Dual-PHY 10/5/2.5/1GE/100M, 1-slot Dual-PHY with 8-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software

### 941-0068-T

IXIA TAA Compliant, Novus ONE PLUS 10/5/2.5/1GE4DP Fixed Chassis, 4-port, SFP+/10GBASE-T Dual-PHY 10/5/2.5/1GE/100M, 1-slot Dual-PHY with 4-ports each of the SFP+ and 10GBASE-T RJ45 physical interfaces. L2-7 support. Includes installation of the latest production released version of the IxOS software

## Port upgrade option

### 905-1006

IXIA NOVUS-UPGRADE, additional 8-port enablement for a FIELD UPGRADE to the following products: NOVUS10/1GE8DP (944-1143), Novus10/5/2.5/1/100M8DP (944-1149),



Novus10/5/2.5/1/100M8DP-R (944-1155), NOVUS-NP10/1GE8DP (944-1163), Novus ONE-3-Speed 8-Port Appliance (941-0061), Novus ONE PLUS 3-Speed 8-Port Fixed Chassis (941-0064) and Novus ONE PLUS 5-Speed 8-Port Fixed Chassis (941-0067)

Note1. This creates a total of 16-ports enabled on the load module or Fixed Chassis. Note2: For the additional 8-port upgrade purchase please provide the serial number of the desired load module or Fixed Chassis to install the option on at the time of order placement

### **905-1037**

IXIA NOVUS-UPGRADE, additional 12-port enablement for a FIELD UPGRADE to the following products: Novus ONE 4-port 3-Speed Appliance (941-0062), Novus ONE PLUS 4-port 3-Speed Fixed Chassis (941-0065) and Novus ONE PLUS 4-port 5-Speed Fixed Chassis (941-0068)

Note 1. This creates a total of 16-ports enabled on the load module. Note 2: For the additional 12-port upgrade purchase please provide the serial number of the desired load module to install the option on at the time of order placement

## **Cables and transceivers**

### **988-0011**

SFP+10GBASE-SR/SW and 1000BASE-SX Dual-Rate pluggable optical transceiver for 10/1 Gigabit Ethernet LAN/WAN load modules with pluggable SFP+ interface, 850nm. Compatible with all 10/1 Gigabit Ethernet Novus, PerfectStorm and Firestorm load modules and appliances. Note: Multi-mode fiber LC-LC, 3-meter cable included

### **988-0012**

SFP+10GBASE-LR/LW and 1000BASE-LX Dual-Rate pluggable optical transceiver for 10/1 Gigabit Ethernet LAN/WAN load modules with pluggable SFP+ interface, 1310nm, 10km reach. Compatible with all 10/1 Gigabit Ethernet Novus, PerfectStorm and Firestorm load modules and appliances. Note: Single-mode fiber LC-LC, 10 ft. cable included

### **948-0013**

SFP+10GBASE-SR/SW, Accessory, SFP+ Transceiver for 10 Gigabit Ethernet LAN/WAN load modules with pluggable SFP+ interface, 850nm; Operates with 944-0050 (LSM10GXM4S-01), 944-0051 (LSM10GXM8S-01), 944-0052 (LSM10GXMR4S-01), 944-0053 (LSM10GXMR8S-01), 944-0054 (LSM10GXM2S-01), 944-0055 (LSM10GXMR2S-01); and 944-0022 (LSM10G1-01) with 948-0012 (SFP+ADAP-01); or 944-0024 (LSM10GL1-01) with 948-0012 (SFP+ADAP-01)

### **948-0014**

SFP+10GBASE-LR/LW, Accessory, SFP+ Transceiver for 10 Gigabit Ethernet LAN/WAN load modules with pluggable SFP+ interface, 1310nm; Operates with 944-0050 (LSM10GXM4S-01), 944-0051 (LSM10GXM8S-01), 944-0052 (LSM10GXMR4S-01), 944-0053 (LSM10GXMR8S-01), 944-0054 (LSM10GXM2S-01), 944-0055 (LSM10GXMR2S-01); and 944-0022 (LSM10G1-01) with 948-0012 (SFP+ADAP-01); or 944-0024 (LSM10GL1-01) with 948-0012 (SFP+ADAP-01)

