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Republika ng Pilipinas  
**Kagawaran ng Edukasyon**  
Tanggapan ng Pangalawang Kalihim

**OJA MEMO 00-0820-0095**  
**MEMORANDUM**  
12 August 2020

For: **Regional Directors and BARMM Regional Secretary**  
**Schools Division Superintendents**  
**Regional and Division Supply Officers**  
**Regional and Division IT Officers**  
**Finance Officers**  
**All Others Concerned**

Subject: **IMPLEMENTING GUIDELINES ON UTILIZATION OF PROGRAM SUPPORT FUND (PSF) FOR THE PROCUREMENT OF NETWORK INFRASTRUCTURE TO REGIONAL AND DIVISION OFFICES TO SUPPORT DEPED ENTERPRISE RESOURCE PLANNING SYSTEM (DERPS) II PROJECT**

- A. The Department of Education (DepEd) is continuously engaged to develop, support and strengthen education management and learning support systems for improved access to quality basic education.
- B. To sustain the implementation of various ICT initiatives, projects and activities, the DepEd through the Information and Communications Technology Service (ICTS) has been providing financial subsidy to all regions and divisions nationwide.
- C. This year, the Program Support Funds (PSF) amounting to **SIXTY EIGHT MILLION SIXTY THREE THOUSAND ONE HUNDRED TWENTY ONE PESOS AND SIXTY-NINE CENTAVOS** (Php68,063,121.69) shall be downloaded to fifteen (15) Regional Offices and thirty-four (34) Division Offices through the issuance of the Subsidy Allotment Release Order (SARO). Each office shall receive equal amount of **ONE MILLION THREE HUNDRED EIGHTY-NINE THOUSAND AND FORTY - THREE PESOS AND THIRTY CENTAVOS** (Php1,389,043.30). Refer to "Annex A" for the complete list.
- D. The downloaded funds shall be used for the following purposes:
1. To support the implementation, Deployment and Configuration of the



**Office of the Undersecretary for Administration (OJA)**

[Administrative Service (AS), Information and Communications Technology Service (ICTS), Disaster Risk Reduction and Management Service (DRMMS), Bureau of Learner Support Services (BLSS), Baguio Teachers Camp (BTC), Central Security & Safety Office (CSSO)]

Department of Education, Central Office, Meralco Avenue, Pasig City  
Rm 519, Mabini Bldg; Mobile: +639260320762; Tel: (+632) 86337203, (+632) 86376207  
Email: usec.admin@deped.gov.ph; Facebook/Twitter @depeditayo



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following DERPS I modules at fifteen (15) Regional Office and thirty-four Division Offices:

- a. Procurement module.
- b. Fixed Assets Management module.
- c. Inventory Management module; and
- d. Project Monitoring.

Part of the scope of work and deliverables of DERPS II is the installation and configuration of Server/Appliance. Refer to “Annex B” and “Annex C” for the technical specifications of Server/Appliance for Regional and Division Offices, respectively.

2. To support the learning resource systems and learning continuity amidst COVID 19.

E. The following Information and Communication Technology Equipment / Devices / Works shall be allowed under the PSF:

| <b>ACTIVITY</b>   | Information and Communication Technology Equipment / devices / Works  |
|---|---|
| Procurement of Network Infrastructure                       | Passive Network Component <ul style="list-style-type: none"> <li>• Structured Cabling</li> <li>• Data cabinet</li> <li>• Wall mount rack</li> </ul> Active Network Component <ul style="list-style-type: none"> <li>• Access Points</li> <li>• Router</li> <li>• Network Switch</li> <li>• Perimeter Firewall</li> </ul> Uninterrupted Power Supply<br>Power Distribution Unit (PDU)<br>Air Conditioning Unit<br>Fire Suppression System<br>Fire Detection and Alarm System<br>Security Camera<br>Door Access System (e.g. Biometrics, Face and RFID Reader)<br><u>Including:</u> <ul style="list-style-type: none"> <li>• Implementation Services for electrical and civil works</li> <li>• Provides Knowledge Transfer/Training of the set-up for the end user</li> </ul> |
| Rehabilitation/Upgrading of existing Network Infrastructure | Passive Network Component <ul style="list-style-type: none"> <li>• Structured Cabling</li> <li>• Data Cabinet</li> <li>• Wall mount rack</li> </ul> Active Network Component  |



