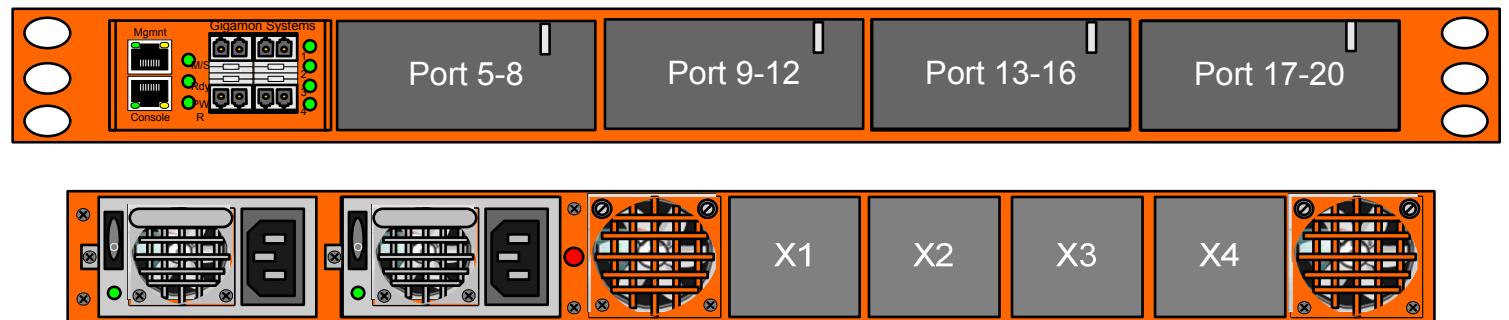


GigaVUE-420 System and Module Specifications

GVS-421/3 GVS-422/4 Base System Specifications



Base Product Descriptions GVS-421/3 GVS-422/4

GigaVUE-420 CU: modular base unit with a fixed management module containing 4 Ethernet 10/100/1000 copper ports, a 10/100/1000 Ethernet management port, and a Cisco compatible serial port. Base unit expandable up to 20 Gigabit Ethernet ports using 4 optional modules in front, and up to 4 optional 10Gigabit Ethernet modules in the rear. The front slots accept GigaPORT, GigaTAP-Tx, and/or GigaTAP-Sx port expansion modules (same as in the GigaVUE-MP system). The rear slots accept 10Gigabit Ethernet GigaLINK-XR, and 10Gigabit Ethernet GigaLINK-CU modules as 10Gigabit stacking/network/tool ports. All open front and rear expansion slots require blank covers installed to maintain proper system cooling and product warranty.

Power: dual redundant load-sharing AC or DC power supplies. Cooling: dual redundant cooling fans.

GigaVUE-420 FO: similar to GigaVUE-420 CU but with 4 fiber optic Gigabit Ethernet ports instead.

See order code section below.

Included Accessories

Rack mount kit with front and rear rack mounting brackets; 2 North American AC modular power cords for AC unit; serial console cable (Cisco compatible).

Standard Ports and Expansion Slots

GigaVUE-420 CU base unit: 4 Ethernet 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE802.3ab 1000Base-T Gigabit Ethernet).

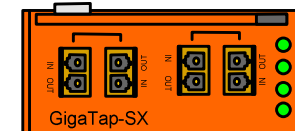
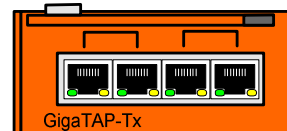
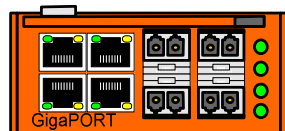
GigaVUE-420 FO base unit: 4 Gigabit Fiber Optic Ethernet ports (IEEE 802.3z).