## **948-0015**

SFP+10GBASE-LRM, Accessory, SFP+ Transceiver for 10 Gigabit Ethernet LAN/WAN load modules with pluggable SFP+ interface, For multimode fiber, 1310nm; Operates with 944-0050 (LSM10GXM4S-01), 944-0051 (LSM10GXM8S-01), 944-0052 (LSM10GXMR4S-01), 944-0053 (LSM10GXMR8S-01), 944-0054 (LSM10GXM2S-01), 944-0055 (LSM10GXMR2S-01); and 944-0022 (LSM10G1-01) with 948-0012 (SFP+ADAP-01); or 944-0024 (LSM10GL1-01) with 948-0012 (SFP+ADAP-01); NOTE: SFP+10GBASE-LRM does not support the 10GbE WAN mode in any of the load modules listed above

## **948-0016**

SFP+10GSFP+Cu, Accessory, passive, copper Direct Attach Cable Assembly for 10 Gigabit Ethernet LAN/WAN load modules with pluggable SFP+ interface, 3-meter length; NGY 10GE SFP+ modules, Xdensity modules, and Xcellon-Flex 10GE SFP+ FE and AP modules

## **SFP-LX**

SFP 1 Gigabit Ethernet Transceiver - 1310nm LX

## **SFP-SX**

SFP 1 Gigabit Transceiver - 850nm SX

## **SFP-FX-100M-XCVR**

SFP 100BASE-FX 100M pluggable optical transceiver, MMF (multimode), 1310nm, 2km reach

## **948-0062**

IXIA SFP TRANSCEIVER, AUTOMOTIVE ETHERNET, 1000BASE-T1, 100BASE-T1, 1GBPS/100MBPS. 1G/100M Automotive Ethernet (1000BASE-T1 and 100BASE-T1) transceiver for use with the NOVUS 10GE/1GE/100M Modules (944-1142, 944-1143, 944-1146 and 944-1141) OR NOVUS 10/5/2.5/1/100M Modules (944-1148 and 944-1149) OR the Novus One 10GE/1GE/100M Appliances (941-0060 and 941-0061) OR Novus ONE PLUS fixed chassis (941-0063, 941-0064, 941-0065, 941-0066, 941-0067 and 941-0068). Requires IxOS 9.00 EA Patch 2 or later

## **TAA Transceivers**

### **SFP-PLUS-LR-XCVR-T**

Ixia, TAA compliant, SFP+ 10GBASE LR pluggable optical transceiver, 1310nm, SMF (single mode fiber), 10km reach, LC (948-0057). COMPATIBLE NETWORK TEST PRODUCTS: Novus 10/1 3 Speed (944-1141, 944-1142, 944-1143, 944-1146), Novus 10/1 5 Speed (944-1148, 944-1149, 944-1154, 944-1155) and Novus ONE PLUS (941-0063, 941-0064, 941-0065, 941-0066, 941-0067, 941-0068)

### **SFP-PLUS-SR-XCVR-T**

Ixia, TAA compliant, SFP+ 10GBASE SR pluggable optical transceiver, MMF (multimode fiber), 850nm, 300m reach, LC (948-0048). COMPATIBLE NETWORK TEST PRODUCTS: Novus 10/1 3 Speed (944-1141, 944-1142, 944-1143, 944-1146), Novus 10/1 5 Speed (944-1148, 944-1149, 944-1154, 944-1155) and Novus ONE PLUS (941-0063, 941-0064, 941-0065, 941-0066, 941-0067, 941-0068)

### **SFP-LX-I-XCVR-T**

Ixia, TAA Compliant, Industrial temperature rate 1G LX transceiver (995-0060). COMPATIBLE NETWORK TEST PRODUCTS: Novus 10/1 3 Speed (944-1141, 944-1142, 944-1143, 944-1146), Novus 10/1 5 Speed (944-1148, 944-1149, 944-1154, 944-1155) and Novus ONE PLUS (941-0063, 941-0064, 941-0065, 941-006,6 941-0067, 941-0068)