|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• Access Points</li> <li>• Router</li> <li>• Switch</li> <li>• Perimeter Firewall</li> </ul> <p>Uninterrupted Power Supply<br/> Power Distribution Unit (PDU)<br/> Air Conditioning Unit<br/> Fire Suppression System<br/> Fire Detection and Alarm System<br/> Security Camera<br/> Door Access System (e.g. Biometrics, Face and RFID Reader)</p> <p><u>Including:</u></p> <ul style="list-style-type: none"> <li>• Implementation Services for electrical and civil works</li> <li>• Provides Knowledge Transfer/Training of the set-up for the end user</li> </ul> |
|--|---|

**F. Utilization and Liquidation**

1. The recipient Regional and Division Offices shall prepare their respective plans and requirements based on the needs of their offices to support the above stated purposes. Refer to “Annex D” for the minimum technical specifications.
2. The use of the Program Support Fund must be consistent with the existing budgeting, accounting, auditing and procurement rules and regulations and internal policies of the Department of Education.
3. The management and disbursement of funds, including submission of Physical and Financial Accomplishment Report shall be the responsibility of the Regional and Division Information Technology Officers (ITOs).
4. The Physical and Financial Accomplishment Report, which reflects the activities undertaken shall be submitted to the ICTS-Technology Infrastructure Division through email at [icts.tid@deped.gov.ph](mailto:icts.tid@deped.gov.ph).

For clarification or more information on these matter, please direct concerns to Engr. Ofelia L. Algo, Chief, Technology Infrastructure Division, Information and Communication Technology Service at 6332363/ 09088782413, Email: [ofelia.algo@deped.gov.ph](mailto:ofelia.algo@deped.gov.ph)

For reference and appropriate action.




**ALAIN DEL B. PASCUA**  
Undersecretary





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## DERPS II RECIPIENTS

### LIST OF REGIONAL OFFICES

| REGION                               | ADDRESS  |
|--------------------------------------|--|
| Cordillera Administrative Region     | Wangal, La Trinidad, Benguet                                       |
| Regions I – Ilocos Region            | Flores St., Catbangan, San Fernando City, La Union                 |
| Region II – Cagayan Valley           | Carig, Tuguegarao City, Cagayan                                    |
| Region IV-A – CALABARZON             | Karangalan ES, Karangalan Village, Cainta, Rizal                   |
| Region IV-B – MIMAROPA               | Meralco Ave., Corner St. Paul Road, Pasig City                     |
| Region V – Bicol Region              | Rawis, Legaspi City  |
| Region VI – Western Visayas          | Duran St., Iloilo City   |
| Region VII – Central Visayas         | Sudlon, Lahug, Cebu City   |
| Region VIII – Eastern Visayas        | Gov't Center, Candahug, Palo, Leyte                                |
| Region IX – Zamboanga Peninsula      | J. Alano St. Pagadian City   |
| Region X – Northern Mindanao         | Don Gregorio Pelaez Sports Complex, Velez St., Cagayan de Oro City |
| Region XI – Davao Region             | F. Torres St. Davao City   |
| Region XII – SOCCSKSARGEN            | Carpenter Hill, Koronadal City                                     |
| Region XIII – CARAGA Region          | Km. 3, Libertad St., Butuan City                                   |
| Bangsamoro Autonomous Region (BARMM) | Cotabato City  |

| REGIONAL OFFICE                  | DIVISION OFFICES  | ADDRESS                                   |
|----------------------------------|-------------------|---|
| Cordillera Administrative Region | Apayao            | Kabugao, Apayao                           |
|                                  | Benguet           | La Trinidad, Benguet                      |
|                                  | Mountain Province | Bontoc, Mt. Province                      |
|                                  | Ilocos Sur        | Quirino Blvd., Zone V, Bantay, Ilocos Sur |



