

## LIST OF NETWORKING

S.no	Item	Item Discerption
1.	SOPHOS firewall upgradation with licensing	SOPHOS firewall upgradation with licensing Upgradation from XG-210 to XGS-3300 with network and web protection
2.	Clamping Tool	Handle Material Polyvinyl Chloride (PVC) Grip Type Contoured J45 pass through crimp tool and 2 replaceable blades, with 18-month warranty RJ45 Crimp Tool, RJ45 Pass Through Crimping Tool for Cat7 Cat6 Cat5 Ethernet Pass Through Connectors, Cutting, Stripping, Crimping All-in-one RJ45 Crimper with 2 Replacement Blades Dimensions : 10.51 x 4.09 x 0.98 inches Material : Stainless Steel Package
3.	Labor Rate for installation of CAT6/Fiber Cable per feet in Duct & Pipe	Labor Rate for installation of CAT6/Fiber Cable per feet in Duct & Pipe
4.	Labor Rate for installation of Electric Cable Per feet	Labor Rate for installation of Electric Cable Per feet
5.	Tagging machine with cassettes	Keyboard layout QWERTY Display - LCD 96 x 16 dots Display - Display (input data) 12 digits x 1 lines Printing resolution 200 dpi/96 dots Unit of length switching cm/inches Printing speed (mm/sec.)6,0 Maximum printing height (mm) 12 Maximum printing lines 3 Fonts Sans-serif Yes, Character styles Normal/Bold/Outline Character effects Shading/Underline/Box Built-in character types 534 Alphanumeric characters 62 Special characters/symbols 182 Illustrations 111 Accented characters 179 Frame printing No Print preview Yes Tape length setting Yes Message switching 8 languages(English/Spanish/German/French/Italian/Swedidh/Portuguese/Indon esian)

69 items

Forwarded  
to

HOD (MM)

 21/11/24

		<p>Print job memories  10 data sets  Dimensions: H x W x D (mm)  * The height dimension includes the feet  54.5 x 189 x 115  Approximate weight (g)  * Not including batteries  430 Bundled tape cartridge  12mm x 1</p>
6.	Patch panel 24 port	<p>24-port Cat6 patch panel for high density and easy patching solutions in data centers. The Cat6 Ethernet patch panel is designed for use in 19" racks and ideal for 10/100/1000Base-T and 10GBase-T Ethernet applications  Category Cat6/Cat5e  No. of Ports 24  Shielding Type  C6P-U24FT1U: Unshielded  C6P-S24FT1U: Shielded  No. of Rack Spaces 1U  Material SPCC + ABS Plastics  Color Black  Type of Patch Panel Flat  Connector Type  Dimensions (HxWxD)  RJ45 Ethernet/HDMI/USB  1.75"x19"x3.62" (44.5x482.5x92mm)  Operating Temperature Range -25°C to 70°C (-13 to 158°F)</p>
7.	Patch panel 48 port	<p>48-Port Patch Panel for High-Speed Cat6 Network Cabling  Condenses 48 Ports into Just 2U of Space in Your 19 in. Enclosure or Open Frame Rac  Shipping Dimensions (L x W x H) 20 x 4.25 x 3 in  Product Type  110 Panels  Performance  CAT6  Connector  8P8C  Ports  48-Port Rack Mount Rear IDC  Mounting  Rack  Rack Space  2  Packaging  Single  Port Labeling  Port Spacing: 0.6, Tape Width: 3/8" (9mm)</p>

SP

		Country of Origin (subject to change) Taiwan, TAA compliant
8.	Cable Manager	1U/2U Horizontal Cable Manager Finger Duct with Cover, Rackmount, Single-Sided, 19 inch Rack Unit 1U Style Finger Duct with Cover Orientation Horizontal Configuration Single-Sided Material ABS Dimensions (HxWxD) 1.73"x19.00"x2.70" (44.0x482.6x68.6mm) Weight 0.88lbs (0.45kg) Installation Standard EIA 19" Rack Rails Included Accessories M6*15mm Screw x4 and M6 Nut x4 Cable Capacity (Theoretical Value) 48pcs Cat6 24AWG Color Black Coat Black Powder
9.	Cat 6A Cable	Conductor Solid Bare Electrolytic Grade Copper Nominal Conductor Diameter 24 AWG Insulation Polyolefin Pairing Twisted into 2 core No. Of Pair 04, Each pair twisted Color Code: Pair #1 Pair #2 Pair #3 Pair #4 Blue-White with Blue Orange-White with Orange Green-White with Green Brown White with Brown Barrier Tape Yes Outer Sheath FR-PVC Colour of Sheath Grey Approximate OD 6.90 mm ± 0.30mm Sequential Marking At Every Meter Temperature Rating -150C to +750C
10	Digital Meter Cat 6 Cable Tester	Digital meter cable testing Length measurement Length broken detected ET618 3 ID Mapping Ethernet Network Cable Tester with Length Calibration Function & Multifunctional Multimeter 2in1 Continuity Tester All in One includes Ethernet cable tester, electrical wire tracer and multimeter in one single device. Press the button MODE for circuit tracer, DMM for multimeter and switch over functions easily. The tester is competent for communication wiring, engineering maintenance, radio tracking, manufacturing, laboratories etc. Equipped with a professional analog tone generator, which rings louder when it gets closer to the target cables. The sensibility of sensor is adjustable through the wheel on the wire tracker receiver to narrow down the tracing range. Silent vibration mode is also available to avoid disturbing. Length calibration is accessible to measure network cable, telephone cable and video coax cable as long as 500 meters. There's the option of manual calibration to ensure the accurate results. Ethernet wiring diagram for RJ45

