NETWORK UPGRADATION AND MAINTENANCE TENDER DOCUMENTS	
1	**Outdoor Access Point** 802.11standard: Triple Radio Access Point IEEE 802.11a/b/g/n/ac/ax or Higher **Throughput** Support minimum data rates of 2.4 Gbps in the 5GHz (1) band,2.4 Gbps in the 5GHz (2) band and 575Mbps in the 2.4GHz band (Aggregate peak data rate: 5.375Gbps) or Higher **Interfaces** 1×100M/1000M/2.5G/5G/10G Ethernet multi-rate ports or Higher 2×100M/1000M Ethernet port, GE*2 support IoT extension, PSE:802.3af or Higher 1×Console port (RJ45) Antenna: Built-in, Omni directional Protection degree：IP68 Support 512 associated client devices per radio or Higher Support Portal, 802.1x, MAC, Local, LDAP, TACACS+ authentication with AC Support WEP-64/128/152bit, dynamic WEP, WPA, WPA2, TKIP, CCMP encryption or Higher Power Options. 802.3at PoE, 802.3bt PoE Mean Time Between Failures (MTBF). Indoor MTBF in hours is 846,297 USB support interface **Cloud Services** Predictable and Measurable Wi-Fi Service-Level Expectation (SLE) Support WxLAN Policy Fabric for Role-Based Access Customizable Guest Wi-Fi Portal Radio Resource Management **Analytics Cloud Services** Baseline Analytics Features Come Included with Wi-Fi Assurance, Mobile Engagement, and Asset Visibility Subscriptions End-to-End Network Visibility	1

Orchestrated Networking and Application Performance Queries

Simplified Network Transparency

Baseline Analytics Features Come Included with Wi-Fi Assurance, Mobile Engagement, and Asset Visibility Subscriptions

Customer Segmentation and Reporting Based on Visitor Telemetry

Correlated Customer-Guest Traffic and Trend Analysis

Support Wireless Intelligent Application Aware (wIAA), wIDS/wIPS, 802.11w, SSID and VLAN binding, discover and suppress counterfeit APs based on SSID Support IPv4 / IPv6 dual native protocol stack, support IPv6 Portal, IPv6 SAVI Distinctive QoS strategies based on individual SSID/VLAN

Support user amount, traffic and radio load balance

Support intelligent bandwidth rate limiting, based on sharing algorithm, user, or guarantee bandwidth.

Warranty: 03 Year

2	**Wireless LAN Controller**	1

Must be Manage 256 or More Wireless LAN access points through centralize management (NO Additional cost of License)

Enhanced Access Controller License,64 APs, for Verticals, for V7 or Higher

Forwarding Performance: 8Gbps or Higher

Maximum number of STAs 4K

Interfaces: 8 GE+SFP combo 2 SFP+ 1 console or Higher

Features

• The hot standby or backup AC does not require additional AP license

• Support central & local forwarding mode

• Support 802.11k/v/r fast roaming protocols, support L2/L3 roaming

•PORTAL, 802.1x, Local authentication

• Support static and dynamic channel, power setting, dynamic rate adjustment, air interface black hole detection and compensation, intelligent load balancing

WLAN Controller / Management

AI-Driven Cloud Based WLAN Management System

***Automation for Deployment and Provisioning*:**

The Cloud based controller platform must be programmable, using open APIs, for full automation and seamless integration with complementary products across LAN, WAN, security, engagement, and asset location domains.

Comprehensive Network Performance and SLE Dashboard Analytics:

The Cloud based controller platform must provide a daily and weekly trend of the SLE metrics reports, which should provide unprecedented visibility over the last week for longer-term trend analysis into anomalies seen at the AP, device, application, and OS levels. Required set of available SLEs are: Time to Connect, Successful Connects, Throughput, Roaming, Coverage, Capacity, AP Uptime, WAN.