|                                |                     |   |
|--------------------------------|---------------------|---|
| Regions 1 – Ilocos Region      | Pangasinan I        | Alviar St., East, Capitol Grounds, Lingayen, Pangasinan |
| Region 2 – Cagayan Valley      | Isabela             | Ilagan City, Isabela                                    |
|                                | Nueva Vizcaya       | Bayombong, Nueva Vizcaya                                |
| Region III – Central Luzon     | Zambales            | Iba, Zambales   |
|                                | Aurora              | San Luis, Aurora  |
| Region 4A – CALABARZON         | Lucena              | Lucena City   |
|                                | Quezon Province     | Talipan, Pagbilao, Quezon                               |
| Region 4B – MIMAROPA           | Oriental Mindoro    | Calapan, Or. Mindoro                                    |
|                                | Palawan             | Puerto Princesa City                                    |
| Region 5 – Bicol Region        | Masbate Province    | Masbate City  |
|                                | Camarines Sur       | Freedom Sports Complex, San Jose, Pili, Cam. Sur        |
| Region 6 – Western Visayas     | Guimaras            | Jordan, Guimaras  |
|                                | Negros Occidental   | Bacolod City, Negros Occidental                         |
| Region 7 – Central Visayas     | Dumaguete           | Dumaguete City, Negros Oriental                         |
|                                | Bohol               | Tagbilaran City, Bohol                                  |
| Region 8 – Eastern Visayas     | Leyte               | Tacloban City   |
|                                | Northern Samar      | Catarman, N. Samar                                      |
| Region 9 – Zamboanga Peninsula | Zamboanga del Norte | Dipolog City  |
|                                | Zamboanga del Sur   | Pagadian City   |
| Region 10 – Northern Mindanao  | Bukidnon            | Malaybalay, Bukidnon                                    |
|                                | Lanao del Norte     | Tobod, Lanao del Norte                                  |
| Region 11 – Davao Region       | Digos               | Digos City  |
|                                | Compostela Valley   | Nabunturan, Compostela Valley                           |
| Region 12 – SOCCSKSARGEN       | Kidapawan City      | Kidapawan City  |
|                                | Tacurong City       | Tacurong City   |
|                                | South Cotabato      | Alunan Ave., Koronadal City                             |



|  |                |                             |
|--|----------------|-----------------------------|
| Region 13 –<br>CARAGA Region               | Bislig         | Bislig City                 |
|  | Agusan del Sur | Prosperidad, Agusan del Sur |
| Bangsamoro<br>Autonomous<br>Region (BARMM) | Basilan        | Isabela, Basilan            |
|  | Marawi         | Marawi City                 |



**SERVER/APPLIANCE FOR REGIONAL OFFICES  
TECHNICAL SPECIFICATIONS**

**Brand: Oracle Database Appliance**

**Model: X8-2-HA**

**General Features:**

1. Single automated patching interface and patch bundle to update and patch software system components such as firmware and hardware drivers, operating system, storage manager, clustering software, and database
2. Hardware and software configuration built to protect against component failures such as disk failures, CPU failures, memory failure, network card failures, and system controller failures.
3. Hot-pluggable components such as power units, fans, and storage disks

**Technical Specifications**

Two 2RU X8-2L Server:

Each Server with:

1. Processor: 2x Intel Xeon Gold 5218 2.3 GHz, 16 cores, 125 watts, XCC, 22 MB L3 cache
2. Memory: 384 GB (12 x 32 GB)
3. Internal Storage:
4. -2x internal 480 GB M.2 SSDs
5. Network: 4-port 10GBase-T card
6. One 4RU DE3-24C Storage Array: 12x 7.68 TB SSD

**Power**

1. Two 1,200 watt hot-swappable and redundant power supplies, rated 96% efficiency
2. Rated line voltage: 100 to 240 Vac
3. Rated input current 100 to 127 VAC 7.2 A and 200 to 240 VAC 3.4 A
4. Two 580 Watt hot-swappable, redundant power supplies per storage shelf, rated 88% efficiency
5. Rated line voltage: 100 to 240 Vac
6. Rated input current: 100 VAC 8A and 240 VAC 3A

**Dimensions and Weight**

1. Height: 86.9 mm (3.4 in.) per server; 175 mm (6.9 in.) per storage shelf
2. Width: 445.0 mm (17.5 in.) per server; 483 mm (19.0 in.) per storage shelf
3. Depth: 759.4 mm (29.9 in.) per server; 630 mm (24.8 in.) per storage shelf
4. Weight: 28.6 kg (63 lb.) per server; 38 kg (84 lbs.) per storage shelf



