



**NATIONAL INSTITUTE FOR EMPOWERMENT OF PERSONS WITH MULTIPLE
DISABILITIES (Divyangjan)**

(Department of Empowerment of Persons with Disability, Ministry of Social Justice & Empowerment, Govt. of India)

East coast Road, Muttukadu, Kovalam (post) Chennai-603 112

Website: www.niepmd.tn.nic.in E-mail: niepmd@gmail.com Phone: 044-27472113, 27472046.

**TENDER DOCUMENT: ESTABLISHMENT OF CAMPUS WIDE LAN NETWORK IN NIEPMD,
CHENNAI**
FILE NO. NIEPMD/PUR 4 (73)/2023-24

| | | |
|---|------------------|------------|
| Last date for E-bidding | - 02.00 PM. on | 29-06-2023 |
| Tender fee | - NIL | |
| EMD Amount | - Rs. 5,00,000/- | |
| Date & Time of Opening of Tender Documents | - 04.00 A.M. on | 30-06-2023 |

Tele: 044-27472046/27472113 Telefax: 044-27472389 Email: niepmd@gmail.com

Sd/-
Deputy Registrar (Admin.)

Sd/-
Director



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FILE NO. NIEPMD/PUR 4 (73)/2023-24

E- Tender is invited through NIC e-procurement portal URL <http://eprocure.gov.in/eprocure/app> in two bid system from reputed System Integrators having proven track record in implementing campus wide local Area Network (LAN). The bidder should have successfully executed work of Supply, Installation & Commissioning of Local Area Network (LAN) / WAN / WLAN / Passive Networks in a single order / agreement for a value not less than Rs.80,00,000/-(Rupees Eighty Lakhs Only) (or) two orders / agreements for values not less than Rs.50,00,000/-(Rupees Fifty Lakhs Only) (or) three orders / agreements for values not less than Rs.40,00,000/-(Rupees Forty Lakhs Only), in the last 3 years as on the scheduled date of tender opening. The applying firm/company must have an annual turnover of last 03 financial years not less than 1.8 crores (i.e. FYs 2019-20, 2020-21 & 2021-22). The tender document can also be downloaded from over website www.niepmd.tn.nic.in.

| | | |
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| Last date for E-bidding | - 02.00 PM. on | 29-06-2023 |
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National Institute for Empowerment of Persons with Multiple Disabilities here after called NIEPMD is a Central Autonomous Body under the Ministry of Social Justice & Empowerment, Government of India. The Institute intends to establish a campus wide local area network (LAN) in its Chennai campus. This campus area network would be interconnecting buildings, including Programming & Service Block, Special Education Programme Block, New building, Prosthetic unit, Skills Training block, hostels, guest house, and Director's bungalow.

The materials to be supplied, installed and commissioned as per the specifications mentioned in the scope of work provided in Tender Notice. Interested bidders can apply on line through NIC e-procurement portal URL <http://eprocure.gov.in/eprocure/app>". The tender can also be downloaded from institute's website www.niepmd.tn.nic.in.

Sd/-
Deputy Registrar (Admin)

Sd/-
Director

Date: 08th Jun 2023



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GENERAL TERMS & CONDITIONS:

1. **Tender will be available on NIC e-procurement portal URL <http://eprocure.gov.in/eprocure/app> up to 29th June 2023.**
2. EMD amount of Rs. 5,00,000/- should be paid online through NEFT or RTGS in NIEPMD account and payment receipt to be uploaded with tender document. Bids without EMD amount shall not be considered for further evaluation Tender received without EMD or lesser amounts will be summarily rejected. No further correspondence will be accepted on the subject.

(Micro, Small and Medium Enterprises (MSMEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) are exempt from submission of EMD. MSME certificate should be submitted to avail this exemption.). The MSME certificate should be in the same field.
3. The tender shall remain open for acceptance for 60 days from the date of opening of tenders by National Institute for the Empowerment of Persons with Multiple Disabilities (NIEPMD). The time limit for acceptance may be extended by NIEPMD at its discretion for such further period, as it may notify
4. Technical Bid shall consist of EMD for the required amount as per the tender documents and technical details: Leaflets / information brochures (if any) showing the technical and general details of the material offered shall also be enclosed with the technical bid, scanned copy if any, from tender specifications, clause-wise and commercial terms and conditions should be clearly mentioned in the sheet as specified. The tender form and all annexures and attachments thereto shall be submitted with this bid with each page being consecutively numbered and duly signed by the bidder along with seal of the Contractor.
5. Restrictions on Public procurement from countries which share a land border with India on grounds of Defense of India will be applicable with this tender. Ref: F. No.6/18/2019-PPD Min. of Finance, Dept. of exp. PPD dated 23rd July 2020 (Order No. 1&2) and any other Govt. orders on public procurements.
6. No alteration or amendments shall be allowed after submission and opening of the tenders.
7. The financial bids of technically qualified bidders only will be opened. The time and date of opening of price bids shall be intimated to the technically qualified bidders through e-procurement online.
8. The tender will be awarded to the technically qualified bidder with the lowest total cost (both supply and installation together).
9. Bidder must submit a certificate of undertaking that he is in position to supply the materials with a credit of 30 days after clear receipt of materials, installation and commissioning of materials at site.
10. The Director, NIEPMD, reserves all rights to reject any tender including of those tenderers who fail to comply with the instructions without assigning any reason what so ever and does not bind itself to accept the lowest or any specific tender. NIEPMD can also relax the conditions of the tender at the discretion of the competent authority. The decision of Director, NIEPMD in this regard shall be final and binding.
11. In case of any dispute arising with regards to this tender or its conclusion, the decision of the Director NIEPMD shall be final and subject to Chennai Jurisdiction.
12. The tendered work if awarded, is not transferable.
13. Tender not complying with the above conditions are liable to be rejected without any further reference.

DEFINITION

- a) The term Institute shall mean NIEPMD, Chennai.
- b) The term Bidder shall mean the bidder selected by the Institute for the supply of materials.