	<p>All base unit include:</p> <p>1 10/100/1000 Base-T RJ45 Ethernet management port.</p> <p>1 RS-232 console port with RJ-45 connector, Cisco compatible.</p> <p>All Ethernet ports and management port support Auto-MDIX, auto-negotiation.</p> <p>Front expansion slots: four, each accommodate a single GigaPORT, GigaTAP-Tx, GigaTAP-Sx/Lx module.</p> <p>Rear expansion slots: four 10Gigabit Ethernet GigaLINK expansion slots, accommodates up to four GigaLINK-CU or GigaLINK-XR (IEEE 802.3ae) modules, or up to two 10GigaTAP-XR modules.</p>
Optional Expansion Modules	<p>Four-port Gigabit Ethernet modules: GigaPORT, GigaTAP-Tx, GigaTAP-Sx, GigaTAP-Lx.</p> <p>0Gigabit Ethernet modules: GigaLINK-CU, GigaLINK-XR, 10GigaTAP-XR.</p>
Power Supplies	<p>2 redundant, load sharing, hot-swappable modules (AC or DC).</p> <p>See Electrical Characteristics below.</p>
Physical Characteristics	<p>1U chassis:</p> <p>Dimensions (without mounting brackets) 1.75(h) x 17.31(w) x 23.50(d) inches. Add 2 inch (5.1 cm) to depth when 10GigaTAP module is installed. (4.5 x 44.0 x 59.7 cm) (1U height)</p> <p>Weight (fully populated) System weight: approximately 30.8 lbs/14.0 kg. Shipping weight: approximately 45 lbs/20.5 kg.</p>
Mounting	<p>Mounts in an EIA-standard 19 inch or 24 inch telco rack or equipment cabinet.</p> <p>Front and rear mounting brackets included.</p>
Performance	<p>Port to port packet throughput: Wire speed per port, no degradation when filters/maps are applied.</p> <p>Gigabit and 10 Gigabit</p>
Environment	<p>RoHS compliance All GigaVUE-420 products are RoHS compliant.</p> <p>Operating temperature 32°F to 104°F (0°C to 40°C)</p>

Operating relative humidity	20% to 80%, non-condensing
Non-operating/storage temperature	-4°F to 158°F (-20°C to 70°C)
Non-operating/storage relative humidity	15% to 85%, non-condensing
Altitude	Up to 15,000ft. (4.6km)
Electrical Characteristics	
Power supply types	Dual 1+1 redundant load sharing hot swappable power supplies, AC or DC.
Heat/power dissipation	Fully populated 20+4 port system with all ports at 100% traffic load: nominally 160Watts/546 BTU/hr
Voltage, input	AC power modules: 100 to 240VAC. Fuse rating: internally protected, not user accessible. DC power modules: -36 to -72VDC. Inputs reverse polarity protected. For DC source: optional external fuse rating: 6 Amps Slow-Blo.
Current (nominal)	1.45Amp @ 110VAC 3.33Amp @ -48VDC
Frequency	50/60 Hz for AC
Safety	UL 60950-1; CSA C22.2 EN 60950-1.
Emissions	FCC Part 15, class A; VCCI class A; EN55022/CISPR-22 class A; Australian/New Zealand AS/NZS CISPR-22 class A; CE Mark EN 55022 class A
Immunity	ETSI EN 300 386 V1.3.2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-3-2.
Management	User interface: command line interface CLI; out of band management (serial RS-232C port); telnet, SSH2 through Ethernet management port. RADIUS, TACACS+ support.