**SERVER/APPLIANCE FOR DIVISION OFFICES  
TECHNICAL SPECIFICATIONS**

**Brand: Oracle Server**

**Model: X8-2L**

**General Features:**

1. Single automated patching interface and patch bundle to update and patch software system components such as firmware and hardware drivers, operating system, storage manager, and database
2. Hardware and software configuration built to protect against component failures such as disk failures, CPU failures, memory failure, network card failures, and system controller failures.
3. Hot-pluggable components such as power units, fans, and storage disks

**Technical Specifications**

1. Processor: 2x Intel Xeon Gold 5218 2.3 GHz, 16 cores, 125 watts, XCC, 22 MB L3 cache
2. Memory: 384 GB (12 x 32 GB)
3. 2x internal 480 GB M.2 SSDs
4. Network: 4-port 10GBase-T card
5. Disk storage: 2x NVMe SSDs (6.4 TB per drive)

**Power Requirement**

1. Two 1,200 watt hot-swappable and redundant power supplies, rated 96% efficiency
2. Rated line voltage: 100 to 240 VAC
3. Rated input current 100 to 127 VAC 10 A and 200 to 240 VAC 7 A

**Dimensions and Weight**

1. Height: 86.9 mm (3.4 in.)
2. Width: 445.0 mm (17.5 in.)
3. Depth: 759.4 mm (29.9 in.)
4. Weight: 28.6 kg (63 lb.) fully populated





**MINIMUM TECHNICAL SPECIFICATIONS**

| Item #           | ITEMS & DESCRIPTION   |
|------------------|---|
| <p><b>01</b></p> | <p><b>Unmanaged Switch</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>● Brand New</li> <li>● Device Type: Unmanaged Switch, Gigabit Ethernet</li> <li>● Form Factor: Rack-mountable</li> <li>● Ports Quantity: 24 port</li> <li>● Switching capacity: 48Gbps</li> <li>● Switch throughput: 35.7 Mpps</li> <li>● Layer 2 switching</li> <li>● Store and forward switching</li> <li>● MAC Address up to 8K</li> <li>● Auto-negotiation, Auto MDI/MDI-X</li> <li>● Port LED for cable diagnostic</li> <li>● Flow control for full duplex capability</li> <li>● Half/full-duplex for Ethernet/Fast Ethernet speeds</li> <li>● Standards Compliance: IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3x;</li> </ul>   |
| <p><b>02</b></p> | <p><b>Managed Switch</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>● Brand New</li> <li>● Device Type: Stackable Managed Gigabit Switch,</li> <li>● Ports Qty: 24 port (10/100/1000T PoE+) &amp; 4 port (1000T-SFP)</li> <li>● IPv4/IPv6 static routing, VLAN</li> <li>● MAC Address up to 15K</li> <li>● Switching capacity: 50Gbps</li> <li>● Switch throughput: 42 Mpps</li> <li>● Flow control/full duplex capability</li> <li>● Auto-negotiation, Auto MDI/MDI-X</li> <li>● IEEE 802.1x Authentication with Dynamic VLAN assignment</li> <li>● Quality of service</li> <li>● Security Features:               <ul style="list-style-type: none"> <li>○ Access Control Lists (ACL)</li> <li>○ Storm Control</li> <li>○ DHCP snooping</li> <li>○ IGMP snooping</li> <li>○ IP source guard</li> <li>○ Dynamic ARP Inspection (DIA)</li> </ul> </li> <li>● Management</li> </ul> |