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		<p>connector is visualized on the display or via the 8 indicators on the wire tracker receiver.</p> <p>The multifunctional multimeter can measure or test temperature, continuity, voltage, current, resistance, diode, NCV etc. All necessary accessories for the measurement are included in the package.</p> <p>The LCD screen of high brightness and clearance allows working in darkness or under sunlight and ensures that the letters are readable in different work scenes. Each main device and receiver has its own flashlight, which makes the tracing process more convenient.</p>
11	Cable Tie 4"	1 pack rate
12	Cable Tie 6"	1 pack rate
13	Cable Tie 8"	1 pack rate
14	Cable Tie 10"	1 pack rate
15	Plast Pipe 1"	Plast Pipe 1" L10'
16	Plast Pipe 2"	Plast Pipe 2" L10'
17	Metal U Clip 1"	Metal U Clip for Pipe
18	Metal U Clip 2"	Metal U Clip for Pipe
19	pigtail sc to sc	Connector type: SC Length: 1 m
20	pigtail lc to sc	Connector type: LC to SC Length: 1 m
21	PDU	<p>Colour Black</p> <p>PDU type Basic</p> <p>Cord length 2.50 m</p> <p>Provided equipment Installation guide</p> <p>Rack mounting brackets</p> <p>User manual</p> <p>Cable</p> <p>Input Voltage 200 V 208 V 230 V</p> <p>Height 4.44 cm</p> <p>Width 48.2 cm</p> <p>Output Voltage 208 V 230 V</p> <p>Depth 4.44 cm</p> <p>net weight 0.58 kg</p> <p>Mounting location Front Rear</p> <p>Rack units 1U</p> <p>Mounting position Horizontal</p> <p>Input current limits 16 A</p> <p>Load capacity 3680 VA</p> <p>Network frequency 50/60 Hz</p> <p>Outlet type and quantity 8 IEC 60320 C13</p> <p>Warranty 1 year repair or replace</p>
22	KJ nut	For Switch Hang

23	PVC Cable Duct 1"	1 inch
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23	PVC Cable Duct 1"	1 inch
24	PVC Cable Duct 2"	2 inches
25	PVC Duct Cutter	Best Quality
26	i/o punching tool	<p>The punch down tool inserts and cuts terminations in one simple operation for cat6a cat6 cat5e cat5 network cables. Install wires into a telephone socket, cat5e faceplate or patch panel</p> <p>BLADE STORAGE: tool is designed with a twist and lock holder for spare blade storage that helps prevent blade loss</p> <p>PRECISE INTERCHANGEABLE &amp; REVERSIBLE BLADES: The precision blades for the punch down tool are conveniently interchangeable and reversible between 110 and Krone standards</p>
27	RJ45 CAT6E Lan I/O	<p>Type: 2x Keystone Jack + 1x Gang Box + 1x Dual Socket Face Plate</p> <p>Suitable for : CAT6 / CAT6E</p> <p>Color - Off White / White / Ivory</p> <p>Quantity - 1 Set</p>
28	I/O Face Plate	I/O 3X3 1M Dual Face Plate
29	I/O back box	I/O back box
30	SFP transceiver Modules	<p>Industry's smallest 10G form factor for greatest density per chassis</p> <p>Hot-swappable input/output device that plugs into an Ethernet SFP+ port of a Cisco switch (no need to power down if installing or replacing)</p> <p>Supports "pay-as-you-populate" model for investment protection and ease of technology migration</p> <p>Digital optical monitoring capability for strong diagnostic capabilities</p> <p>Optical interoperability with 10GBASE XENPAK, 10GBASE X2, and 10GBASE XFP interfaces on the same link</p> <p>10GBASE-T module (Figure 2) offers connectivity options at the following data rates: 100M/1G/10Gbps. It has the SFP+ form factor and an RJ-45 interface so that CAT5e/CAT6A/CAT7 cables can be used to connect to end points with embedded 10GBASE-T ports. They are suitable for distances up to 30 meters and offers a cost-effective way to connect within racks and across adjacent racks.</p>
31	Wi-Fi 6 Router (Short Range)	<p>Network Speed</p> <p>6 GHz:</p> <p>5 GHz: 4804 Mbps (802.11ax, HE160), 2.4 GHz: 1148 Mbps (802.11ax)</p> <p>Network Standard</p> <p>IEEE 802.11ax/ac/n/a 5 GHz, IEEE 802.11n/b/g 2.4 GHz</p> <p>Antenna</p> <p>8x Fixed High-Performance Antennas</p> <p>Buttons</p> <p>Wi-Fi On/Off Button, Power On/Off Button, LED On/Off Button, WPS Button, Reset Button</p> <p>Protocols</p> <p>IPv4, IPv6</p> <p>Warranty</p> <p>1 Year Warranty</p>

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32	Omni Directional Antenna 12 or 15dBi 2.4GHz	External Outdoor Wi-Fi Antenna Long Range Omni-Directional 2.4G/5.8G 12dBi Antenna External Outdoor Wi-Fi Antenna Impedance 50 Ohm Maximum Range 10000 Meters Item Dimensions LxWxH 1.18 x 1.18 x 30.71 inches
33	IT-Tech Network Toolkit	Electrical adhesive tape CRV red black Rubber plastic screwdriver 5*100(-) Crystal box 22pc (8p:10pcs 6p:6pcs 4p:6pcs CRV red black Rubber plastic hand Shank screwdriver 5*100(+) Precision screw drivers 2.4(-) 2.4(+) Digital electrical pen test 12-250v Long flat nose pliers wire stripper Network pliers Wire cutter Network tester
34	Duct 60 x 60 (Each 10ft Length)	Duct 60 x 60 (Each 10ft Length)
35	Duct 40 x 40 (Each 10ft Length)	Duct 40 x 40 (Each 10ft Length)
36	Duct 16 x38 (Each 10ft Length)	Duct 16 x38 (Each 10ft Length)
37	PVC Pipe 1 1/2 Inch for Ethernet Cabling	PVC Pipe 1 1/2 Inch for Ethernet Cabling
38	PVC Pipe 1 Inch for Power & Fiber (Each 10ft Length)	PVC Pipe 1 Inch for Power & Fiber (Each 10ft Length)
39	40/76 Power Cable (ft)	40/76 Copper Extension Cable Wire For AC 220V & DC 12V Solar, Fire Retardant High Fidelity Flexible PVC Shielding
40	Digging and Filling for Optical Fiber (ft)	Digging and Filling for Optical Fiber (ft)
41	OFDF 24 Ports	OFDF 24 Ports
42	27U Rack	27 U Rack, Floor Standing Perforated Dual Compartment Door 2 Fixed Tray and 1 sliding tray 4 Fans ,Fan kit and PDU
43	42U Rack	42 U Rack, Floor Standing Perforated Dual Compartment Door 2 Fixed Tray and 1 sliding tray 4 Fans, Fan kit and PDU
44	9U rack	Heavy-duty cold roll steel construction · Glass door with vented holes for visible assurance while provides ventilation· Lockable front door and side panels helps prevent damage, tampering or theft.· Removable side panels for quick access to equipment and cabling· Removable cable entry panels at top, bottom and back · Top cooling vents ensure proper airflow patterns · Ships fully assembled and ready to mount to the wall