### **SFP-SX-I-XCVR-T**

Ixia, TAA Compliant, Industrial temperature rate 1G SX transceiver (995-0061). COMPATIBLE NETWORK TEST PRODUCTS: Novus 10/1 3 Speed (944-1141, 944-1142, 944-1143, 944-1146), Novus 10/1 5 Speed (944-1148, 944-1149, 944-1154, 944-1155) and Novus ONE PLUS (941-0063, 941-0064, 941-0065, 941-006,6 941-0067, 941-0068)

### **SFP-PLUS-LR-XCVR-D-T**

Ixia, TAA compliant, SFP+ 10/1GBASE Dual Rate LR pluggable optical transceiver, 1310nm, MMF (single mode fiber), 10km reach, LC (948-0070). COMPATIBLE NETWORK TEST PRODUCTS: Novus 10/1 3 Speed (944-1141, 944-1142, 944-1143, 944-1146), Novus 10/1 5 Speed (944-1148, 944-1149, 944-1154, 944-1155) and Novus ONE PLUS (941-0063, 941-0064, 941-0065, 941-006,6 941-0067, 941-0068)

### **SFP-PLUS-SR-XCVR-D-T**

Ixia, TAA compliant, SFP+ 10/1GBASE Dual Rate LR pluggable optical transceiver, 1310nm, MMF (single mode fiber), 10km reach, LC (948-0070). COMPATIBLE NETWORK TEST PRODUCTS: Novus 10/1 3 Speed (944-1141, 944-1142, 944-1143, 944-1146), Novus 10/1 5 Speed (944-1148, 944-1149, 944-1154, 944-1155) and Novus ONE PLUS (941-0063, 941-0064, 941-0065, 941-006,6 941-0067, 941-0068)

## **IxNetwork product packages for Novus ONE PLUS**

Note: Novus ONE PLUS only supports the products listed below which are perpetual node-locked packaged licenses and IxNetwork HW subscription tier licenses. It does not support other node-locked a la carte licenses, bundle licenses and tier licenses

### **930-2220 (TAA Version 930-5006-T)**

Ixia IxNetwork, All Inclusive package for Novus ONE PLUS. Supports all IxNetwork software features with exclusion; Excludes: 930-3461 IxNetwork AppLibrary Slot Bundle, Layer 4-7 Performance Test Application; 930-2222 IxNetwork Encryption test package for Novus ONE PLUS. Any optional script package or IxSuiteStore optional test suite is not considered as part of IxNetwork software features\*

\*Note: Novus ONE PLUS does not support traditional IxNetwork a la carte license, bundle license and tier licenses

### **930-2221 (TAA Version 930-5005-T)**

Ixia IxNetwork, Basic package for Novus ONE PLUS; INCLUDES: IxNetwork Base, RFC2544/2889/3918 QuickTest

### **930-2222**

Ixia IxNetwork, Encryption Test package for Novus ONE PLUS; INCLUDES: MACsec Emulation; REQUIRES: 930-2221 IxNetwork Basic package for Novus ONE PLUS; Recommend with: 930-3461 IxNetwork AppLibrary Slot Bundle, Optional Software, Layer 4-7 Performance Test Application for additional encryption/decryption capability in Static MACsec emulation

### **930-9501**

IxNetwork Tier-1 FLOATING Subscription license for use with Ixia hardware. Includes all IxNetwork protocols supported in IxNetwork for a duration of 1-Year. Supports low scale control plane. Requires: 930-1001 IxNetwork Subscription Framework (HW)

### **930-9502**

IxNetwork Tier-2 FLOATING Subscription license for use with Ixia hardware. Includes all IxNetwork protocols supported, all IxNetwork QuickTests, All Test Automation (Macro Recorder, Test Composer licenses) features for a duration of 1-Year. Supports unlimited scale control plane (not to exceed LM capacity) Requires: 930-1001 IxNetwork Subscription Framework (HW)

### **930-9503**

IxNetwork Tier-3 FLOATING Subscription license for use with Ixia hardware. Includes all IxNetwork protocols supported, all IxNetwork QuickTests, All Test Automation (Macro Recorder, Test Composer licenses) features, AppLibrary for a duration of 1-Year. Supports unlimited scale control plane (not to exceed LM capacity). Requires: IxNetwork Subscription Framework (HW) 930-1001