|                  |  |
|------------------|--|
|                  | <ul style="list-style-type: none"> <li>○ Secure Shell (SSH)</li> <li>○ Simple Network Management Protocol (SNMP)</li> <li>● Standards Compliance: IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.1D, IEEE 802.1Q, IEEE 802.1p, IEEE 802.3ad, IEEE 802.3x, IEEE 802.3at, IEEE 802.3af, IEEE 802.1w;</li> <li>● Provides Knowledge Transfer/Training of the set-up for the end user</li> <li>● Warranty: 3 years parts and services from date of acceptance and on-site service</li> </ul>  |
| <p><b>03</b></p> | <p><b>WAN Router</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>● Brand New</li> <li>● LAN interface: At least four (4) 10/100BASE-T LAN ports</li> <li>● Routing: Static routing, RIPv1/v2 and OSPF</li> <li>● Must support 3G/4G</li> <li>● Must have VPN Security <ul style="list-style-type: none"> <li>○ IPSec</li> <li>○ Point-to-Point Tunneling Protocol (PPTP)</li> <li>○ Layer Two Tunneling Protocol (L2TP)</li> </ul> </li> <li>● Must support Network Address Translation (NAT) <ul style="list-style-type: none"> <li>○ VPN NAT</li> </ul> </li> <li>● Must have Quality of Service (QoS) <ul style="list-style-type: none"> <li>○ Low-Latency Queuing (LLQ)</li> <li>○ Weighted Fair Queuing (WFQ)</li> </ul> </li> <li>● Provides Knowledge Transfer/Training of the set-up for the end user</li> <li>● Warranty: 3 years parts and services from date of acceptance and on-site service</li> </ul> |
| <p><b>04</b></p> | <p><b>PoE Access Point</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>● Brand New</li> <li>● Built-in Antenna</li> <li>● Standards: 802.11a/b/g/n/ac wave 2 with 2.4GHz/5GHz frequency bands; dual band</li> <li>● Device Management: Web management</li> <li>● Throughput: 1100mbps</li> <li>● Interface: 10/100/1000BASE-T Ethernet uplink</li> <li>● Authentication: 802.1x, PPSK, PEAP, RADIUS</li> <li>● Data Encryption: WPA (TKIP), WPA2 (AES), WPA-PSK</li> <li>● Features: <ul style="list-style-type: none"> <li>○ Load balancing based on the number of users or traffic</li> <li>○ Bandwidth control</li> <li>○ Manual or automatic configuration</li> </ul> </li> <li>● Power Requirement: Power over Ethernet (PoE)</li> </ul>  |



|           |   |
|-----------|---|
|           | <ul style="list-style-type: none"> <li>• Provides Knowledge Transfer/Training of the set-up for the end user</li> <li>• Warranty:3 years parts and services from date of acceptance and on-site service</li> </ul>  |
| <b>05</b> | <p><b>Wireless Router</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>• Brand New</li> <li>• Standards: Supports 802.11b, 802.11a, 802.11n, 802.11ac, 802.11g with 2.4GHz/5GHz frequency bands; dual band</li> <li>• Device Management: Web based</li> <li>• Operational Mode: At least as a Wireless Router, Access Point</li> <li>• Data transfer rate: 400mbps</li> <li>• Interface: 1x Gigabit WAN port, 4x Gigabit LAN ports</li> <li>• Security: <ul style="list-style-type: none"> <li>○ 64/128-bit WEP</li> <li>○ WPA2-Personal</li> <li>○ WPA2-Enterprise</li> </ul> </li> <li>• Certification FCC class B</li> <li>• Power Requirement: <ul style="list-style-type: none"> <li>○ Input: 100-240V ~ 50-60Hz</li> </ul> </li> <li>• Provided with User Guide, Ethernet Network Cable and Power Adapter</li> </ul>   |
| <b>06</b> | <p><b>Perimeter Firewall</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>• Must accommodate 150 - 200 users (Depend on the number of personnel in the Regional and Division Offices)</li> <li>• Virtual Private Network</li> <li>• Bandwidth Management</li> <li>• Multiple Link Management</li> <li>• Comprehensive on Appliance Reporting</li> <li>• With all subscription services (minimum 1 year subscription) <ul style="list-style-type: none"> <li>○ Gateway Anti-Virus</li> <li>○ Gateway Anti-Spyware</li> <li>○ Gateway Anti-Spam</li> <li>○ Intrusion Detection and Prevention Systems</li> <li>○ Content Filtering</li> </ul> </li> <li>• Must have comprehensive training on installation, configuration, deployment of rule sets and system navigation and best practice guide in administering the equipment and subscribed services</li> <li>• Warranty: 3 years parts and services from date of acceptance and on-site service</li> </ul> |
| <b>07</b> | <b>Closed-circuit Television System (IP Camera)</b>   |