45	UTP I/O Installation Termination per I/O	Installation, Configuration & commissioning charges per I/O: * Installation and Termination of UTP I/O
46	Installation / Termination of per Patch Panel	Installation and Termination of per Patch Panel
47	Installation /Termination of OFDF per OFDF	Commission: Installation and Termination of per OFDF
48	Installation /fixation of Data Cabinet	Commission: Installation and fixation of per Data Cabinet
49	Installation /Configuration of per Switch job,	Installation and Configuration of per Switch job,
50	Installation and Configuration of, Access Point Controller	Installation and Configuration of, Access Point Controller
51	Installation and Configuration of Firewalls	Installation and Configuration of Firewalls
52	JOINTER for Rj-45	Good quality
53	Splicing Machine	<p>Splicing Machine</p> <p>Applicable Fibers: SM (ITU-T G.652&amp;G.657) / MM (ITU-T G.651) / DS (ITU-T G.653) / NZDS (ITU-T G.655)</p> <p>Compatible Fiber / Cable :0.25~3.0 mm / Indoor Cable</p> <p>Cleaved Length Diameter: 0.125~1 mm / Cleave Length: 8~16 mm</p> <p>Splicing Mode: Preset 7 modes / Max 128 modes</p> <p>Typical Splice Loss SM: 0.02dB / MM:0.01dB / DS:0.04dB / NZDS: 0.04dB / G.657: 0.02dB (ITU-T Standard)</p> <p>Return Loss :&gt;&gt;60dB</p> <p>Splicing Time Auto mode: 9 sec / Quick mode: 7 sec</p> <p>Estimated Splice Loss: Available</p> <p>Protection Sleeve Length: 20~60 mm</p> <p>Heating Time Typical heating time: 35 sec</p> <p>Results Storage: The last 2000 results</p> <p>Tension Test :1.96~2.25N</p> <p>Operating Condition Operating Altitude: 0~5000m above sea level, 0~95% relative humidity, -10~50°C, Max Wind 15m/s</p> <p>Storage Condition: 0~95% relative humidity, -40~80°C</p> <p>Display: 90° bi-directional view, 5.0" Color High Resolution Display</p> <p>Fiber View &amp; Magnification: X, Y, XY, X/Y: 520X Magnification</p> <p>Power Supply: AC Input 100-240V, DC Input 9-14V</p> <p>No. of Splice / Heating with Battery :4200mAh Battery Capacity, Typical 170 times (Splice + Heat)</p> <p>Operating Methods: Button / Touch screen</p> <p>Automatic Calibration: Automatic arc calibration by air pressure and temperature</p>

		<p>Electrode Life: 3500 arcs, can be extended by using an electrode grinder</p> <p>Terminal USB: 2.0 / MINI USB / HDMI</p> <ol style="list-style-type: none"> <li>1. 1. Core alignment splicing (DACAS Digital Analysis Core Alignment System)</li> <li>2. 2. The highest 520X magnification and resolution</li> <li>3. 3. 5" Color LCD touch screen</li> <li>4. 4. Double tapping (zoom in &amp; out)</li> <li>5. 5. Detachable SOC holder and heating oven for splice-on connectors</li> <li>6. 6. 3 Bright LEDs for dark environments</li> <li>7. 7. Ceramic clamp for improved durability</li> <li>8. 8. Easy to replace electrodes</li> <li>9. 9. Mirrorless design for easy maintenance</li> </ol>
54	Wi-Fi long Range CPE	<p>Long range CPE outdoor</p> <p>Passive PoE supports to allow flexible deployment and convenient installation</p> <p>Interface: 1 10/100/1000/10000 Mbps Shielded Ethernet Port (LAN/POE), 1 Reset Button</p> <p>Power Supply: Passive Power over Ethernet via LAN (+4,5pins; -7,8pins), Voltage range: 16-27V DC</p> <p>Enclosure: Material: Outdoor PC stabilized plastic, Weatherproof: IP65 water and dust proof design</p> <p>Wireless Standards: IEEE 802.11a/n/ac</p> <p>Frequency: 5.15~5.85 GHz</p> <p>System-level Optimizations: Optimized IGMP Snooping / Proxy for multicast applications</p> <p>Input: 100-240VAC, 50/60Hz</p> <p>Output: 24VDC, 0.5A Max, +4, 5pins; -7, 8pins. (Support up to 60m Power over Ethernet)</p> <p>Efficiency: &gt; 84.29%</p> <p>15dBi high-gain omni directional 2x2 MIMO, ideal for long-distance application</p> <p>Excellent beam directivity, improved latency and noise cancellation</p> <p>Innovative snap-lock parts make for fast assembly and a sturdy structural design keeps CPE710 stable even in strong winds</p> <p>Durable IP65 weatherproof enclosure along with 15kV ESD and 6kV lightning protection ensures all-weather suitability</p> <p>Pharos Control gives administrators a free, centralized management system</p> <p>Passive PoE supports to allow flexible deployment and convenient installation</p>
55	Wi-Fi Router (Long Range)	<p>Long range 360-degree Wi-Fi router</p> <p>Dual-Band Wi-Fi speed boosted by 1024QAM deliver astonishing wireless speed up to 5952 Mbps: 4804 Mbps (5 GHz) and 1148 Mbps (2.4 GH)</p> <p>1 × 2.5Gbps WAN port, 8 × Gigabit LAN ports, and 2 × USB 3.0 in Type A and</p>