Simple Root-Cause Analysis and Remediation:

The Cloud based controller platform must collect information from all endpoints and correlates it for quick wireless, wired, and device problem identification. More than 150 state changes must be captured for each client device and access point every few seconds. Predictive recommendations and automated workflows for quick remediation of problems or for prevention these entirely.

Network Rewind and Dynamic Packet Capture:

The Cloud based controller service must automatically detect and start capturing packets when an anomaly is detected. With the record, one should be able to rewind back in time to see what was going on exactly when the event occurred to eliminates hours or even days of guesswork or time spent trying to reproduce an issue.

Client Profiling:

The Cloud based controller must profile clients for device types, operating systems, applications, location, and user role, to enable WxLAN to auto detect printers, Apple TVs, and other IoT devices and to categorize them for security and audit reasons, without requiring any manual database management.

Policy Creation and Enforcement:

The Cloud based controller must deliver operational simplicity by allowing to create policies for role, device type, and user-based access on the network. Global labels must be created for physical and logical resources (users, WLAN, AP, IP addresses, IP subnets, and applications) enable policies to be enforced at the edge on access points.

Personal WLAN

The Cloud based controller must Create personal wireless network (with personalized preshared key) through a self-serve portal. This feature can be used to secure IoT and guest traffic as well as provide a scalable solution for multitenant networks.

• **Network O&M**

  • Support WEB, SNMP v1/v2/v3, RMON management & configuration

  Warranty: 3 Years Warranty and Support

3	**Access Point Indoor** Enterprise Class Dual Radio Access Point IEEE 802.11a/b/g/n/ac/ax for high density environment, built-in Omni-directional antenna	1

Throughput

5GHz, 8×8:8 MU-MIMO 4.8Gbps or Higher

2.4GHz, 4×4:4 MU-MIMO 1.15Gbps or Higher

Interface

Port 1: 100/1000M/2.5G/5G/10G, RJ-45 or Higher

Port 2: 100/1000M, RJ-45 or Higher

Power

Compatible with 802.3af/802.3at or Higher

MIMO

2.4GHz, 4×4:4 MU-MIMO or Higher

5GHz, 8×8:8 MU-MIMO or Higher

Features

Support 512 associated client devices per radio or Higher

Support WEP-64/128, dynamic WEP, WPA, WPA2, TKIP, CCMP encryption

Support wIDS/wIPS, 802.11w, discover and suppress counterfeit APs based on SSID

Support IPv4 / IPv6 dual native protocol stack, support IPv6 Portal, IPv6 SAVI

Support different SSID/VLAN mapping different QoS policies

Support session amount and traffic load balance

Supports user isolation between Layer 2 forwarding suppression and virtual AP (multiple SSID)

Support Remote probe analysis

Network O&M

Support WEB, SNMP v1/v2/v3, RMON management & configuration

Warranty: 03 Year

| 4 | **Core Switch 48 port**
48 SFP Plus Ports and 6 QSFP Plus Ports
16 x SFP GE Copper Interface Transceiver Module (100m, RJ45)
16 x SFP+ Cable 5m
16 x SFP+ Module (850nm,300m, LC)
2 x 40G QSFP+ Cable 5m
Switching Capacity: 1.44 Tbps
Forwarding Capacity: 1080 Mpps
Access ports capable to support 1 Gbps, 10 Gbps Ethernet
Uplink ports are capable to support 40 Gbps
Connectivity between Core and Access switches will be on FC
Comprehensive protocol support for Layer 3 (v4/v6) unicast and multicast | 1 |

routing protocol suites, including:

BGP, MP-BGP EVPN

IS-IS

Open Shortest Path First (OSPF)

VRRP

ECMP

Routing Information Protocol Version 2 (RIPv2)

Protocol Independent Multicast Sparse Mode (PIM-SM)

Source-Specific Multicast (SSM)

Multicast Source Discovery Protocol

Management Ports: 1x RJ45 or 1x Optical Management Ports

Hot swappable Power Supply: 2 x 450W AC Power Supply Module

Hot swappable Front to read cooling fan: 3 x Fan Module (SW, 4028, Air Inlets in Panel)