Minimum Technical Specifications

- IP Cameras
- Indoor Dome Fixed Focal Network Camera:
- Outdoor Bullet Fixed Focal Network Camera:
  - Image Sensor: 1/3 " progressive Scan CMOS
  - Min. Illumination (lux):Color: 0.07 @ f/1.2 B/W:0 with IR
  - Lens:2.8 mm - 4 mm @ f/2.0 (4 mm option)
  - BLC / WDR: Digital
  - IR Range: 30 meters
  - Video Compression: H.264/MJPEG
  - Max. Image Resolution (pixels): 1920 x 1080
  - Frame Rate(fps): 25 @ 1920 x 1080, 1280 x 960, 1280 x 720
  - Multi-streaming: Dual
- Network Video Recorder:
  - Video Compression: H.264
  - HDMI/VGA Output: 1920 x 1080/ 1920 x 1080
  - IP Video Input: 16-ch IPC with integrated 16 port 802.3af and at PoE switch
  - USB: 1 USB 2.0; 1 USB 3.0
  - Internal SATA: 2 SATA interfaces
- Other Services / Labor must include:
  - Must perform a Site Survey
  - System design proposal and installation planning
  - Installation and Configuration Service
  - Must carry out a Test and Commission.
  - Scheduled Preventive Maintenance and servicing repair must be carried out by contractor's client assigned personnel
  - Any on-site maintenance the client shall receive in writing, email or documentation about the said activity with on-site assigned DepEd personnel signature.
  - Must conduct Product Training/ Knowledge Transfer.
  - Must provide detailed and reliable Documentation Manual.

**08**

**Uninterruptible Power Supply (UPS)**

Minimum Technical Specifications

- Brand New
- Output power capacity: 390Watts / 620VAMax
- Configurable Power: 390Watts / 620VA
- Nominal Output Voltage: 230V
- Output Frequency (sync to mains) : 50/60Hz +/- 3 Hz
- Nominal Input Voltage: 230V
- Input frequency: 50/60 Hz +/- 3 Hz
- Input voltage range for main operations : 195 - 265V



|           |   |
|-----------|---|
|           | <ul style="list-style-type: none"> <li>● Typical recharge time : 5hour(s)</li> <li>● Surge energy rating : 320Joules</li> <li>● Warranty: Three (3) years on battery, parts and service</li> </ul>  |
| <b>09</b> | <p><b>Door Access System (Biometrics, Face and RFID Reader)</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>● Display 3-inch Touch Screen</li> <li>● Face Capacity 1,500 (1:N)</li> <li>● Fingerprint Capacity 2,000</li> <li>● ID Card Capacity(optional) 10,000</li> <li>● Log Capacity 100,000</li> <li>● Camera High Resolution Infrared Camera</li> <li>● Communication TCP/IP, RS232/485, USB-host</li> <li>● Access Control Interface for 3rd party electric lock, door sensor, exit button, alarm, wired doorbell.</li> <li>● Anti-pass back Function.</li> <li>● Wiegand Signal Input &amp; Output.</li> <li>● Standard Access Control Function: Time Zone, Group, Multi-identification Duress mode, Anti-pass back, Tamper alarm</li> <li>● Optional Functions ID card, Mifare Card.</li> <li>● Power Supply 12V DC.</li> <li>● Operating Temperature 0 - 45 °C</li> <li>● Operating Humidity 20% -80%</li> <li>● Dimension(L×H×D) mm 209.4×87.5×91.6</li> <li>● Gross Weight 0.87kg</li> <li>● Services must include: <ul style="list-style-type: none"> <li>○ Installation and Configuration Service</li> <li>○ Must carry out a Test and Commission.</li> <li>○ Must conduct Product Training/ Knowledge Transfer</li> <li>○ Must provide detailed and reliable Documentation Manual.</li> </ul> </li> </ul> |
| <b>10</b> | <p><b>Fire Suppression (FM 200)</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>● Fully self-contained fire detection &amp; suppression system</li> <li>● Additional environmental control capabilities</li> <li>● Compact 2U x 19" chassis mounting</li> <li>● Local/remote audio/visual condition monitoring &amp; control</li> <li>● Monitored alarm/fault circuits</li> <li>● Visual alarm &amp; fault status indications</li> <li>● Point-type or air sampling smoke detection</li> <li>● Single or coincident alarm</li> <li>● Choice of gaseous extinguishant types</li> <li>● Selectable gas release delay</li> <li>● 24-hour battery back-up</li> <li>● Fan/power shutdown control</li> <li>● IT/BMS data output</li> </ul>  |