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SCOPE OF WORK

Name of the work:

Establishment of campus area network in NIEPMD interconnecting buildings, including Programming & Service Block, Special Education Programme Block, New building, Prosthetic unit, Skills Training block, hostels, guest house, and Director's bungalow.

Completion period:

Within 90 days from the date of LOA / Purchase Order.

Scope of Supply:

1. The Bidder has to supply all the materials listed in the Bill of materials (Annexure - I) as per the technical specification (Annexure - II) for the establishment of campus area network in NIEPMD interconnecting buildings, including Programming & Service Block, Special Education Programme Block, New building, Prosthetic unit, Skills Training block, hostels, guest house, and Director's bungalow.
2. Installation and testing of optical fiber cables, UTP cables and network components required for the LAN formation as per the bill of material enclosed in the Bill of materials (Annexure - I).
3. The installation of cables and other network components should be as per the layout approved by NIEPMD. The installation should be as per the TIA standard and all components should be labelled as per the standard.
4. In order to avoid usage of network components with sub-standard quality, the brand or make of network components shall be any one make as mentioned against each item in the bill of materials Annexure - I may be supplied.
5. The bidder should configure the Firewall and Access point rules as per the instructions and requirements of NIEPMD.

Laying of OFC:

6. Excavation of trenches including clearing of roots of trees etc., up to a depth 1M and width of 0.3 M with Back filling and ramming of the soil in trenches after cable laying/placing HDPE pipe and consolidation of soil as well as disposal of the excess soil. Back filling and ramming of the soil in trenches after cable laying/placing HDPE pipe and consolidation of soil as well as disposal of the excess soil.

OFC through HDPE Pipe:

7. HDPE Pipe should be laid at approx. 1 M below the ground level under the earth, wherever it runs through earth. HDPE pipes should be joined with proper couplers which, and any other associated accessory required for the purpose, should be supplied with the cables. The ends of HDPE pipes should also be properly sealed. The installation/maintenance of HDPE pipes should be done using proper tools. Chambers to be made at the junctions.
8. Wherever Road crossing is needed GI Conduits needs to be used.

Wall Clamping:

9. Proper Clamping should be provided wherever required, for the cable running on the wall and the cable should run through HDPE pipe or conduit. Clamping should be made at every 1 meter of distance by "U" clamp HDPE pipe at duct /trench inserting point should be properly fixed/ grouted.



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Route Markers /Cable Markers:

10. Clearly visible cable Markers should be placed and suitably fixed along the underground Cable route at an approx. distance of 25m.
11. Dressing up of UTP Cables shall be done where they run as bunch.

Documentation:

12. The bidder should submit a Blue Print & CAD after completion of installation indicating the layout of cabling network of OFC and structured Cabling positioning and installation of various devices like racks, switches, IO boxes, power points etc. for the locations as specified. Separate drawings for each floors of the individual buildings and an overall network drawing needs to be submitted.

Feruling and Labelling:

13. The bidder should make sure that all the cables are properly ferruled with identification numbers. Panduit labels to be used for labelling the patch cords. Faceplates to have neatly printed labels.

Firewall Subscription:

14. The bidder shall supply Standard Firewall with 1 year subscription. From second year onwards the subscription renewal will be paid by NIEPMD on actual basis upon raising separate invoice for the same.

Warranty:

15. One year OEM warranty to be provided for Firewall (S.no: 1), Passive and Rack components (S.no: 2 to 14) and Switches (S.no: 15 to 17) in the bill of materials (Annexure - I).
16. The bidder shall provide additional 2 years warranty over and above the 1 year for the products. (This will start after expiry of Initial warranty period. Initial warranty period will start after successful commissioning and handing over of project).
17. The bidder shall provide 3-year standard warranty for the Network installation from the date of commissioning of the LAN Network.
18. The complete system including of hardware, networking, any software installed, OFC, UTP, STP, Power cables, hubs, switches etc. will be under comprehensive maintenance with bidder for three years after successful completion of installation, Commissioning and date of handing over the site to institute. The defect liability period will be counted from date of handing over the completed project to NIEPMD and issuing project completion certificate to 03 Years (36 Months).



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TENDER SUBMISSION PROCESS

Interested bidder may submit their quotes by giving all the necessary documents in English or Hindi as specified. **The tender must be submitted online through Central Public Procurement Portal e-procurement application only through URL: <http://eprocure.gov.in/eprocure/app> only.** No manual bids will be entertained under any circumstances.

The Tender document attached must be direct, concise, and complete and arranged in an organized and structured manner.

To participate in online bidding process, Bidders must procure a Digital Signature Certificate as per Information Technology Act-2000 using which they can digitally sign and encrypt their electronic bids. Bidders can procure the same from any CCA approved certifying agency, i.e. TCS, Safecrypt, Ncode, eMudhra etc. Bidders who already have a valid Digital Signature Certificate (DSC) need not procure a new DSC.

NIEPMD will not be responsible for delay in online submission due to any reason. For this, bidders are requested to upload the complete bid proposal well advance in time so as to avoid issues like slow speed, choking of web site due to heavy load or any other unforeseen problems.

Bidders are also advised to refer visit any local NIC office or call CPPP 24x7 toll free number 1800-3070-223 or mobile No. 07878007972, 07878007973 for further details about the e-tendering / bidding process.

Procedure for e-payment:

EMD of Rs. 5,00,000 should be paid online through NEFT or RTGS in NIEPMD account and payment receipt to be uploaded with technical bid. Technical bids without EMD shall not be considered for further evaluation. NIEPMD Bank details are as follows:

A/C No. 761297290

Type of Account: Saving Bank

Name of Bank: Indian Bank, Kovalam Branch

IFS Code: IDIB000K122

Branch Code: 01176

Caution: Please ensure that you need to mention the correct beneficiary account number and IFSC code as mentioned above while making payment via RTGS / NEFT. In the event of funds remitted to wrong beneficiary account number, NIEPMD, Chennai or its Bank would not responsible for the same.

Micro, Small and Medium Enterprises (MSMEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) are exempt from submission of EMD and Tender fee. MSME certificate should be submitted to avail this exemption. The MSME certificate should be in the same field.