Warranty: 3 Year

5	**POE switch 28 ports**
	24*10/100/1000BASE-T PoE+ Ports, 4*100/1000BASE-X SFP Combo Ports, and 4*1G/10G BASE-X SFP Plus Ports
	Switching capacity: 720 Gbps (unidirectional)/1.44 Tbps (bidirectional)
	Layer 2/Layer 3 throughput (maximum with 64 byte packets): 1,071 Mpps (wire speed)
	Switching mode: Cut-through and store-and-forward
	Front-to-back airflow
	Management and rear console port connections
	Predicted mean time between failures (MTBF): 150,000 hours
	Redundant Power Supply: 2 x 720W PoE AC Power Supply Module (Providing Power Budget of 810 Watts, Installed with 2x SFP+ Module (850nm,300m, LC)
	Connectivity between Core and Access switches will be on FC
	Built-in NMS Smart MC
	Support stacking through standard Ethernet ports (both GE and 10GE ports), and stack remotely
	Support port scheduled down and port sleep, closes the ports without application.
	  Layer 2 Features
	Support more than 16K MAC address tables, Mac-based, Port-based, protocol-based, and IP subnet-based VLAN assignment
	STP/RSTP/MSTP/PVST
	Smart Links
	Support up to 4K active VLAN
	Support Guest VLAN or equivalent, voice VLAN or equivalent
	  Layer 3 Features
	Support Static route, RIP, RIPng, OSPF
	Multicast
	IGMP snooping v1/v2/v3, MLD snooping v1/v2, Multicast VLAN replication
	QoS
	Ingress and egress traffic shaping and VLAN based traffic limit, flow mirroring
	Security
	Bidirectional ACL, port-based ACL, VLAN-based ACL, Support CPU defense,
		1

DAI (Dynamic ARP Inspection) feature, DHCP Snooping, IP Source Guard

Network O&M
- Support SNMPv1/v2c/v3, Telnet, RMON, SSHv2, Web management and automatic configuration
- **Warranty**
- Must Quote 3 Years Hardware Warranty Service

6	**Core Switch 24 ports**	1

Core Switch 24 ports

24 1G/10G SFP+ ports, 6 100G QSFP28 ports (40G QSFP+ compatible), 2 modular power supply slots, 4 fan slots, 2 out-of-band management ports, 1 console port and 1 USB port.

Switching capacity: 720 Gbps or higher (unidirectional)/1.44 Tbps or higher (bidirectional)
- **Layer 2/Layer 3 throughput (maximum with 64 byte packets):** 1,071 Mpps (wire speed)
- **Switching mode:** Cut-through and store-and-forward
- Front-to-back airflow
- Management and rear console port connections
- Predicted mean time between failures (MTBF): 150,000 hours

Uplink ports are capable to support 40 Gbps
Connectivity between Core and Access switches will be on FC
Comprehensive protocol support for Layer 3 (v4/v6) unicast and multicast routing protocol suites, including:
BGP, MP-BGP EVPN
IS-IS
Open Shortest Path First (OSPF)
VRRP
ECMP
MPLS
QOS
Routing Information Protocol Version 2 (RIPv2)
Protocol Independent Multicast Sparse Mode (PIM-SM)
Source-Specific Multicast (SSM)
 Multicast Source Discovery Protocol,
 IEEE Standard:
802.3x/802.3ad/802.3AH/802.1P/802.1Q/802.1X/802.1D/802.1w/802.1s/802.1AG
802.1x/802.1Qbb/802.1az/802.1Qaz
Layer 3 Future:
   Static routing
   Routing policy
   Routing protocols (RIP, OSPF, IS-IS, BGP, MBGP)
   Virtual Router Redundancy Protocol (VRRP)
   Bidirectional Forwarding Detection (BFD) protocol
   Virtual router
   Dynamic Host Configuration Protocol (DHCP) relay