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		<p>Type C</p> <p>1.8 GHz Quad-Core CPU and 2 co-processors eradicate latency and deliver stable performance</p> <p>Band Steering directs clients to less congested band and Airtime Fairness optimizes the time usage</p> <p>8 high-gain external antennas deliver a strong Wi-Fi signal throughout your home. BSS Color technology ensures smooth and stable connections by eliminates signal interference probably from your neighbors, while beam forming and Range boost deliver stronger and far-reaching network.</p>
56	Industrial 5G Cellular Router with Dual SIM Card Slot, 5G VPN Modem Router with External Detachable Antennas, Gigabit Ethernet, WiFi, RS232/RS485 M2M IoT Integration, Remote Management, Global Version	<p>Industrial 5G Cellular Router with Dual SIM Card Slot, 5G VPN Modem Router with External Detachable Antennas, Gigabit Ethernet, WiFi, RS232/RS485 M2M IoT Integration, Remote Management, Global Version</p> <p>connectivity Technology Ethernet/5G/4G/WiFi</p> <p>Control Method Remote</p> <p>Data Transfer Rate 3.4 Gigabits Per Second</p> <p>Antenna Type Fixed</p> <p>Maximum Upstream Data Transfer Rate 3.4E+3 Megabits Per Second</p> <p>Voltage 12 Volts</p> <p>Frequency 5.8 GHz</p> <p>Wireless Compatibility 802.11b, 802.11ac, 802.11g</p> <p>Is Modem Compatible Yes</p> <p>Controller Type App Control</p> <p>Antenna Location Industrial Applications, Machine-to-Machine Communication</p> <p>Compatible Devices Personal Computer</p> <p>Number of Antennas 6</p> <p>LAN Port Bandwidth Gigabit</p> <p>Is Electric Yes</p> <p>Operating System RouterOS</p> <p>Frequency Band Class Dual-Band</p> <p>Number of Ports 2</p> <p>Additional Features Industrial-grade Quad-core CPU, Remote Management</p>
57	KVM Switch Over IP	<p>1-Local/1-Remote Access 16-Port Multi-Interface Cat 5 Dual Rail LCD KVM over IP Switch</p> <p>Panel Array Mode™ – monitors all ports in a grid display (both local and remote screens)</p> <p>Supports web-friendly KVM-over-IP access with HTML5 Web Client viewer</p> <p>Laptop USB Console (LUC) – a dedicated USB port directly connects to a laptop for easy console operation</p> <p>High-grade security – supports TLS 1.3 and an embedded FIPS 140-2 certified OpenSSL cryptographic module (Certificate #4282)</p> <p>Exclusive LED illumination light designed by ATEN to illuminate the keyboard and touchpad to allow visibility in lowlight conditions</p> <p>Integrated KVM console with 19" LED-backlit LCD monitor in a dual rail housing</p> <p>One bus for local and one bus for remote KVM over IP access</p> <p>Space-saving RJ-45 ports for Cat 5e/6 cable connections</p>

KVM adapter cables with automatic conversion allow flexible interface combinations (PS/2, USB, Sun and serial) to control all computer types  
Extra Console Ports – manage computers from the built-in LCD screen or an external console setup (monitor, USB keyboard and mouse)  
Supports PS/2, USB, Sun Legacy (13W3) and serial (RS-232) connectivity  
Supports external USB mouse  
Dual rail housing is slightly less than 1U with top and bottom clearance for smooth operation in 1U of rack space  
Dual Rail Housing – allows the LCD monitor to slide independently of the keyboard and touchpad  
LCD module rotates up to 120 degrees for a more comfortable viewing angle  
Console lock enables the console drawer to remain securely locked away when not in use  
LCD power button saves energy and prolongs the life of the display  
High Port Density – RJ-45 connectors provide up to 16 ports in 1U housing  
Two 10/100/1000 Mbps NICs for redundant LAN or dual IP operation  
Blade server support  
Supports multiplatform server environments: Windows, Mac, Sun, Linux and VT100 based serial devices  
High Video Resolutions – up to 1920 x 1200 @ 60 Hz with 24-bit color depth at the switch's external local console and on remote displays; up to 1280 x 1024 @ 75 Hz at the switch's built-in LCD screen  
Monitor and control up to 16 computers on a single level or control up to 256 computers in a cascade\*  
Optional rack mount kits available including easy installation options  
Note: Cascade-compatible KVM switches include the following: CS1308, CS1316, KH1508A and KH1516A.  
Up to 64 user accounts  
Up to 32 concurrent logins  
End Session Feature – administrators can terminate any remote session  
Port Share Mode allows multiple users to gain access to a server simultaneously  
Remote power control for attached ATEN PDU devices  
Integration with ATEN CC2000 Management Software  
Integration with ATEN CCVSR Video Session Recording Software\*  
Supports ATEN KVM over IP Console Station (KA8270 / KA8280 / KA8278 / KA8288)  
Event logging and Windows-based Log Server support  
Local Log Event  
Firmware upgradeable  
IPv6 capable  
Critical system event notification via SMTP email; SNMP trap and Syslog support  
Customizable events notification  
Out-of-Band Access – modem dial-in / dial-out / dial-back support  
Adapter ID Function – stores port information, allowing administrators to relocate servers to different ports without having to re-configure adapters or switches

Note: Supports recording computer operations accessed via remote sessions.