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Special Terms & Conditions:

1. The bidder should have successfully executed work of Supply, Installation & Commissioning of Local Area Network (LAN) / WAN / WLAN / Passive Networks in a single order / agreement for a value not less than Rs.80,00,000/-(Rupees Eighty Lakhs Only) (or) two orders / agreements for values not less than Rs.50,00,000/-(Rupees Fifty Lakhs Only) (or) three orders / agreements for values not less than Rs.40,00,000/-(Rupees Forty Lakhs Only), in the last 3 years as on the scheduled date of tender opening. Proof to be uploaded in the Technical Bid.
2. The applying Firm/ Company must have an annual turnover of last 03 financial years not less than 1.8 crores per year. (i.e. FYs 2019-20, 2020-21 & 2021-22). Proof of certificate for turnover is required to be uploaded with the tender (CA attested certificate and copy of the balance sheet with profit and loss account should be uploaded with technical bid.)
3. The applying firm must be registered with GST and the supporting proof for the same is to be uploaded. Institute GSTIN 33AABTN4536B1Z1 should be used for invoicing purpose.
4. The bidder shall submit the Manufacture Authorization Form (MAF) for Firewall (S.no: 1), Passive and Rack components (S.no: 2 to 14) and Switches (S.no: 15 to 17) only as enclosed in the bill of materials (Annexure - I). MAF should be provided only in the attached Format in Annexure - III in the OEM's letter head. Any changes to the format will be considered invalid. MAF should be provided separately for Firewall, Switch, Passive and Rack and if not provided for any one of the 4 component types, then the bid will be summarily rejected.
5. Manufacturer Authorisation Form to be submitted for the bid published with OEM Designation, Phone no and address details. Submitted MAF will be validated with the OEM for its genuineness.
6. The bidder must quote for all the items/services mentioned in the tender, Part/incomplete quotes shall be summarily rejected.
7. Bidder should have local presence in Chennai /Tamil Nadu & Document proof for 3 years presence in Tamil Nadu to provide immediate on-call support in case of any issues. Document proof to be attached. The Chennai / Tamilnadu address will be verified by the institute for its correctness for technical qualification.
8. Switch, Passive and Rack OEMs should have ISO 9001:2008 & ISO 14001:2004. Document proof to be attached.
9. Firewall, Switch, Passive and Rack OEMs should have Toll-Free number to provide immediate on-call support in case of any issues to be explicitly mentioned in MAF.
10. Firewall, Switch, Passive and Rack OEMs should have a local Service Centre presence in Tamil Nadu for at least 3 years to provide immediate on-call support in case of any issues. Document proof for 3 years presence in Tamil Nadu to be attached. Details of service centres to be attached with technical bid.
11. All switching components, Passive components and Racks preferred to be from single OEM for seamless integration.
12. The bidder must specify item-wise compliance to the technical specifications as mentioned in the technical specification (Annexure - II). The make of the quoted items must be clearly specified.
13. The bidder should depute network specialist for the Installation, Commissioning and configuration of the hardware equipment such as Switches as per NIEPMD requirements. The bidder should give comprehensive training on site to a group of NIEPMD staffs explaining details of the equipment operation, technical aspects, working and other necessary information to run, operate and troubleshooting.
14. Bidder should supply the equipment within the committed period from the date of issuing order.



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15. Any equipment found defective will be rejected and the same shall be replaced at free of cost by the supplier. In case of any dispute, NIEPMD decision shall be final.
16. Special Tools/equipment required for successful installation & commissioning of the LAN Network system shall be in the scope of the bidder.
17. The Contractor should observe all safety rules and regulations in force and ensure that all necessary safety precautions are followed up strictly for the safety of workers engaged in the work.
18. The Contractor should engage adequate man power having appropriate skills with the approval of the NIEPMD officials to carry out and complete the works. Any extra time / over time engagement of the man power shall be the contractor's responsibility.
19. All pages of the tender papers should be signed, stamped and dated including the annexures and submitted online through scanned copies.
20. The tender received through fax / e-mail or received by post etc. will not be accepted. The parties have to ensure the uploading of bids well in time.
21. The total cost quoted should be exclusive of taxes. Applicable taxes to be mentioned separately. Tax applicable at the time of invoice will be paid.
22. The price quoted should be valid for Contract period. NIEPMD, may increase or decrease the estimated Quantity and scope of work based of its requirement. .
23. NIEPMD reserves the right to accept / reject any bidder and to annul the bidding process of any or all bids at any time prior to award of contract without thereby incurring any liability to the affected bidders.
24. The tender will be appraised by committee formed by NIEPMD.
25. The successful bidder will be required to execute a performance security. A sum of Rs.5,00,000/- (Rupees Five Lakhs Only) will have to be deposited in the form of Bank Guarantee/Demand Draft/NEFT/RTGS on award of the tender by NIEPMD, Chennai as performance security for a period of Defect liability period + 02 Months).
26. The quality should be maintained strictly. Any deviations in the materials supplied after inspection the bidder is liable to be debarred/blacklisted from future participation in NIEPMD tenders.
27. The supply and installation of products shall be carried out strictly in accordance with the terms & conditions and specifications as stipulated in the tender, in the approved workman like manner and as per standard practice. Materials supplied shall be of high quality.
28. Payment will be released within thirty working days after the successful installation, Commissioning & handing over the project to NIEPMD, Chennai campus and certification by the concerned coordinator at NIEPMD and no advance payment will be entertained.
29. The statutory deductions like TDS, WCT, etc., as per standard norms will be made from the bills.
30. NIEPMD shall without prejudice to its other remedies under the contract, deduct from the Contract price, as Liquidated Damages a sum equivalent to 2.5% of the price of delayed Goods or unperformed services for delay of each day until actual delivery or performance, up to a maximum deduction of 20% of the contract price. Once the maximum is reached, NIEPMD may consider termination of the contract and can forfeit the Performance Guarantee amount.

We agree to all terms and conditions as mentioned above including the validity of the offer.