Proxy Address Resolution Protocol (ARP)
Multicast Features
Internet Group Management Protocol (IGMP): v1, v2, v3
IGMP snooping: v1, v2, v3
IGMP filter
PIM-SM
Multicast Source Discovery Protocol (MSDP)
Security and Filters
Secure interface login and password
RADIUS
TACACS+
Ingress and egress filters: Allow and deny, port filters, VLAN filters, and routed filters, including management port filters
Filter actions: Logging, system logging, reject, mirror to an interface, counters, assign forwarding class, permit, drop, police, mark
SSH v1, v2
Static ARP support
Storm control, port error deactivate, and auto recovery
Control plane denial-of-service (DoS) protection
Dynamic ARP inspection (DAI)
Sticky MAC address
DHCP snooping

USB Port :01
Fan modules :4,Power Modules 2,
Throughput: 720Mbps or equivalent
Input Voltage AC:
Rated voltage: 100 VAC to 240 VAC @ 50 or 60 Hz
Max voltage: 90 VAC to 264 VAC @ 47 to 63 Hz
DC:
Rated voltage: –48 VDC to –60 VDC
Max voltage: –40 VDC to –72 VDC
Power consumption (Static): Single AC 117W Single DC 112W
Dual AC 122W Dual DC 117W
Warranty: 3 Year

---

7 — **Access switch 48 ports** — 1

48x10/100/1000BASE-T Ports and 4x1G/10G BASE-X SFP Plus Ports
MAC Address Table Size:16k
Maximum active VLANs:4k
Switching bandwidth:336Gbp
Packet-Switching Capacities (Maximumwith64-BytePackets)
200Gbps or above (unidirectional)/500Gbps(bidirectional)
Throughput(Mpps}(Maximumwith64BytePackets}
Layer 2 Features

	Mac-based, Port-based, protocol-based, and IP subnet-based VLAN assignment **STP/RSTP/MSTP/PVST** **Smart Links** **Support up to** 4K active VLAN Support Guest VLAN or equivalent, voice VLAN or equivalent **Layer 3 Features** Support Static route, RIP, RIPng, OSPF Multicast IGMP snooping v1/v2/v3, MLD snooping v1/v2, Multicast VLAN replication QoS Ingress and egress traffic shaping and VLAN based traffic limit, flow mirroring Security Bidirectional ACL, port-based ACL, VLAN-based ACL, Support CPU defense, DAI (Dynamic ARP Inspection) feature, DHCP Snooping, IP Source Guard Network Security: SSH, SSL and SCP RADIUS Or TACACS+,SNMPv3 crypto 802.1x, 802.1x Accounting / MIB 802.1x w/ port security 802.1x w/Voice VLAN 802.1x Guest VLAN 802.1x VLAN assignment 802.1x MAC-Auth Bypass BPDU/Root Guard, Port Security Private VALN Edge Storm Control Block unknown unicast and multicast IGMP Snooping, IGMP Filter/Throttle **Warranty** Must Quote 3 Years Hardware Warranty Service		
8	**24 Port Manageable POE Gigabit Switch** Full Managed intelligent switch @ 24 x GIGABITE POE@MINIMUM 2 X GIGABIT SFP @ RING SUPPORTABLE. Switch must be capable of smooth working / operate all 4K/4MP/2MP/PTZ cameras. MAC address list capacity is 8K. Support 4k high. Definition video transmission. Switching Capacity (as per requirements of the cameras) Packet forwarding Rate (as per requirement of the cameras) POE power budget Minimum 360W. With reek. (Rack having digital volt meter 6 to 10A, 2 Pole, Schneider circutt breaker. Minimum 4 port PDU. Lock with keys Dual mounting options ground and wall Permanent tagging plates) UL Listed.		1
9	**16 Port Manageable POE Gigabit Switch** FULL MANAGED INTELLIGENT SWITCH @ 16 X GIGABIT POE@		1