Console Connections

Local 1

Remote 1

Computer Connections

Direct 16

Maximum 256 (via Cascade)

Port Selection OSD, Hotkeys, Pushbuttons

Connectors

Console Ports 2 x USB Type-A Female (White)

1 x DVI-D Female (White)

1 x HDB-15 Female (Blue)

External Mouse Port 1 x USB Type-A Female

KVM Ports 16 x RJ-45 Female

Serial 2 x RJ-45 Female

PON 1 x RJ-45 Female

Modem 1 x RJ-45 Female

LAN Ports 2 x RJ-45 Female

Power 1 x IEC 60320/C14

Switches

Port Selection 16 x Pushbutton

Reset 1 x Semi-recessed Pushbutton

Power 1 x Rocker

LCD Power 1 x Pushbutton

LCD Adjustment 4 x Pushbutton

LEDs

Online 16 (Green)

Selected 16 (Orange) 10/100/1000 Mbps 2 (Orange / Orange & Green / Green)

Power 1 (Blue)

LCD Power 1 (Orange)

Lock 1 x Num Lock (Green)

1 x Caps Lock (Green)

1 x Scroll Lock (Green)

Video

Remote 1920 x 1200 @ 60Hz

Panel Spec

LCD Module 19"

Resolution 1280 x 1024 @ 75Hz

Pixel Pitch 0.294 mm x 0.294 mm

Response time 5 ms

Viewing Angle 170° (H), 160° (V)

Contrast Ratio 1000:1

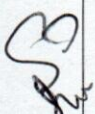
Support Color 16.7M colors

Luminance 250 cd/m<sup>2</sup>

Emulation

Keyboard / Mouse PS/2; USB

Scan Interval 1-255 Sec.

		<p>Maximum Input Power Rating 100-240V AC; 50-60Hz; 1A  Power Consumption AC110V:32.1W:157BTU/h  AC220V:32.4W:158BTU/h</p> <p>Note:  The measurement in Watts indicates the typical power consumption of the device with no external loading.  The measurement in BTU/h indicates the power consumption of the device when it is fully loaded.</p> <p>Environmental  Operating Temperature 0 - 40°C  Storage Temperature -20 - 60°C  Humidity 0-80% RH, Non-condensing</p> <p>Physical Properties  Housing Metal  Weight 15.28 kg ( 33.66 lb )  Dimensions (L x W x H) 48.00 x 70.12 x 4.40 cm  (18.9 x 27.61 x 1.73 in.)</p>
58	Slotted Cable Duct	Slotted Cable Duct 33mm x 33mm
59	 <p>26-Port 10G Stackable  L3 Managed  Aggregation Switch  with 6 25G Slots</p>	<p>26x 10G SFP+ slots and 6x 25G SFP28 slots  820 Gbps switching capacity  Physical Stacking for built-in redundancy and performance  L3 features: RIP, OSPF, ECMP, VRRP, PIM-DM, DHCP Server/Relay  Security Strategies: ACL, Port Security, DoS Defend, 802.1X  Highly Available with two field-replaceable power supplies*, VRRP, and ERPS  Centralized cloud management via the SDN controller  Standalone management via web, CLI, SNMP, and RMON  Switching Capacity 820 Gbps  Stacking • Stacking Number: 8  Stacking Port: 25G SFP28  Stack Bandwidth: Up to 300 Gbps (6 stack ports)  Packet Forwarding Rate 610.1 Mpps  MAC Address Table 128 K  Packet Buffer Memory 8 MB  Jumbo Frame 9 KB  Quality of Service Class of Service  - 8 Queues of Priority  - Port Priority  - IEEE 802.1p Priority  - DSCP Priority  - Queue Min-Bandwidth  - Schedule Mode (SP, WRR, SP+WRR)  Bandwidth Control  - Rate Limit  - Strom Control  Voice VLAN User-Defined OUI  L3 Features • Routing IP Interfaces  - Static Routing  - Host Route Table - RIP v1/v2 - RIPng</p>

- OSPFv2/v3 – VRRP - ECMP - ARP Proxy DHCP- DHCP Server
- DHCP Relay- DHCPv6 Relay
- DHCP Snooping- DHCPv6 Snooping
- Multicast
- Multicast Table - IGMP v1/v2/v3
- Static Multicast Routing
- L2 and L2+ Features • Switching
- Port Mirroring (SPAN)
- RSPAN - Loopback Detection
- Traffic Monitor Trunking - Static LAG
- LACP 802.3ad • Mac Address
- MAC Address Table
- Static MAC - Dynamic MAC Address
- Filtering MAC Address
- MAC Flapping • STP - STP 802.1d
- RSTP 802.1w - MSTP 802.1s
- Loop/Root/TC Protect
- BPDU Protect/Filtering
- ERPS • Multicast
- IGMP Snooping - MLD Snooping
- L2 Multicast Table - Fast Leave
- Multicast VLAN Registration (MVR)
- Static Multicast IP - Multicast Filtering Advanced Features Automatic
- Device Discovery†
- Batch Configuration†
- Batch Firmware Upgrading†
- Intelligent Network Monitoring† Abnormal Event Warnings†
- Unified Configuration†
- Reboot Schedule†
- ISP Features:
- 802.3ah Ethernet Link OAM
- L2PT (Layer 2 Protocol Tunneling)
- Device Link Detect Protocol (DLDP)
- DDM sFlow
- VLAN • IEEE 802.1q Tag VLAN
- MAC VLAN • Protocol VLAN
- VLAN VPN(QinQ) • Private VLAN
- GARP/GVRP • Voice VLAN
- Multicast VLAN Management VLAN
- Security • Access Security
- Port/MAC/IP-based Access Control
- SSL – SSH • Port Security
- Port Isolation • CPU-Deffend