Name, Designation & Signature of the bidder with the seal



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TECHNICAL BID

(To be uploaded)

1. Name and address of the bidder:

a) Name of the bidder :

b) Legal Status : Limited / Private Limited / Partnership / Sole proprietor / Others
(Strike-off not applicable; others please specify)

c) Full postal address :

d) Email address :

e) Contact number :

f) Website :

2. Total annual turn-over (value in Rupees) (Last three FYs.):

(Copy of Balance Sheets Audit Statement / IT returns, etc. to be attached as proof)

| Financial Year | Annual Turn-over (in lacs) |
|-----------------------|---------------------------------------|
| FY2019-20 | |
| FY2020-21 | |
| FY2021-22 | |

3. Past supply details (as per clause 1 of Special Terms & Conditions):

(Copy of Purchase order/Work order and Completion/Experience certificate to be attached as proof)

| Customer Name | Order Value | Year |
|----------------------|--------------------|-------------|
| | | |
| | | |
| | | |



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FINANCIAL BID

(No price to be filled here for reference purpose only.
BOQ available in excel sheet in e-tender to be filled up carefully and uploaded)

ESTABLISHMENT OF CAMPUS WIDE LAN NETWORK IN NIEPMD, CHENNAI

| Structured Cabling (LAN) Supply | | | | |
|---------------------------------|---|-----------|------|--------|
| S. No | Description | Qty. | Rate | Amount |
| 1 | Standard Firewall with Protection - 1 Year as per technical specification | 1 Nos | | |
| 2 | Category-6 4 pair UTP Cable 305m as per technical specification | 150 Box | | |
| 3 | Category 6 Information outlet for Field Side as per technical specification | 920 Nos | | |
| 4 | Category 6 UTP Patch Cord 1 Meter as per technical specification | 920 Nos | | |
| 5 | Category 6 UTP Patch Cord 2 Meter as per technical specification | 920 Nos | | |
| 6 | Category 6 24 Port Unloaded Patch Panel as per technical specification | 45 Nos | | |
| 7 | Category 6 Information outlet for Rack Side as per technical specification | 920 Nos | | |
| 8 | Dual Face Plate With Back Box as per technical specification | 460 Nos | | |
| 9 | 6 Core SM Outdoor Fiber Optic Cable as per technical specification | 3250 Mtrs | | |
| 10 | 12 port LIU LC - LC as per technical specification | 21 Nos | | |
| 11 | SM 2mtr LC to LC fiber patch cable as per technical specification | 216 Nos | | |
| 12 | 42U Rack as per technical specification | 1 Nos | | |
| 13 | 12U Rack as per technical specification | 9 Nos | | |

No price to be filled up here. Price to be filled up in excel BOQ available with e-tender



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| | | | |
|----|---|-----------|---|
| 14 | 9U Rack as per technical specification | 7 Nos | No price to be filled up here. Price to be filled up in excel BOQ available with e- tender |
| 15 | 24 Port Gigabit Switch With 4 SFP Slots as per technical specification | 41 Nos | |
| 16 | 24 Port Gigabit SFP Module Switch as per technical specification | 1 Nos | |
| 17 | 8 Port Gigabit Switch With SFP Slots as per technical specification | 1 Nos | |
| 18 | 24 Port Gigabit POE Switch With 4 SFP Slots as per technical specification | 2 Nos | |
| 19 | 8 Port Gigabit POE Switch With 2 SFP Slots as per technical specification | 9 Nos | |
| 20 | Single Mode SFP Module as per technical specification | 216 Nos | |
| 21 | 25mm HDPE pipe for encapsulating the fibre cable | 2500 Mtrs | |
| 22 | 25mm GI conduit for encapsulating the fibre cable while crossing Road | 150 Mtrs | |
| 23 | 25mm PVC pipe with required bends and accessories | 3600 Mtrs | |
| 24 | 32mm PVC pipe with required bends and accessories | 2500 Mtrs | |
| 25 | 32mm casing capping with required accessories | 600 Mtrs | |
| 26 | 25mm casing capping with required accessories | 1200 Mtrs | |
| 27 | 0.6 KVA UPS | 16 Nos | |
| 28 | Access Point as per technical specification | 49 Nos | |
| 29 | RCC Chamber with cover (2 feet diameter and 2 feet depth with 40mm thickness) | 10 Nos | |
| 30 | OFC Route Marker | 100 Nos | |



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| Installation & Commissioning Charges | | | | |
|--------------------------------------|--|-----------|------|--------|
| S.No | Description | Qty. | Rate | Amount |
| 1 | Firewall Installation | 1 Nos | | |
| 2 | Category 6 4 pair UTP Cable 305m Laying | 150 Box | | |
| 3 | Category 6 Information Outlet for Field Side Fixing | 920 Nos | | |
| 4 | Category 6 24 Port Patch Panel Termination | 45 Nos | | |
| 5 | Dual Face Plate With Back Box Fixing | 460 Nos | | |
| 6 | 42U Rack Fixing | 1 Nos | | |
| 7 | 12U Rack Fixing | 9 Nos | | |
| 8 | 9U Rack Fixing | 7 Nos | | |
| 9 | 6 Core Single Mode Outdoor Fiber Optic Cable Laying | 3250 Mtrs | | |
| 10 | 12 Port LIU OFC Splicing | 21 Nos | | |
| 11 | RCC Chamber Digging and Fixing | 10 Nos | | |
| 12 | OFC Route Marker Fixing | 100 Nos | | |
| 13 | Road Cutting (Depth 1m; Width 0.3m) | 150 Mtrs | | |
| 14 | Soft Soil Digging (Depth 1m; Width 0.3m) | 2400 Mtrs | | |
| 15 | 24 Port Gigabit Switch With 4 SFP Slots Installation | 41 Nos | | |
| 16 | 24 Port Gigabit SFP Module Switch Installation | 1 Nos | | |
| 17 | 8 Port Gigabit Switch With SFP Slots Installation | 1 Nos | | |
| 18 | 24 Port Gigabit POE Switch With 4 SFP Slots Installation | 2 Nos | | |
| 19 | 8 Port Gigabit POE Switch With 2 SFP Slots Installation | 9 Nos | | |