## **Ixload product packages for Novus ONE PLUS**

IxLoad software license bundles for appliances listed below are supported on Novus One Plus:

### **925-6321 (TAA Version 925-0507-T)**

IxLoad, Appliance Multiplay, Software Bundle, Layer 4-7 Performance Test Application. Enables IxLoad Data, Voice, Video, Access, VPN and Storage on PerfectStorm ONE and Novus ONE appliances. Includes:

- 925-6121 IxLoad Appliance DATA
- 925-6112 IxLoad Appliance VIDEO
- 925-6113 IxLoad Appliance VOICE
- 925-6117 IxLoad Appliance Access and VPN

### **925-6104 (TAA Version 925-0504-T)**

IxLoad Appliance Basic, Optional Software, Layer 4-7 Performance Test Application. Enables IxLoad Basic functionality on PerfectStorm ONE and Novus ONE appliances. Includes: HTTP, HTTPS, DNS, ADVNET-DHCP, WAP, Stateless Peer.

### **925-6121 (TAA Version 925-0505-T)**

IxLoad Appliance Data, Software, Layer 4-7 Performance Test Application. Enables IxLoad DATA functionality on PerfectStorm ONE and Novus ONE appliances. Includes:

- 925-6104 IxLoad Appliance BASIC (HTTP, HTTPS, DNS, ADVNET-DHCP, Stateless Peer)
- FTP, DHCP, IMAP, POP3, SMTP, TFTP, App-Replay, TCPsession HTTP Quick Test, RFC 3511 Quick Test
- Storage: NFSv3, NFSv4, NFSv4.1, SMBv3, CIFS, CIFSv2 iSCSI, iSCSI Quick Test

### **925-6112**

IxLoad Appliance VIDEO, Software Bundle, Layer 4-7 Performance Test Application. Enables IxLoad Video functionality on PerfectStorm ONE and Novus ONE appliances. Includes:

- RTSP, IPTV, Video-ADVANCED
- FLASH, APPLE HLS, Silverlight, Adobe HDS, MPEG-DASH
- Video Quality VQMON engine for up to 10Gbps
- TCP VQ—Video quality for TCP video traffic for up to 10 Gbps

### **925-6113**

IxLoad Appliance VOICE, Software Bundle, Layer 4-7 Performance Test Application. Enables IxLoad Voice functionality on PerfectStorm ONE and Novus ONE appliances. Includes:

- Advanced SIP, SIP endpoint, Proxy and Cloud emulation
- TLS, SRTP
- Audio, Video Conference, Telepresence, MSRP
- Voice Quality engine for up to 10Gbps
- Video Quality engine for up to 10Gbps video conversation traffic

### **925-6117 (TAA Version 925-0506-T)**

IxLoad Appliance ACCESS + VPN, Software, Layer 4-7 Performance Test Application. Enables IxLoad Access and VPN functionality on PerfectStorm ONE and Novus ONE appliances. Includes:

- 925-6104 IxLoad Appliance BASIC (HTTP, HTTPS, DNS, ADVNET-DHCP, Stateless Peer)
- IPsec, IPsec SUITES B, IPsec Quick Tests, PPP, L2TP, L2TP/IPsec
- IPv6 Transitioning: SLAAC, 6rd, DSLite
- ADVNET: DHCP, DHCPv6 (client and server), RADIUS; ADVNET-802.1X, ADVNET-NAC, ADVNET-WEBAUTH

## 925-3461

IxLoad AppLibrary Slot Bundle, Software Bundle, Layer 4-7 Performance Test Application; Enables support for AppLibrary on a single load module. It includes AppLibrary Slot Feature (925-3462) and Slot Subscription service (925-3460) to access new application flows for one year; Requires previous purchase of 925-3040 (IXLOAD Base) or higher bundle

Learn more at: [www.keysight.com](http://www.keysight.com)

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: [www.keysight.com/find/contactus](http://www.keysight.com/find/contactus)