Standards and Protocols	IEEE 802.1Q VLAN, IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-X, RFC 783 TFTP, RFC 791 IP, RFC 793 TCP, RFC 826 ARP, RFC 854 Telnet, RFC 768 UDP, RFC 792 ICMP, SNMP v1/v2c, RFC 2131 DHCP client, RFC 1492 TACACS+,
Order Codes	
GVS-421	GigaVUE-420 chassis with 4 Gigabit Ethernet copper ports, dual 1+1 redundant hot swap AC power supplies.
GVS-422	GigaVUE-420 chassis with 4 Gigabit Ethernet fiber ports, dual 1+1 redundant hot swap AC power supplies.
GVS-423	GigaVUE-420 chassis with 4 Gigabit Ethernet copper ports, dual 1+1 redundant hot swap DC power supplies.
GVS-424	GigaVUE-420 chassis with 4 Gigabit Ethernet fiber ports, dual 1+1 redundant hot swap DC power supplies.
PRT-400	GigaPORT 4-port expansion module.
SFP-502	SFP, Multimode 850nm. Max cable length: depend on fiber quality. See optical transceiver section.
SFP-503	SFP, Single Mode 1310nm. Max cable length: depend on fiber quality. Up to 10km (SM) or 550 meters (MM).
TAP-201	GigaTAP-Tx copper UTP link tap expansion module.
TAP-202	GigaTAP-Sx multi mode 850nm tap expansion module.
TAP-203	GigaTAP-Lx single mode 1310nm tap expansion module.
TAP-212	10GigaTAP-SR, 10 Gbps Tap for 420, MM, 850 nm, LC, 50/50.
TAP-213	10GigaTAP-LR, 10 Gbps Tap for 420, SM, 1310 nm, LC, 50/50.
TAP-214	10GigaTAP-ER, 10 Gbps Tap for 420, SM, 1550 nm, LC, 50/50.
GLK-311	GigaLINK-CU for GigaVUE-420, 10Gigabit copper port module. Cable length: 15 meters max.
GLK-312	GigaLINK-SR for GigaVUE-420, 10Gigabit 850nm MM module. Cable length: see optical transceiver section.
GLK-313	GigaLINK-LR for GigaVUE-420, 10Gigabit single mode 1310nm module. Cable length: 2km max.
GLK-314	GigaLINK-ER for GigaVUE-420, 10Gigabit single mode 1550nm module. Cable length: 40km max.
CBL-005	Stacking Cable, CX4 copper cable, 5 meters.
CBL-015	Stacking Cable, CX4 copper cable, 15 meters.
SVC-000	2 nd year Standard hardware and software maintenance.
SVC-002	2 nd year Premium 24x7 hardware and software maintenance.
SVC-001	1 st year Premium 24x7 maintenance upgrade.

Front Plug-In Module Specifications



	GigaPORT expansion module	GigaTAP-Tx expansion module	GigaTAP-SX/LX expansion module (MM or SM)
Optional Accessories	SFP (optical transceiver): -SX 850 nm (550meter) -LX 1310 nm (10km) -ZX 1550 nm (40km)		
Ports	4, each can be set as RJ-45 Ethernet (10/100/1000 Base-T), or Gigabit Ethernet SX/LX with multi-mode or single mode SFP module(s)	4 RJ-45 ports organized as two pairs; each pair taps a single 10/10/1000 Base-T FDX Ethernet UTP link.	4 optical splitter ports. Module taps two Gigabit Ethernet MM or SM FDX fibers. Split ratio 70/30.
Link Tap Mechanism	Not recommended for link tapping. No power fail link restore.	Relays open link for tapping. Relays close link for power fail link restore.	Passive optical splitters taps. Power fail does not impact link status.
Power Fail Protection		Maximum two FDX UTP links tapped per module .	Maximum two FDX fiber links tapped per module.
Total Links Tapped Per Module			
Physical Characteristics			
Dimensions	1.50(h) x 3.25(w) x 10.62(d)inches (3.9 x 8.3 x 26.7 cm)	1.50(h) x 3.25(w) x 10.62(d)inches (3.9 x 8.3 x 26.7 cm)	1.50(h) x 3.25(w) x 10.62(d)inches (3.9 x 8.3 x 26.7 cm)
Weight (fully populated with SFP)	1 lb. 2 oz. (0.55kg)	1 lb. 1 oz. (0.5kg)	1 lb. 9 oz. (0.7kg)
Performance	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit
Throughput			

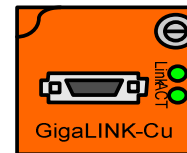
Environment	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit
Safety	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit
Emissions	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit
Immunity	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit
Standards/Protocols	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit

Rear 10G Ethernet Plug-In Module Specifications

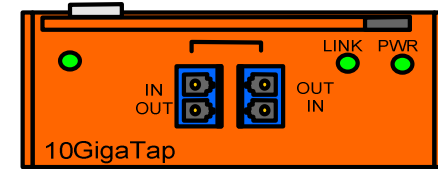
GigaLINK-SR/LR/ER
(10Gigabit optical module)



GigaLINK-CU
(10Gigabit copper module)



10GigaTAP-SR/LR/ER
(10Gigabit optical tap module)



Connectivity/Distance	XFP (10Gigabit Ethernet optical transceiver) SR 850nm (300 meter) LR 1310nm (2km standard, 10km special order) ER 1550 nm (40km standard, 80km special order)	Optional: stacking cable: CX4 copper cable (5 m standard, 1 or 10 or 15 m special order)	A pair of internal passive optical splitters (50/50 split ratio) tap a 10Gigabit full duplex fiber. Three types of 10GE fiber links supported: SR 850nm Multi mode LR 1310nm Single mode ER 1550 nm Single mode
Ports	1 x 10Gigabit Ethernet XFP fiber optic port	1 x 10Gigabit Ethernet copper CX-4 port	Taps a single Full Duplex 10Gigabit Ethernet Fiber Link. Requires two 10G port slots.

Physical Measurement			
Dimensions	5.0(d) x 1.3(w) x 1.5(h) inch (12.7 x 3.3 x 3.8 cm)	4.9(d) x 1.3(w) x 1.5(h) inch (12.4 x 3.3 x 3.8 cm)	7.3(d) x 2.75(w) x 1.5(h) inches (18.2 x 7.0 x 3.8 cm)
Weight	5.5 oz (156gm) with XFP	4.0 oz (113 gm)	14.5 oz (411gm)
Performance			
Throughput	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit
Environment	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit
Safety	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit
Emissions	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit
Immunity	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit
Standards/Protocols	See GigaVUE-420 base unit	See GigaVUE-420 base unit	See GigaVUE-420 base unit

Optical Transceiver Specifications

<p>Gigabit-SX SFP with one 1000Base-SX port; designed for short-distance (<550m) multimode 850nm fiber connectivity</p>	<p>SFP Port One 1000Base-SX port (IEEE 802.3z Type 1000Base-SX, 850nm multi mode) Duplex: full Connectors: LC</p> <p>Physical characteristics Dimensions: 2.24(d) x 0.54 (w) x 0.486 (h) in. (5.69 x 1.37 x 1.23 cm) Weight: 0.04 lb. (0.02kg)</p> <p>Optical power and sensitivity (dBm) Tx: -9.5 to -3 Rx: -17 to 0</p>	<p>Cabling 62.5/125 μm or 50/125 μm (core/cladding) diameter, graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively</p> <p>Maximum distance 220 meters (62.5 μm core, 160 MHz/km) 275 meters (62.5 μm core, 200 MHz/km) 500 meters (50 μm core, 400 MHz/km) 550 meters (50 μm core, 500 MHz/km)</p>
<p>Gigabit-LX SFP With one 1000BASE-LX port; designed for long-distance single-mode 1310nm fiber connectivity, will support multimode fiber connectivity to limited distances</p>	<p>SFP Port One 1000Base-LX port (IEEE 802.3z Type 1000Base-LX, 1310nm single mode) Duplex: full Connectors: LC</p> <p>Physical characteristics Dimensions: 2.24(d) x 0.54 (w) x 0.486 (h) in. (5.69 x 1.37 x 1.23 cm) Weight: 0.04 lb. (0.02kg)</p> <p>Optical power and sensitivity (dBm) Tx: -9.5 to -3 Rx: -19 to -3</p>	<p>Cabling Either single mode or multimode. MM: 62.5/125 μm or 50/125 μm (core/cladding), graded-index, low metal content, multimode fiber optic, complying with ITU-T G.651 and ISO/IEC 793-2 Type A1b or A1a, respectively SM: Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1</p> <p>Maximum distance 10 km (single mode fiber) or 550 meters (multimode fiber)</p>