|           |  |
|-----------|--|
|           | <ul style="list-style-type: none"> <li>● EMC tested/CE mark tested</li> </ul>  |
| <b>11</b> | <p><b>Air- Conditioning Unit</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>● Brand New</li> <li>● Aircon Type: Split</li> <li>● Cooling Capacity (HP): 2.5HP</li> <li>● Inverter Technology</li> <li>● Energy Efficiency Ratio Rating (ERR): 11.7</li> <li>● Input Power: Single 230V/60Hz</li> <li>● Remote Controlled</li> <li>● Warranty: <ul style="list-style-type: none"> <li>○ Five (5) Year Warranty on Compressor;</li> <li>○ One (1) Year Warranty on Parts &amp; Labor/Service</li> </ul> </li> <li>● All accessories and works necessary to complete the installation and testing will be included.</li> <li>● Dismantling of existing / old units are also included.</li> <li>● Must have User Manual.</li> </ul> |
| <b>12</b> | <p><b>Stand Alone FDAS with Notification</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>● Unique X-Profile detection chamber controlled by bespoke software.</li> <li>● TSE-Technology (Thermal Stability Enhancement) provides stability across a range of environmental conditions, reducing nuisance alarms whilst enhancing detection.</li> <li>● ALARM SILENCE BUTTON. Ideal in non-emergency situations (nuisance alarms).</li> <li>● SILENCE LOW BATTERY WARNING chirp for up to 10 hours. Maintains continuous protection during sleeping hours</li> <li>● TEST BUTTON. Extra-large for ease of use.</li> <li>● Must provide detailed and reliable User Manual</li> </ul>   |
| <b>13</b> | <p><b>Data Cabinet</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>● Height: 18U</li> <li>● Width: 600mm</li> <li>● Depth: 1070mm</li> <li>● Net Weight: 65kg</li> <li>● Mounting Depth: 165mm</li> <li>● Weight Capacity (static load): 400 kg</li> <li>● Weight Capacity (dynamic load): 400 kg</li> <li>● Must have integrated electrical grounding.</li> <li>● Must have Keyed-alike doors and side panels</li> <li>● Must have easily removable cable access roof</li> <li>● Must have cable access openings with pre-installed brushes</li> </ul>  |



|           |   |
|-----------|---|
|           | <ul style="list-style-type: none"> <li>• Must have half-height side panels and option with brush strips</li> <li>• Warranty of five (5) years repair or replace</li> </ul>  |
| <b>14</b> | <p><b>Wall Mounted Rack</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>• 1 feet height</li> <li>• Wall mounted rack</li> <li>• bare structure with four (4) standard holes vertical mounting rails</li> <li>• 2-vented detachable side panels w/ lock and louvers</li> <li>• vented detachable flexi glass front door w/ lock,</li> <li>• Electrical power 4 outlets 3 Prong 220V Power strip</li> <li>• Clip nuts included</li> </ul>   |
| <b>15</b> | <p><b>Rack power distribution units (PDUs)</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <ul style="list-style-type: none"> <li>• Input Current: 16A</li> <li>• Input frequency: 50/60 Hz</li> <li>• Input Voltage: 100 - 240VAC</li> </ul>  |
| <b>16</b> | <p><b>Structured Cabling</b></p> <p style="text-align: center;"><u>Minimum Technical Specifications</u></p> <p><b><u>Network Cable – CAT6 UTP Cable</u></b></p> <ul style="list-style-type: none"> <li>• The copper cable shall either be 4-pair 100 Balanced Twisted Pair cable (UTP) with rip cord and dielectric central isolation member</li> <li>• Shall comply to the following standards: <ul style="list-style-type: none"> <li>○ ANSI/TIA/EIA-568B.2-1</li> <li>○ ISO/IEC 11801:2002 2nd Edition (Category 6)</li> <li>○ IEC 61156-5 1st Edition</li> <li>○ LSOH: IEC 332: Part 1, IEC 754 and IEC 1034</li> <li>○ UL CM11</li> </ul> </li> <li>• Minimum bend radius 1.00”</li> <li>• 100 % of final production reels are tested to 550 MHz</li> <li>• Must be 0.57mm (0.23 in) (24AWG) solid bare copper</li> <li>• The maximum jacket diameter (for 4-pair UTP cable) shall not exceed 6.35 mm (0.25 in). sequential meter markings on jackets are appropriate for the environment in which it is installed.</li> <li>• Be made by an ISO 9001 Certified Manufacturer</li> </ul> <p><b><u>Cat6 Information Outlet/Modular Jacks</u></b></p> |