	MINIMUM 2X GIGABIT SFP@ RING SUPPORTABLE.	
	Switch must be capable of smooth working/ operate.	
	MAC address list capacity is 8k.	
	Support 4 k high-definition video transition.	
	Switching capacity (as per requirement of the cameras).	
	Packet Forwarding Rate (as per requirement of the cameras)	
	Support Fast Ring as redundant link.	
	POE power Budget (as per requirement of the cameras).	
	UL listed.	
10	**08 Port Managed POE Gigabit Switch** INDUSTRIAL GRADE @FULL MANAGED SWITCH @8X GIGABIT SFP @ RING SUPPORTABLE. Support 4k high-definition video. Support Fast Ring as redundant link. Switching Capacity 50 Gbps. Packet Forwarding rate 17Mbps. Buffer Memory 4mpps. 96- 120WPOE power Budget Watch dog feature / having option of auto Detect and restart cameras that do not respond. UL Listed.	1
11	**L3 + Managed Core/aggregation Switch** L3 + MANAGED CORE/ AGGRIGATION SWITCH@ 16x1 GB SFP PORTS @4x10 GB SFP PORTS@ 8 x 1 GB ETHERNET PORT. Switching Capacity minimum 560 Gbps. Packet Forwarding Rate minimum 120 Mpps. Packet Buffer Size 1.3Mbyte. Ethernal Port Speed 10/100/1000 Mbps. MAC Table size 14K. IPv4 Routes 10K Dynamic ARP 4K. 7 Rack mount.	1

	Rack mount. CE/FCC/UL	
	Power Cable rate per ft	
12	**Rack/ Box for Access Switches + OFC Point for Outdoor.** 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 +55C, 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 voltmeter, 6 to 10A, 2 Pole, Schneider circuit breaker power distribution board (minimum 4 port POU) dual locks with keys, Dual mounting options ground and wall. Built in rain shed Permanent tagging plates	1
13	**Rack / Box for Access Switches + OFC Point for Indoor** **Rack for Poe switch, ODF etc for indoor use** Built-in fiber splice box 20 Ft extra OFC 12/24 core rolling option. 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 POU) dual locks with keys,	1

	Dual mounting options ground and wall. Per meant tagging plates		
14	**6U Rack/ Box.** 6U rack for NVR, PoE switch, access switch, ODF, UPS for indoor use Built-in fiber splice box Built-in 2kva standard UPS placing option. 20 Ft extra OFC 12/24 core rolling option. including fans for heat extraction, air filter with exhaust pocket removable tray with dual shelf's and universal fittings built-in fiber in out holding clumps inside DB built-in earthling strip and electric connectors	1
15	**27U Rack/ Box.** 27U rack for NVR, PoE switch, access switch, ODF, UPS for indoor use Built-in fiber splice box Built-in 2kva standard UPS placing option. 20 Ft extra OFC 12/24 core rolling option. including fans for heat extraction, air filter with exhaust pocket removable tray with dual shelf's and universal fittings built-in fiber in out holding clumps inside DB built-in earthling strip and electric connectors	1
16	**42U Rack/ Box.** 42U rack for Data Centre, PoE switch, access switch, ODF, UPS for indoor use Built-in fiber splice box Built-in 2kva standard UPS placing option. 20 Ft extra OFC 12/24 core rolling option. including fans for heat extraction, air filter with exhaust pocket removable tray with dual shelf's and universal fittings built-in fiber in out holding clumps inside DB built-in earthling strip and electric connectors	1
17	**Tools Kit.** (Complete tools kit and Networking Set) Complete Networking tools kit Set i.e_ (cable stripper, Y key professional Network crimping tool, high quality LAN	1