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		<ul style="list-style-type: none"> <li>• Time Range <ul style="list-style-type: none"> <li>- Time Range Defination</li> <li>- Periodic Time Range</li> <li>- Absolute Time Range</li> <li>- Time Holiday</li> </ul> </li> <li>• ACL - Entries <ul style="list-style-type: none"> <li>- L2/L3/L4 ACL</li> <li>- ACL Action</li> <li>- ACL over VLAN</li> <li>- ACL over Port</li> </ul> </li> <li>• IP-MAC Binding <ul style="list-style-type: none"> <li>- IP+MAC+PORT+VID Binding</li> <li>- Manual Binding</li> <li>- ARP Scanning</li> <li>- DHCP Filter</li> <li>- DHCPv6 Filter</li> <li>- DHCP Option 82</li> </ul> </li> <li>• ARP Inspection (Dynamic ARP Inspection)</li> <li>• IP Source Guard</li> <li>• IPv6 Source Guard</li> <li>• ND Neighbor Discovery/ ND Snooping/ ND Filtering</li> <li>• DoS Defend</li> <li>• Authentication, Authorization &amp; Accounting (AAA) <ul style="list-style-type: none"> <li>- 802.1X Port Authentication</li> <li>- RADIUS Authentication</li> <li>- RADIUS Accounting</li> <li>- TACACS+ Authentication</li> </ul> </li> </ul>
60	48 port switch with 4 sfp's	<p>48x Gigabit RJ45 ports and 6x 10 Gbps SFP+ slots  216 Gbps switching capacity per unit  Physical Stacking for built-in redundancy and performance  L3 features: RIP, OSPF, ECMP, VRRP, PIM-DM, DHCP Server/Relay  Security Strategies: ACL, Port Security, DoS Defend, 802.1X  Highly Available with two internal fixed power supplies, VRRP, and ERPS  Centralized cloud management via SDN controller  Standalone management via web, CLI, SNMP, and RMON  Switching Capacity     216 Gbps per Unit  Stacking                 • Stacking Number: 4  • Stacking Port: 10G SFP+ Slot (all uplink ports can be used as stacking ports)  • Stack Bandwidth: 20 Gbps Per Port (Full-Duplex)  Packet Forwarding Rate 160.7 Mpps  MAC Address Table     32 K  Packet Buffer Memory   3 MB  Jumbo Frame            9 KB  L3 Features             • IP Interfaces:</p>

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		<ul style="list-style-type: none"> <li>- IPv4: Max 256, IPv6: Max 256</li> <li>• Static Routing</li> <li>- Max 1,024, IPv6: Max 512</li> <li>• Host Route Table: Max 6,100 entries</li> <li>• RIP: Version v1/v2, Max 8,190</li> <li>• OSPF: Version v2/v3; v2: Max 8,190, v3: Max 4,097</li> <li>• VRRP: Version v2/v3, Max 64 groups</li> <li>• ECMP: 256 entries, max 32 ECMP Nexthops per Destination</li> <li>• Static ARP: 512 static entries</li> <li>• Dynamic ARP: 7,680 dynamic entries</li> <li>• Proxy ARP</li> <li>• DHCP Server: <ul style="list-style-type: none"> <li>- Max 8K IP Pools</li> <li>- Max 1,000 Manual Binding Entries</li> </ul> </li> <li>• DHCP Relay: <ul style="list-style-type: none"> <li>- Relayed Interface</li> <li>- Relayed VLAN</li> </ul> </li> </ul>
61	24 port switch with 4 sfp's	<p>10G Lightning-Fast Uplink: 4x 10 Gbps SFP+ slots enable high-bandwidth connectivity and non-blocking switching capacity.</p> <p>384 W PoE Budget: 24x 802.3at/af-compliant PoE+ ports with a total power supply of 384 W*.</p> <p>Integrated into SDN: Zero-Touch Provisioning (ZTP)**, Centralized Cloud Management, and Intelligent Monitoring.</p> <p>Centralized Management: Cloud access and for ultra convenience and easy management.</p> <p>Static Routing: Helps route internal traffic for more efficient use of network resources.</p> <p>Robust Security Strategies: IP-MAC-Port Binding, ACL, Port Security, DoS Defend, Storm control, DHCP Snooping, 802.1X, Radius Authentication, and more.</p> <p>Optimize Voice and Video Applications: L2/L3/L4 QoS and IGMP snooping.</p> <p>Standalone Management: Web, CLI (Console Port, Telnet, SSH), SNMP, RMON, and Dual Image bring powerful management capabilities.</p> <p>L3 Features      • 16 IPv4/IPv6 Interfaces</p> <ul style="list-style-type: none"> <li>• Static Routing</li> <li>- 48 static routes</li> <li>• Static ARP</li> <li>- 128 Static Entries</li> <li>• Proxy ARP</li> <li>• Gratuitous ARP</li> <li>• DHCP Server</li> <li>• DHCP Relay</li> <li>- DHCP Interface Relay</li> <li>- DHCP VLAN Relay</li> <li>• DHCP L2 Relay</li> </ul> <p>Advanced Features      • Automatic Device Discovery</p> <ul style="list-style-type: none"> <li>• Batch Configuration</li> </ul>