No price to be filled up here. Price to be filled up in excel BOQ available with e- tender



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| | | | |
|----|--|-----------|---|
| 20 | Single Mode SFP Module Installation | 216 Nos | No price to be filled up here. Price to be filled up in excel BOQ available with e- tender |
| 21 | 25mm HDPE pipe Laying | 2500 Mtrs | |
| 22 | 25mm GI Conduit Laying | 150 Mtrs | |
| 23 | 25mm PVC Pipe Laying | 3600 Mtrs | |
| 24 | 32mm PVC Pipe Laying | 2500 Mtrs | |
| 25 | 32mm Casing Capping Laying | 600 Mtrs | |
| 26 | 25mm Casing Capping Laying | 1200 Mtrs | |
| 27 | UPS Installation | 16 Nos | |
| 28 | Access Point Fixing and Installation | 49 Nos | |
| 29 | Project Testing, Management, Documentation (CAD Network drawing for each floor of individual buildings and for overall campus) | 1 LS | |

Signature and seal of the bidder



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CHECK LIST

The Technical Bid shall be summarily rejected, if these documents are not uploaded. Documents must be uploaded in following serial order only. All Documents must be signed and sealed by the Authorized person of the bidder.

| S. No. | Particulars | Type of document | Yes/No |
|--------|--|----------------------|--------|
| 1. | Signed and sealed copy of the TECHNICAL BID with Name, address & telephone number of the bidder (as mentioned in "TECHNICAL BID" section) | As per format | |
| 2. | Authorization letter with Name, designation, address & telephone number of the authorized person | Certification Letter | |
| 3. | Name, address & telephone number of Directors / Partners, e-mail address | Certification Letter | |
| 4. | Receipt for EMD payment of Rs. 5,00,000/- (Rupees Five Lakh Thousand Only) to be uploaded. (attach MSME certificate for exemption. MSME should be in same area). | Proof | |
| 5. | Firm / Company Registration certificate (Copy to be uploaded) | Proof | |
| 6. | Undertaking by the bidder to be uploaded stating that the firm / company has not been black listed by any Central Govt. / State Govt. / PSU agencies. | Undertaking Letter | |
| 7. | Undertaking by the bidder to be uploaded that they have read and understand all the term and conditions mentioned in the tender document. | Undertaking Letter | |
| 8. | Copy of appropriate PAN Card and GST Registration | Proof | |
| 9. | Undertaking to supply on credit of 30 days after clear receipt of materials. (Self-Certificate on company letter head to be uploaded) | Undertaking Letter | |
| 10. | Copy of Income Tax Return of the firm/company/agency (Individual in case sole proprietary firm) for last 03 financial years. | Proof | |
| 11. | Certified copies of balance sheets along with profit & loss account of the bidder in support of 3 years annual financial turnover, The applying Firm/ Company must | Proof | |



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| | | | |
|-----|---|----------------------|--|
| | have an annual turnover of last 03 financial years (Annually) not less than 1.8 crores (i.e. FY2019-20, FY2020-21, FY2021-22). | | |
| 12. | Copy of Purchase order/Work order and Completion/Experience certificate for Supply, Installation & Commissioning of Local Area Network (LAN) / WAN / WLAN / Passive Networks in a single order / agreement for a value not less than Rs.80,00,000/-(Rupees Eighty Lakhs Only) (or) two orders / agreements for values not less than Rs.50,00,000/-(Rupees Fifty Lakhs Only) (or) three orders / agreements for values not less than Rs.40,00,000/-(Rupees Forty Lakhs Only), in the last 3 years as on the scheduled date of tender opening | Proof | |
| 13. | Address of the office at Chennai / Tamilnadu | Proof | |
| 14. | Proof for Bidder's 3 years presence in Tamil Nadu | Proof | |
| 15. | Proof of OEMs service Centers in Chennai / Tamilnadu | Proof | |
| 16. | Manufacture Authorization Form (MAF) for <u>Firewall</u> strictly in the format mentioned in Annexure – III in OEM's letter head. (Any changes to the format will be considered invalid) | Certification Letter | |
| 17. | Manufacture Authorization Form (MAF) for <u>Passive components (CAT6 and Fiber related components)</u> strictly in the format mentioned in Annexure – III in OEM's letter head. (Any changes to the format will be considered invalid) | Certification Letter | |
| 18. | Manufacture Authorization Form (MAF) for <u>Racks</u> strictly in the format mentioned in Annexure – III in OEM's letter head. (Any changes to the format will be considered invalid) | Certification Letter | |
| 19. | Manufacture Authorization Form (MAF) for <u>Switches</u> strictly in the format mentioned in Annexure – III in OEM's letter head. (Any changes to the format will be considered invalid) | Certification Letter | |
| 20. | Provide proof for 3 years' Service center presence in Tamil Nadu for the Firewall, Switch, Passive and Rack OEMs (individually) | Proof | |
| 21. | Copy of ISO 9001:2008 & ISO 14001:2004 for the Switch, Passive and Rack OEMs (individually) | Proof | |



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| | | | |
|-----|--|--------------------------|--|
| 22. | Signed and sealed copy of the FINANCIAL BID (as mentioned in "FINANCIAL BID" section) | As per format | |
| 23. | Signed and sealed copy of the Technical Specification with compliance details filled for all the line items (as mentioned in Annexure - II section) | As per format | |
| 24. | Copy of NIT duly signed and stamped by the bidder on all pages must be uploaded as agreement of understanding of all the terms and conditions mentioned in NIT. | Signed & Sealed Document | |
| 25. | Any other document, information, declaration, or undertaking asked in NIT (Pl. read the NIT document carefully. Non submission of information asked in NIT may lead to rejection of bid.) | Proof | |
| 26. | Photocopy of valid NSIC/SSI/DGS&D/MSME/Make in India/Startup India Registration Certificate / Review Certificate to be uploaded in case of claiming Tender Fees, EMD exemption. (Original copies may be verified during technical evaluation.) | Proof | |