		/ Network cable tester having ability to Check line voltage on RJ45 (PoE), cable tracer	
		digital laser tape measure	
		02 Nos room temperature + humidity meter I Tester,	
		tagging machine with 02 Nos Tap	
		02 optical fiber testing laser light (Specially designed for OFC testing)	
		Digital soldering station (Qawia Set with	
		its related accessories),	
		Digital SMD Hot Air Rework Station (Heat gun),	
		Glue Guns Set	
		tools carrying bag	
		aluminum 02 Nos sliding + folding stairs	
		original screw driver set,	
		Nuts opining/ spanner type wrench keys set,	
		Earthling tester.	
18		**Wi-Fi 6 Router**	1
		Wi-Fi 6 (802.11ax) technology provides faster speeds, greater capacity and less network congestion	
		Next-gen speeds up to AX5400 (4,800 Mbps on the 5 GHz band and 600 Mbps on the 2.4 GHz band)	
		Dual-band Wi-Fi with up to 6 simultaneous streams makes 4K streaming, VR gaming or video chatting a breeze	
		OFDMA and MU-MIMO technology communicate more data to more devices while simultaneously reducing lag	
		BSS coloring technology reduces interference in 'noisy' Wi-Fi environments, making more efficient use of available Wi-Fi spectrum	
		4 Gigabit Ethernet LAN ports and 1 Gigabit Ethernet WAN port provide optional wired connectivity	
		Built in USB 2.0 and USB 3.0 ports to create shared storage	
		Intelligent Quality of Service (QoS) prioritizes network traffic to minimize the impact of busy bandwidth	
		Backwards compatibility ensures support for previous Wi-Fi standards and all	

		Wi-Fi devices	
		Increased battery life of connected devices with Target Wake Time technology	
		Supports WPA3™ — the latest WiFi security for more protection	
		Voice Control for an even easier home Wi-Fi networking experience	
19		**KVM Switch Console**	1
		8 Port Rackmount KVM Console w/ 6ft Cables - Integrated KVM Switch w/ 19" LCD Monitor - Fully Featured 1U LCD KVM Drawer- OSD KVM - Durable 50,000 MTBF - USB + VGA Support (RKCONS1908K)	
		TECH SPECIFICATIONS: Rackmount KVM Console, 19" Active Matrix TFT LCD Monitor, 1280 x 1024, 8 port VGA KVM switch w/ 6 ft. cables, 99 key full keyboard + numeric keypad & trackpad; Supports USB 2.0	
		PROFESSIONAL & SECURE: Customizable hot-keys, on-screen display (OSD), multi-level user security, user access levels / port permissions, & auto scan	
		INTEGRATED DESIGN: Combines a KVM + Console w/ integrated power supply into 1U of rack space allowing space for other equipment. Mount depth: 23.8" [60.5 cm] to 35" [89 cm] (incl. mounting hardware)	
		HEAVY DUTY: LCD KVM drawer has durable steel construction and heavy duty rail design that supports frequent use in operating environments from 0C to 40C (32F to 104F) with an MTBF of 50,000 hours	
20		16 Port Cat6 KVM Console, MT-VIKI VGA KVM Switch Over Cat5e, Included 16 VGA to Cat6 KVM Adapter, Support Extend Distance up to 230ft/70m by RJ45 Ethernet Cable	1
		This 16 port Cat6 extension kvm switch allows you to manage up to 16 computers/servers max 230ft from machines to KVM console. Cat6 ethernet cables prefered for better performance	
		16-pack VGA Cat6 kvm dongles are included. Compare with normal kvm switch, this Cat6 kvm switch allows to extend up to 230ft/70m distance over CAT6 cable from kvm to severs, it can elimilate the needs for bulky kvm cable and minimize the cable mess.	
		4 ways for switching: OSD Menu/Hortkey/Panel/IR remote control.	
		Multi-system Compatibility, support DOS/Windows 95/98/98ES/2000/ME/XP.WinNT, Netware,etc.	
		This 16 ports rack mount kvm over ethernet cable fits 1U rackmount with ears.	