		<ul style="list-style-type: none"> <li>• Batch Firmware Upgrading</li> <li>• Intelligent Network Monitoring</li> <li>• Abnormal Event Warnings</li> <li>• Unified Configuration</li> <li>• Reboot Schedule</li> </ul>
62	SFP module SMD	SFP module SMD single-mode (maximum distance 10 km / 6.2 mi.) LC fiber connector
63	SFP module MMD	SFP module MMD single-mode (maximum distance 10 km / 6.2 mi.) LC fiber connector
64	2 Core Power cable for centralized power distribution	2 Core Power cable for centralized power distribution ISO certified brand, Two Core 2.5 mm pure copper, flexible, (Rate Per Feet)
65	ODF box for outdoor use	Water / weather proof, edge DB for Poe switch, ODF for outdoor use Weather and rust proof power coated Built-in fiber splice box Built-in temperature control sheet inside 20 Ft extra OFC 12/24 core rolling option. operating temp -10 to +55 C, including fans for heat extraction, air filter with exhaust pocket removable tray with dual shelves and universal fittings built-in fiber in out holding clumps inside DB built-in earthling strip and electric connectors digital volt meter, 6 to 10A, 2 Pole, Schneider circuit breaker, power distribution board (minimum 4 port PDU) dual locks with keys, Dual mounting options ground and wall. Built in rain shed Permeant tagging plates
66	RJ-45 Connectors	Baynet Rj-45 connectors best quality
67	ODF for indoor	<ol style="list-style-type: none"> <li>1. 19" Standard rack mount</li> <li>2. Material: SPCC cold rolled steel</li> <li>3. Designed by full mobilization: <ol style="list-style-type: none"> <li>A. Unit body have the fusion of optical fiber fusion, tray storing and distribution</li> <li>B. the integrated fusion and distribution tray can be singly taken out to meet the demands for operation.</li> </ol> </li> <li>4. Optical cable, pigtail fiber and patch cords can be clearly managed,</li> <li>5. Easy for installation of inlay, convenient to expand capacity, obliquity of adapter is 30 degree.</li> <li>6. Ensure the bend radius of patch cord and avoid laser burning eyes.</li> <li>7. FC, SC port is available for the integrated fusion and distribution tray</li> <li>8. Two sides accommodate cable entry and exit</li> </ol>
68	Wireless access controller	1. Centralized Management

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Unified Dashboard: The Given wireless controllers provide a centralized management interface for all devices in your network (access points, switches, routers, etc.). This allows administrators to monitor and configure the entire network from a single interface, whether on-site or remotely.

Multi-site Management: You can manage multiple sites or locations from a single controller, making it ideal for organizations with multiple campuses or distributed networks.

## 2. Scalability

Support for Large Networks: The Given controllers can scale to manage hundreds or even thousands of devices, from small businesses to large enterprises. Controllers like the UniFi Dream Machine or UniFi Dream Machine Pro can manage large numbers of access points, users, and devices.

Easy Expansion: As your network grows, additional UniFi access points and other devices can be added easily, and they will automatically be detected and integrated into the system for seamless operation.

## 3. Advanced Network Insights

Real-time Monitoring: The UniFi controller provides detailed real-time insights into network performance, such as traffic usage, connected clients, signal strength, and more. This helps administrators troubleshoot and optimize performance.

Analytics: The controller offers detailed analytics and historical data on network performance, device usage, and client activity, allowing for informed decision-making.

Event Logging: Event logs and notifications are available for tracking network activity, security alerts, and system status.

## 4. Wi-Fi Management

Automatic RF Management: The controller automatically manages radio frequencies to optimize coverage and reduce interference between access points (APs). This includes adjusting the transmit power and channel selection.

Band Steering: Helps to guide clients to the optimal band (2.4 GHz or 5 GHz) for better performance and load balancing.

Zero-Handoff Roaming: Ensures seamless roaming between access points, allowing mobile devices to move between areas without dropping their connection.

## 5. Security Features

WPA3 Support: The latest security protocol for Wi-Fi networks, ensuring stronger encryption and protection against brute-force attacks.

Guest Networking: You can create isolated guest networks with customizable captive portals, offering a secure way for visitors to access the internet without exposing your internal network.

VLAN Support: Virtual LAN (VLAN) support allows for segmenting your network to improve security and performance by separating different types of traffic (e.g., guest Wi-Fi, corporate devices, IoT devices).

Intrusion Detection/Prevention (IDS/IPS): UniFi controllers can monitor for suspicious network activity and help protect the network from security threats.

## 6. User and Device Management

ASD

Role-based Access Control (RBAC): Administrators can set different permissions for users and staff, ensuring appropriate access to the system and sensitive data.

Client Device Tracking: The controller can track and monitor devices connecting to the network, providing detailed information on each client, such as device type, IP address, and connection history.

Guest Access Management: The Given wireless controllers allow for easy management of guest networks, including customizable captive portals for authentication, bandwidth limitations, and time-based access.

#### 7. Customizable SSIDs and Policies

Multiple SSIDs: You can configure multiple SSIDs (Service Set Identifiers) for different user groups, such as corporate employees, guests, or specific departments.

Traffic Shaping and QoS: Quality of Service (QoS) policies can be set to prioritize critical traffic (e.g., VoIP, streaming) over less time-sensitive traffic (e.g., web browsing).

Network Rules and Policies: Flexible firewall and security rules can be configured at the controller level to enforce security policies, access control, and network segmentation.

#### 8. Integration with Other The Given Devices

Seamless Device Integration: The Given's UniFi wireless controllers integrate seamlessly with other UniFi devices, such as switches, security gateways, and cameras, allowing for a complete network solution that can be managed from a single interface.

UniFi Protect Integration: If you use The Given security cameras, you can manage them through the UniFi controller and view live video feeds, configure alerts, and manage recordings.

#### 9. Cloud Management

Cloud Access: The Given controllers can be managed remotely through the cloud. This allows administrators to access and control the network from anywhere, using the UniFi Cloud service.

Automatic Backups: The system allows for cloud-based or local backups, ensuring that configuration settings and network data are safe and can be restored if needed.

#### 10. User-friendly Interface

Web-based and App Interfaces: The UniFi controller offers a clean, intuitive web interface, which is accessible via any browser. There's also a mobile app (iOS/Android) that allows network monitoring and management on the go.

Simple Setup Wizard: The Given controllers feature an easy-to-use setup wizard to help with the initial configuration of the network.

#### 11. Software Updates

Automatic Updates: The controller can automatically download and install software updates for the UniFi devices in the network, ensuring the system is always up to date with the latest features and security patches.

#### 12. Support for Third-Party Devices

While The Given controllers are optimized for UniFi hardware, they can often be used with third-party access points and networking equipment (though full features may not be available in these cases).