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ANNEXURE – I

| Bill of Materials | | | |
|---|--|-------------|------------|
| Structured Cabling (LAN) Supply | | | |
| S. No. | Description | Qty. | UOM |
| <i>* Technical specifications provided in Annexure II</i> | | | |
| Firewall | | | |
| 1 | Standard Firewall with Protection - 1 Year as per technical specification Make: Quick Heal, Cisco, Palo Alto, Juniper, Check Point | 1 | Nos |
| Passive and Rack components | | | |
| 2 | Category 6 4 pair UTP Cable 305m as per technical specification Make: D-Link, Commscope, Systimax, AMP, R&M | 150 | Box |
| 3 | Category 6 Information outlet for Field Side as per technical specification Make: D-Link, Commscope, Systimax, AMP, R&M | 920 | Nos |
| 4 | Category 6 UTP Patch Cord 1 Meter as per technical specification Make: D-Link, Commscope, Systimax, AMP, R&M | 920 | Nos |
| 5 | Category 6 UTP Patch Cord 2 Meter as per technical specification Make: D-Link, Commscope, Systimax, AMP, R&M | 920 | Nos |
| 6 | Category 6 24 Port Unloaded Patch Panel as per technical specification Make: D-Link, Commscope, Systimax, AMP, R&M | 45 | Nos |
| 7 | Category 6 Information outlet for Rack Side as per technical specification Make: D-Link, Commscope, Systimax, AMP, R&M | 920 | Nos |
| 8 | Dual Face Plate With Back Box as per technical specification Make: D-Link, Commscope, Systimax, AMP, R&M | 460 | Nos |
| 9 | 6 Core SM Outdoor Fiber Optic Cable as per technical specification Make: D-Link, Commscope, Systimax, AMP, R&M | 3250 | Mtrs |
| 10 | 12 port LIU LC - LC as per technical specification Make: D-Link, Commscope, Systimax, AMP, R&M | 21 | Nos |
| 11 | SM 2mtr LC to LC fiber patch cable as per technical specification Make: D-Link, Commscope, Systimax, AMP, R&M | 216 | Nos |
| 12 | 42U Rack as per technical specification Make: D-Link, Netrack, APC, President, Valrack | 1 | Nos |
| 13 | 12U Rack as per technical specification Make: D-Link, Netrack, APC, President, Valrack | 9 | Nos |
| 14 | 9U Rack as per technical specification Make: D-Link, Netrack, APC, President, Valrack | 7 | Nos |



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| Switches | | | |
|-------------------------|---|------|------|
| 15 | 24 Port Gigabit Switch With 4 SFP Slots as per technical specification Make: D-Link, Aruba, Cisco, Juniper, Linksys | 41 | Nos |
| 16 | 24 Port Gigabit SFP Module Switch as per technical specification Make: D-Link, Aruba, Cisco, Juniper, Linksys | 1 | Nos |
| 17 | 8 Port Gigabit Switch With SFP Slots as per technical specification Make: D-Link, Aruba, Cisco, Juniper, Linksys | 1 | Nos |
| 18 | 24 Port Gigabit POE Switch With 4 SFP Slots as per technical specification Make: D-Link, Aruba, Cisco, Juniper, Linksys | 2 | Nos |
| 19 | 8 Port Gigabit POE Switch With 2 SFP Slots as per technical specification Make: D-Link, Aruba, Cisco, Juniper, Linksys | 9 | Nos |
| 20 | Single Mode SFP Module as per technical specification Make: D-Link, Aruba, Cisco, Juniper, Linksys | 216 | Nos |
| PVC and Conduits | | | |
| 21 | 25mm HDPE pipe for encapsulating the fibre cable Make : ISI Branded | 2500 | Mtrs |
| 22 | 25mm GI conduit for encapsulating the fibre cable while crossing Road Make : ISI Branded | 150 | Mtrs |
| 23 | 25mm PVC pipe with required bends and accessories Make : ISI Branded | 3600 | Mtrs |
| 24 | 32mm PVC pipe with required bends and accessories Make : ISI Branded | 2500 | Mtrs |
| 25 | 32mm casing capping with required accessories Make : ISI Branded | 600 | Mtrs |
| 26 | 25mm casing capping with required accessories Make : ISI Branded | 1200 | Mtrs |
| Other Items | | | |
| 27 | 0.6 KVA UPS Make: APC, Emerson, Numeric, Eaton, Microtek | 16 | Nos |
| 28 | Access Point as per technical specification Make: Ubiquiti, Aruba, Cisco, Juniper, Linksys | 49 | Nos |
| 29 | RCC Chamber with cover (2 feet diameter and 2 feet depth with 40mm thickness) | 10 | Nos |
| 30 | OFC Route Marker | 100 | Nos |