- All information outlets for 100 22-26 AWG copper cable shall:
  - Utilize full retention force technology with optimized pair balance design and linear crosstalk response to address applications up to 250 MHz.
  - Be available in color blue for voice and yellow for data.
  - Be backwards compatible to allow lower performing categories of cables or connecting hardware to operate to their full capacity.
  - Allow for a minimum of 200 re-terminations without signal degradation below standards compliance limit.
  - Support industry standards for T568A or T568B wiring options on each individual outlet.
  - Be constructed of high impact, flame-retardant thermoplastic.
  - Be made by an ISO 9001 Certified Manufacturer.
  
- Electrical Specifications:
  - ANSI/TIA/EIA-568-B and ISO/IEC 11801 category 6 compliant.
  - Be UL VERIFIED for TIA/EIA category 6 electrical performance.
  - Be UL LISTED 1863 and cUL C22.2 approved.

**Cat6 Patch panel, 24 ports**

- The termination panels shall support the appropriate Category 6 applications and facilitate cross connection and interconnection using modular patch cords. The panels shall be sized to fit an EIA standard, 19 inch relay rack, or be capable of mounting to a wall.
- The panel shall:
  - Be made of black anodized aluminum, in 16-, 24-, 32-, 48- and 96-port configurations.
  - Accommodate at least 24 ports for each rack mount space (1rms = 44.5 mm [1.75 in.]).
  - Have circuit boards tested in both directions as required by ANSI/TIA/EIA-568-B and ISO/IEC 11801.
  - Utilizes full retention force technology with optimized pair balance design and linear crosstalk response to address applications up to 250 MHz.
  - Have termination accomplished with a single conductor impact tool.
  - Be backwards compatible to allow lower performing categories of cables or connecting hardware to operate to their full capacity.
  - Have rear protective strain relief caps with side or rear entry, which can be installed onto cable before or after termination.





- Support industry standards for T568A or T568B wiring options on each individual outlet.
- Allow for a minimum of 200 re-terminations without signal degradation below standards compliance limit.
- Have modular ports compliant with FCC CFR 47 part 68 subpart F and IEC 60603-7 with 50 microinches of gold plating over nickel contacts.
- Be fully enclosed front and rear for physical protection of printed circuit boards.
- Have a rear cable management bar for strain relief.
- Have port identification numbers on both the front and rear of the panel.
- Have an optional adhesive circuit identification and color coding designation strips provided with the panel.
- Provide self-adhesive, clear label holders and white designation labels with the panel, with optional color labels available.
- Be made by an ISO 9001
- Electrical Specifications:
  - ANSI/TIA/EIA-568-B and ISO/IEC 11801 category 6 compliant.
  - Be currently pending UL VERIFIED for TIA/EIA category 6 electrical performance.
  - B UL LISTED 1863 and cUL C22.2 approved.

**Faceplates, Duplex**

- All faceplates shall:
  - Be applicable copper applications.
  - Have written on designation labels for circuit identification together with a clear plastic cover.
  - Be available in single-gang and double-gang configurations.
  - Have optional modular furniture adapters available.
  - Have stainless steel options available.
  - Have surface mount boxes and standoff rings available for both single and double gang faceplates.
  - Be made by an ISO 9001 Certified Manufacturer.
  - Color: White

**Cat6 Patch Cord**

- 2.0 meters at work area
  - meters at rack area
- Factory Machine Made and Injection Molded
- Snagless Boot Design for easy handling
- CAT6 550Mhz rated
- UTP Unshielded Twisted Pair
- CM Type PVC Jacket



- 24AWG 4 Pair Stranded Core Copper
- Gold Plated Contacts
- UL/ETL listed and RoHS Compliant

**Conduit**

- PVC pipe. Must conform to the percent (%) fill as per standard.

**Services**

- Must include:
  - Site Survey
  - Physical Installation
  - Testing
  - Labeling/Tagging