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		<p><b>13. Remote Debugging and Troubleshooting</b>  <b>Advanced Diagnostics:</b> Tools like packet capture, device pinging, and network topology visualization help with troubleshooting and network optimization.  <b>Real-time Client Troubleshooting:</b> The system can identify issues affecting client devices, such as poor signal strength or high latency, and offer solutions.</p>
69	Wireless Access Point	<p><b>1. High Performance Wi-Fi</b>  <b>Dual-Band Wi-Fi:</b> Most The Given APs support dual-band Wi-Fi (2.4 GHz and 5 GHz), offering better performance and flexibility. Some models also support tri-band Wi-Fi (adding a second 5 GHz band for higher capacity).  <b>802.11ac Wave 2 &amp; 802.11ax (Wi-Fi 6):</b> The Given APs support the latest Wi-Fi standards like 802.11ac Wave 2 (Wi-Fi 5) and 802.11ax (Wi-Fi 6) for faster speeds, increased capacity, and improved performance in crowded environments.</p> <p><b>2. Advanced RF Management</b>  <b>Automatic Channel Selection:</b> The Given access points automatically choose the best radio channels to reduce interference and maximize throughput, optimizing the wireless network environment.  <b>Auto Power Adjustment:</b> APs automatically adjust their radio power levels based on the surrounding environment to minimize interference while maintaining coverage.</p> <p><b>3. Seamless Roaming</b>  <b>Zero-Handoff Roaming:</b> The Given APs support seamless roaming between access points, allowing mobile devices to move throughout the network without dropping connections. This is ideal for environments where devices need to stay connected while moving (e.g., in large offices, hospitals, or warehouses).</p> <p><b>4. Scalability and High Capacity</b>  <b>Scalable Design:</b> The Given APs are designed to scale easily. You can add more APs to the network as needed to expand coverage and capacity, making them suitable for networks of various sizes, from small offices to large campuses.  <b>Support for High Client Densities:</b> Many UniFi APs are designed to handle large numbers of clients simultaneously, making them ideal for high-density environments like stadiums, conference halls, or crowded office spaces.</p> <p><b>5. Advanced Security Features</b>  <b>WPA3 Encryption:</b> The Given supports the latest Wi-Fi security standard, WPA3, providing stronger encryption and protection against attacks like brute-force.  <b>Guest Networking:</b> Create isolated guest networks with customizable captive portals, ensuring that visitors have internet access without compromising the security of the internal network.  <b>VLAN Support:</b> The Given APs support Virtual LAN (VLAN) tagging, allowing network administrators to segment the network into different virtual networks for security and performance optimization.</p> <p><b>6. Quality of Service (QoS)</b>  <b>Traffic Prioritization:</b> The Given APs can prioritize traffic, ensuring critical applications (e.g., VoIP, video streaming, and business applications) receive</p>

higher bandwidth and better performance than less time-sensitive traffic like general web browsing.

#### 7. Cloud Management

UniFi Controller Integration: The Given APs are managed through the UniFi Controller (either on-premise or cloud-hosted). This allows administrators to configure, monitor, and manage multiple APs from a single interface, whether on-site or remotely.

Cloud Access: The Given provides remote access via the UniFi Cloud, allowing users to manage APs and monitor performance from anywhere with an internet connection.

#### 8. Power over Ethernet (PoE)

PoE Support: Many The Given AP models support Power over Ethernet (PoE), allowing them to be powered through a single Ethernet cable, simplifying installation and reducing the need for additional power outlets or adapters.

#### 9. Beamforming and MU-MIMO

Beamforming: The Given APs utilize beamforming technology, which focuses the Wi-Fi signal directly toward connected devices for improved range, speed, and reliability.

MU-MIMO (Multi-User, Multiple Input, Multiple Output): APs that support MU-MIMO can serve multiple clients simultaneously, rather than sequentially, improving efficiency and reducing congestion in high-density environments.

#### 10. Easy Installation and Mounting

Flexible Mounting Options: The Given access points come with various mounting options, including ceiling and wall mounts, to ensure optimal placement and coverage in a variety of environments.

Plug-and-Play Setup: The Given APs are known for their easy-to-deploy, plug-and-play nature, especially when integrated with the UniFi Controller. Devices are automatically detected, and most configuration settings can be done automatically or with minimal input from the user.

#### 11. Integration with Other UniFi Devices

Comprehensive Networking Ecosystem: The Given access points integrate seamlessly with other UniFi devices, including switches, routers, security gateways, and cameras. This enables a holistic network management system from a single platform.

UniFi Protect: If you are using UniFi cameras, The Given APs can integrate with UniFi Protect for surveillance and security purposes.

#### 12. Guest and User Management

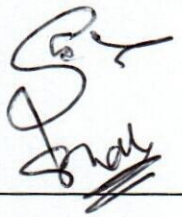
Customizable Captive Portal: The Given provides customizable captive portals for guest networks, where users can log in or accept terms and conditions before accessing the internet. This feature is particularly useful in public spaces, hotels, and other hospitality environments.

User and Device Policies: Set policies for users and devices based on role, bandwidth usage, or time of day to ensure optimal network performance and security.

#### 13. Compact and Discreet Design

Sleek, Minimalist Design: The Given APs are known for their sleek, unobtrusive designs. Many models feature a minimalist, white enclosure that blends well into various environments like offices, retail spaces, and homes.

		<p>Wall and Ceiling Mounts: Most models come with wall and ceiling mounts that allow for discreet and flexible installation.</p> <p>14. Advanced Diagnostics and Troubleshooting</p> <p>Real-time Monitoring: The UniFi Controller offers real-time monitoring of APs, including signal strength, client connections, traffic usage, and other key metrics.</p> <p>Advanced Troubleshooting Tools: The Given APs include diagnostics tools like client device tracking, packet capture, and site surveys to help troubleshoot network issues and optimize coverage.</p> <p>15. Firmware and Software Updates</p> <p>Automatic Updates: The Given access points can automatically receive firmware updates through the UniFi Controller, ensuring that your devices stay up to date with the latest features, improvements, and security patches.</p>
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**Network administrator**  
**ATH, Abbottabad.**