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| Installation & Commissioning Charges | | | |
|---|--|-------------|------------|
| S. No. | Description | Qty. | UOM |
| Firewall | | | |
| 1 | Firewall Installation | 1 | Nos |
| CAT6 and Rack components | | | |
| 2 | Category 6 4 pair UTP Cable 305m Laying | 150 | Box |
| 3 | Category 6 Information Outlet for Field Side Fixing | 920 | Nos |
| 4 | Category 6 24 Port Patch Panel Termination | 45 | Nos |
| 5 | Dual Face Plate With Back Box Fixing | 460 | Nos |
| 6 | 42U Rack Fixing | 1 | Nos |
| 7 | 12U Rack Fixing | 9 | Nos |
| 8 | 9U Rack Fixing | 7 | Nos |
| OFC and related components | | | |
| 9 | 6 Core Single Mode Outdoor Fiber Optic Cable Laying | 3250 | Mtrs |
| 10 | 12 Port LIU OFC Splicing | 21 | Nos |
| 11 | RCC Chamber Digging and Fixing | 10 | Nos |
| 12 | OFC Route Marker Fixing | 100 | Nos |
| 13 | Road Cutting | 150 | Mtrs |
| 14 | Soft Soil Digging | 2400 | Mtrs |
| Switches | | | |
| 15 | 24 Port Gigabit Switch With 4 SFP Slots Installation | 41 | Nos |
| 16 | 24 Port Gigabit SFP Module Switch Installation | 1 | Nos |
| 17 | 8 Port Gigabit Switch With SFP Slots Installation | 1 | Nos |
| 18 | 24 Port Gigabit POE Switch With 4 SFP Slots Installation | 2 | Nos |
| 19 | 8 Port Gigabit POE Switch With SFP Slots Installation | 9 | Nos |
| 20 | Single Mode SFP Module Installation | 216 | Nos |
| PVC and Conduits | | | |
| 21 | 25mm HDPE pipe Laying | 2500 | Mtrs |
| 22 | 25mm GI Conduit Laying | 150 | Mtrs |
| 23 | 25mm PVC Pipe Laying | 3600 | Mtrs |
| 24 | 32mm PVC Pipe Laying | 2500 | Mtrs |
| 25 | 32mm Casing Capping Laying | 600 | Mtrs |
| 26 | 25mm Casing Capping Laying | 1200 | Mtrs |
| Others | | | |
| 27 | UPS Installation | 16 | Nos |
| 28 | Access Point Fixing and Installation | 49 | Nos |
| 29 | Project Testing, Management, Documentation | 1 | LS |



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Annexure – II

Technical Specifications / Compliance

(The following Technical Specifications Compliance shall be furnished and signed copy to be submitted by all bidders)

1. Standard Firewall with Protection - 1 Year

Make: Quick Heal, Cisco, Palo Alto, Juniper, Check Point

Quoted Make: _____

| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|--------------------------------|---|---------------------|
| 1 | Firewall TCP Throughput (Mbps) | Should be 12,000 | |
| 2 | Antivirus Throughput (Mbps) | Should be 1,540 | |
| 3 | IPSEC VPN Throughput (Mbps) | Should be 7,100 | |
| 4 | SSL VPN Throughput (Mbps) | Should be 700 | |
| 5 | UTM Throughput (Mbps) | Should be 1,530 | |
| 6 | Interfaces | Should be minimum 12 (8 Copper+ 4 SFP*) GBE | |
| 7 | I/O Interfaces | Should be minimum 2 USB ports | |
| 8 | Concurrent Sessions | Should be 90,00,000 | |
| 9 | New Sessions/Second | Should be 1,30,000 | |
| 10 | Console Port | Should have 1 Console Port | |
| 11 | Branch Office VPN (IPSEC/SSL) | Should be Unrestricted | |
| 12 | Mobile User VPN (PPTP/SSL) | Should be Unrestricted | |
| 13 | Antivirus | Gateway Antivirus, Scanning for local traffic, Scanning HTTPS traffic for viruses | |
| 14 | IPv6 Support | Support from Day 1, 6to4 tunnel, IPv6 Interface Configuration | |
| 15 | Zones | Custom Zone support along with LAN/WAN/DMZ | |
| 16 | Network Interface | VLAN, Alias, USB Modem, Link Aggregation, Bridge, USB tethering | |
| 17 | DNS | DNS Server, Static DNS, Dynamic DNS, Multiple DNS Server support, DNS Filtering with DNS response against Botnet C&C IPDB, IPv6 DNS | |
| 18 | Load Balancing | Default Route, Load Balancing, Failover, Not a participant, Add levels for failover | |



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| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|-----------------------------|--|---------------------|
| 19 | DHCP | Multiple DHCP Server, Adding Static Lease, DHCP V6 | |
| 20 | Routing | Static Routing, Policy based routing, OSPFv2, BGPv4, Multicast Routing Sparse Mode & Dense Mode | |
| 21 | Firewall | Stateful Firewall, Default policy/rules for 40+ well know services with provision to ON/OFF, Provision for custom rules, IP/ICMP/TCP - related attack prevention, DoS & DDoS attack prevention for SYN, UDP & ICMP, Multiple zone support for Security (LAN, WAN, DMZ, VPN & UTM), NAT Traversal (H.323, SIP, SCCP, MGCP) - Protocol to provide voice and video services over IP networks (NAT 64, DNS 64, static NAT, Advanced NAT, dynamic NAT, PAT, and DHCP V6), flow based and DNS based web filtering inspection mode, Traffic logging, Layer8 - User identity firewall, Midstream connection pickup, Bypass Stateful Firewall, Bypass Proxy | |
| 22 | Intrusion Prevention System | Automatic updates with reports/display username in the reports, IPS Policies : Multiple, Custom White/Black list support, SSL inspection for application control, IPS actions: default, monitor, block with expiry time, IPS actions: terminate a TCP session, Enable/disable IPS categories/signatures to reduct packet latency, Generate alerts in case of attacks, Configurable action for signature, Protect from Botnet, Phishing, and Spoofing (Session Hijacking, URL Tampering, Cookie Poisoning, SQL injections, cross-site scripting), Detect and prevent mode, Support for custom signature via GUI/User defined signatures, More than 23000 NGIPS signatures, Filter based selection (category, severity, platform, target, OS application and/or protocol), Signature updates - both manual and via push pull technology, Signature based detection, Protocol Anomaly Detection (Behaviour | |