<p>Gigabit-ZX SFP With one 1000BASE-ZX port; designed for long-distance signal mode 1550nm fiber connectivity</p>	<p>SFP Port One 1000Base-ZX port (no IEEE standard exists for 1550nm optics) Duplex: full Connectors: LC</p> <p>Physical characteristics Dimensions: 2.24(d) x 0.54 (w) x 0.486 (h) in. (5.69 x 1.37 x 1.23 cm) Weight: 0.04 lb. (0.02kg)</p> <p>Optical power and sensitivity (dBm) Tx: 0 to +5 Rx sensitivity: -23 to 0</p>	<p>Cabling Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1</p> <p>Maximum distance 80 km (single mode fiber)</p>
<p>10Gigabit SR XFP Transceiver that supports 10Gigabit SR 850nm fiber standard; supports standard 50 u and 62.5 u mmf up to 300 m</p>	<p>XFP Ports One 10Gigabit Ethernet port (IEEE 802.3ae Type 10Gigabit base-SR 850nm serial optics) Duplex: full Connectors: LC</p> <p>Physical characteristics Dimensions: 3.07 (d) x 0.62(w) x .45 (h) in. (7.8 x 1.6 x 1.15 cm) Weight: 1.5oz.</p> <p>Optical power and sensitivity (dBm) Tx: min -4.3 ^(*1) Rx: min -7.5 ^(*2) ^(*1) OMA ^(*2) Stressed Rx sensitivity in OMA.</p>	<p>Maximum distance 62.5 µm multimode cable @ 160 MHz/km = 2-26 meters 62.5 µm multimode cable @ 200 MHz/km = 2-33 meters 50 µm multimode cable @ 400 MHz/km = 2-66 meters 50 µm multimode cable @ 500 MHz/km = 2-82 meters 50 µm multimode cable @ 2000 MHz/km = 2-300 meters</p> <p>Notes 62.5 µm (core/cladding) diameter or 50 um, 850 nm, low metal content, multimode</p>

<p>10-Gigabit-LR XFP Transceiver that supports 10G LR 1310nm distance of up to 2km (10km special order)</p>	<p>XFP Ports One 10G Ethernet port (IEEE 802.3ae Type 10Gbase-LR 1310nm serial optics) Duplex: full Connectors: LC</p> <p>Physical characteristics Dimensions: 3.07 (d) x 0.62(w) x .45 (h) in. (7.8 x 1.6 x 1.15 cm) Weight: 1.5oz.</p> <p>Optical power and sensitivity (dBm) Tx: -6 to -1 (2km); -5.2^(*1) to +0.5 (10km) Rx sen: -10.3^(*2) to +0.5 (both 2km and 10km) ^(*1) OMA ^(*2) Stressed Rx sensitivity in OMA.</p>	<p>Cabling Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1</p> <p>Maximum distance 9/125 um single-mode cable: maximum 2 km. Special order: 10km extra long reach.</p>
<p>10-Gigabit-ER XFP Transceiver that supports 10Gigabit ER 1550nm distance of up to 40km (80km special order)</p>	<p>XFP Ports One 10Gigabit Ethernet port (IEEE 802.3ae Type 10Gbase-ER 1550nm serial optics) Duplex: full Connectors: LC</p> <p>Physical characteristics Dimensions: 3.07 (d) x 0.62(w) x .45 (h) in. (7.8 x 1.6 x 1.15 cm) Weight: 1.5oz.</p> <p>Optical power and sensitivity (dBm) Tx: -1 to +2 (40km); 0 to +4 (80km) Rx: -14 to -1 (40km); -24 to -7 (80km)</p>	<p>Cabling Low metal content, single-mode fiber-optic, complying with ITU-T G.652 and ISO/IEC 793-2 Type B1</p> <p>Maximum distance 9/125 um single-mode cable: maximum 40 km. Special order: 80km extra long reach.</p>