	MT-VIKI provides 2 years warranty and lifetime tech. support.	
21	**Long range 360 degree wifi router**	1
	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)	
	1×2.5Gbps WAN port, $8 \times$ Gigabit LAN ports, and $2 \times$ USB 3.0 in Type A and Type C	
	1.8 GHz Quad-Core CPU and 2 co-processors eradicate latency and deliver stable performance	
	Band Steering directs clients to less congested band and Airtime Fairness optimizes the time usage	
	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.**	
22	**Long range CPE outdoor**	1
	Passive PoE supports to allow flexible deployment and convenient installation	
	Interface: 1 10/100/1000 Mbps Shielded Ethernet Port (LAN/POE), 1 Reset Button	
	Power Supply: Passive Power over Ethernet via LAN (+4,5pins; -7,8pins), Voltage range: 16-27V DC	
	Enclosure: Material: Outdoor PC stabilized plastic, Weatherproof: IP65 water and dust proof design	
	Wireless Standards: IEEE 802.11a/n/ac	
	Frequency: 5.15~5.85 GHz	
	System-level Optimizations: Optimized IGMP Snooping / Proxy for multicast applications	
	Input: 100-240VAC, 50/60Hz	
	Output: 24VDC, 0.5A Max, +4, 5pins; -7, 8pins. (Support up to 60m Power over Ethernet)	
	Efficiency: > 84.29%	
	3dBi high-gain directional 2×2 MIMO, ideal for long-distance application	
	Excellent beam directivity, improved latency and noise cancellation	

		Innovative snap-lock parts make for fast assembly and a sturdy structural design keeps CPE710 stable even in strong winds	
		Durable IP65 weatherproof enclosure along with 15kV ESD and 6kV lightning protection ensures all-weather suitability	
		Pharos Control gives administrators a free, centralized management system	
		Passive PoE supports to allow flexible deployment and convenient installation	
.23	**Duct/ PVC pipe for Networking** ISO Certified brand Duct / PVC-U pipe including delivery, accessories like sockets, bends, elbows, wall clamps etc. Complete in all respect In RFT.		1
24	**OFDF** 8 Ports full loaded with all accessories		1
25	**OFDF** 12 Ports full loaded with all accessories		1
26	**OFDF** 24 Ports full loaded with all accessories		1
27	**OFC Cable** Single Mode 4 core Optical fiber cable, including splicing, SC-LC patch cords /connectors and installation. In RFT		1
28	**OFC Cable** Single Mode 6 core Optical fiber cable, including splicing, SC-LC patch cords / connectors and installation. InRFT		1
29	OFC Cable Single Mode 8 core Optical fiber cable, including splicing, SC-LC patch cords /connectors and installation. In RFT		1
30	**OFC Cable** Single Mode 12 core Optical fiber cable, including splicing, SC-LC patch cords / connectors and installation. In RFT		1
31	**Rj-45 I/O Box** ISO Certified/ UL listed brand Node box 1. 1/0 RJ-45 Female connector 2. Face plate 3. Back box		1

32	**SFP Module to RJ-45 Cat6 etc.** SFP to Rj-45 Modules	1
33	**Fixed Rj-45 interface with metallic shield** Rj-45 Lan Jointer	1
34	**Steel Fixed Ladder** 5~8 Feet for Complaint	1
35	**L3 Manageable PoE Switch** Comply with IEEE 802.3, IEEE 802.3u, IEEE Switch 802.3ab, IEEE 802.3z, IEEE 802.3x, IEEE 802.1p, IEEE 802.1q, IEEE 802.1w, IEEE 802.1d, IEEE 802.1s, IEEE 802.3 af/at standards 24 x 10/100/1000 Base-T Ethernet ports (Data/Power), 4 separate 1000 Base-X SFP ports, 1 x Console port 16 K MAC address table and MAC address auto-learning 12Mb large buffer Switching capability: 56Gbps	1
36	**10 KVA Online UPS A Category with Long Backup.** Capacity/Rating 10KVA UPS shall be free from workmanship defects, sharp edges, nicks, scratches, burrs, etc. All fasteners shall be fixed properly. The equipment shall be complete with all parts and all parts shall be functional. Microprocessor based Digital Control; IGBT based, True on line double conversion, AC to DC conversion and then DC to AC. Input Voltage, 110-270V 45-55 Input Frequency, Hz (Generator Compatible) Input Power Factor > 0.90 Output Voltage, 208V/220/230/240V AC –Selectable Out Put Power Factor, 0.9 THD, < 2% Linear Load and 5% Non Linear Load. Over Load On Batteries, 105% - 125% for at least 120 sec, if overload Exceeds UPS shall go in Bypass mode and auto recover on removal of load. Paralleling, Option for paralleling up to 4 Units. By Pass Switches, Built in Static/Automatic Bi-Directional Type (Manual By Pass arrangement Not Acceptable) Protection, Input Over/Under Voltage, Output Overload, Short Circuit, Battery	1

	Low/High, Battery reversed polarity, protection for IGBT & thermal overload. Display, LCD Alarms, Audible Alarms should be provided for Mains Fail, Battery Low and Fault Conditions. Cooling, Air forced type	
37	**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 Permanent tagging plates	1
38	UTP Cat-VI 1/0 (baynet)	1
39	Faceplate (baynet)	1
40	Back Box (baynet)	1
41	24 Port Patch Panel Fully Loaded	1
42	9U Rack 12 M6 Cage Nuts 4 Lag Bolts for Wall Mounting 9U Rack Mount Units	

External Dimensions: Height 20" x Width 24" x Depth 24"

Designed for equipment with a 19" mounting profile

Vented Top/Sides/Front Panels for adequate airflow

Reversible front door with tempered glass window

Removable side panels for easy access to equipment

Front and Side Panels are lockable with included set of keys

Top/Bottom/Real Knockouts for easy cable entry and exit

Supports up to 130lbs when secured properly

Flat Packed - Assembly Required

43	Optical Fiber Cable 12 Core (ft)	1
44	OFDF= 24 Ports for Server Room	1
45	OFDF 12 Ports for DB	1
46	Pigtail 5C-5C	1
47	SC-LC Patch Cord (1 Meter)	1
48	Duct 60 x 60 (Each 10ft Length)	1
49	Duct 40 x 40 (Each 10ft Length)	1
50	Duct 16 x38 (Each 10ft Length)	1
51	PVC Pipe 11/2 Inch for Ethernet Cabling	1
52	PVC Pipe 1 Inch for Power & Fiber (Each 10ft Length)	1
53	40/76 Power Cable (ft)	1
54	Power distribution unit Branded	1
55	l00 Amp Breaker for Control Room with DB	1
56	10 Amp Breaker	1
57	HD Pipe 1 Inch (ft)	1
58	Digging and Filling for Optical Fiber (ft)	1
59	OFDF 6 Ports	1
60	1 Gigabit pluggable single mode 25G SFP transceiver 1310 / 1550nm, 20km LC.	1
61	UTP Cat-VI Patch Cord 1 Meter	1
62	2 Core Power cable for centralized power distribution	1

	ISO certified brand, Two Core 2.5 mm pure copper, flexible, (Rate Per Feet)		
63	2URack		1
64	Cable tracing, labeling/ tagging and management Cable.		1
65	Installation and Termination of Patch Panel		1
66	Installation and Termination of OFDF		1
67	Installation and fixation of Data Cabinet		1
68	Installation and laying of Cat-!V cable		1
69	Installation and laying of power cable		1
70	Installation and laying of Fiber optic		1
71	**Cat-6A UTP Cable** ISO certified brand / UL listed 0.565 (23AWG), UTP Cat 6 A Cable , solid bare copper (99.95%) 75C U/UTP CAT-6 Network Cable including the RJ-45 connectors, Support Poe long distance transmission, Life time of cable 10 year or higher. Environmentally-friendly outer sheath; Top-notch quality. Including Best quality 15u inch gold plated contacts, support 1000 base-T Ethernet, Compliant with ROHS standard, 8 pins x 8 conductors. **(Rate per feet)**		1
72	**2 Core Power cable for centralized power distribution** ISO certified brand, Two Core 2.5 mm pure copper, flexible, **(Rate Per Feet)**		1
73	Relevant installation / commissioning configuration services of quoted Electronic Device/equipment with Free servicing / minor repairs to 1 x years warranty period		1