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| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|--|--|---------------------|
| | | based), Traffic - Drop session/Bypass mode | |
| 23 | VPN | Supports L2TP, PPTP, IPsec and SSL VPN, Supports Encryption - 3DES, DES, AES (128,192, 256) , Twofish, Blowfish & Camellia, Supports Hash Algorithms - MD5, SHA1, SHA2_256, SHA2_384 & SHA2_512, IKE Version - IKEv1 & IKEv2, Preshared key, RSA/DSA key, X.509 Certificate, XAUTH, Support for third party certificate authorities including verisign/Wntrust.net/Microsoft, NAT Traversal (VPN pass-through/one to one NAT), Diffie Hellman Groups - 2,5,14,15,16,17,18,22,23 & 24, Dead peer detection and PFS (Perfect Forward Secrecy) support, Route based IPSEC tunnel, MPLS-VPN Failover, VPN Load Balancing, VPN Compression, multiple concurrent connections per user, Preserves the ToS bit for SSL VPN traffic, SSL VPN Authentication - Local Database, Multi-layered Client Authentication - Certificate, Username/Password, Network access - Full tunnelling & Split Tunnelling, Light weight SSL VPN Tunnelling Client, SSL encryption/decryption, Allow Group Policy on SSL VPN Remote users, SSL Remote Access VPN Support for Windows, Linux and Mac, Unrestricted SSL & IP Sec VPN License | |
| 24 | Application Classification and Control | Inbuilt Application Category Database, Signatures manual/automatic update, 2,000+ Applications Supported | |
| 25 | Policy | Inbuilt Web Category Database/on cloud web categorization, Custom Category, Allow corporate Gmail and Block Personal Gmail, COUNTRY Based Filtering/Blocking, MAC base Internet Access, IP Based Internet access, White/Black list URL support, More than 50 default categories (150 Million+ URLs categorized into 55+ web categories), Keyword blocking for | |



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| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|---|---|---------------------|
| | | search engine queries, File Size Blocking, File Extension Blocking, Provision to define Internet Quota, Provision to define Time Quota, Traffic Shaping for HTTP, HTTPS & VPN, Proxy based web filtering inspection mode, Block Malware, Phishing URLs, Custom block messages with details, Captive Portal customization, Group policies, Individual user policy, HTTP/HTTPS/SSL based web filtering, , CIPA Compliant, Group wise bandwidth Management, Cyclic data transfer policy (weekly/monthly/yearly), Web based Bandwidth Management for HTTP, HTTPS & VPN for Upload and Download | |
| 26 | Mail Protection | Scanning of Secure Mail, Anti-malware, Anti-Spam, Attachment Control based on - size, file extension & MIME type, Keyword blocking, Support for POP3/SSL, SMTP/SSL and IMAP/SSL Ports, Configurable Ports, Scanning of inbound and outbound traffic, white list/black list (Real time blacklist RBL) based on IP address, email address/domain, Configurable spam actions such as tag, delete etc., Subject line tagging, Redirect Spam mails to dedicated email address, Facility to add signature/disclaimer in mails, Email notifications to administrator, Whitelist - Domain & Email Id, Blacklist - Domain & Email Id | |
| 27 | User Identity, Group based access control & Authentication Server support | Black/White web domain list for Group, User Name & IP & MAC address binding for internet access authentication, Access time restriction, Time and Data Quota restriction, Configure password policy (user based/custom), Captive Portal with guest user support (Manual, through SMS), Auto Purge after Expiry for Guest User, Force Logout, Concurrent user log-in support, Forced User password change on first log in, Multiple Authentication servers support(except | |



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| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|-------------------------|--|---------------------|
| | | VPN) Local, Active Directory, LDAP, SSO - Single Sign ON, Guest profile and expiration feature for local user and guest, Support captive portal authentication & Captive Portal customization, UTM access mode CLI (Serial & SSH), GUI | |
| 28 | Generic Product Feature | Supports regular product updates for bug fixes & Product enhancements, Signature updates for Antivirus, IDS/IPS & Web Security, Support for online and offline (manual), Configuration backup/restore, Scheduler for configuration backup, Factory Reset, Administrator profiling, Role based administration (read-write/read only), Multiple administrator and user levels, Email & SMS Notification including all the critical alerts, Offline Mode, Free Firmware Upgrade support, Offline Firmware upgrade support, SNMP v1 & v2c Support, Auto Daily & Monthly Consolidated Report in mail, Auto UTM Backup in Mail, Centralized console, Network Time Protocol (NTP) Support, Diagnostic tools, Graphical real-time logging and historical monitoring, Log Viewer, Syslog Support, GoDeep.AI Module, "IPv6 Ready", physical storage, CE/FCC/BIS Certification. | |
| 29 | Technical Support | Standard Deployment Support directly from OEM, Should have ISO 20000 certified Technical Support, Presence of technical support team in Tamil Nadu, Level1 Technical Support directly from OEM including Onsite Support from OEM, In house Threat Research Competency with intelligence coming millions of nodes | |
| 30 | Additional Requirement | Offered OEM should be MII Class 1 supplier, Offered OEM should be a public listed company, | |



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| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|-------------|--|---------------------|
| | | Offered OEM should have 15+ registered offices with GST number in India, Post Implementation Handover Technical Training directly from OEM, OEM Should have own R&D LAB in India, ISO-27001, ISO/IEC 17025, ISO 9001, BIS, Local Content (MII): 80% and above, | |

2. Category-6 4 pair UTP Cable 305m

Make: D-Link, Commscope, Systimax, AMP, R&M

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|-----------------------------------|--------------------|--|---------------------|
| 1 | Features | Category 6 Unshielded Twisted Pair 4 pair cable shall be compliant with ANSI/TIA-568.2-D Cat6 and ISO/IEC 11801-1 Class E with 4-connector channel | |
| 2 | | Category 6 UTP cables shall extend between the work area location and its associated telecommunications closet and consist of 4 pair, 23 AWG, UTP. | |
| 3 | | Third party verified by Intertek Testing Services (ETL) ETL verified electrical transmission performance to the requirements of ANSI/TIA-568.2-D Cat6 and ISO/IEC 11801-1 Class E with 4-connector channel | |
| 4 | | All Category 6 cables shall meet or exceed the following characteristics: | |
| Mechanical Characteristics | | | |
| 5 | Construction | 4 twisted pairs separated by internal X shaped, 4 channel, full separator. Half shall not be accepted. | |
| 6 | Conductor diameter | 23 AWG | |
| 7 | Insulation | High density Polyethylene | |
| 8 | Pairing | Twisted into two core | |
| 9 | No. of Pair | 4 Pair twisted together | |
| 10 | Jacket Material | FR-PVC | |
| 11 | Color of sheath | Grey | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|--------------------------|--|---------------------|
| 12 | Rip Cord | Yes | |
| 13 | Sequential meter marking | Yes | |
| 14 | Temperature Rating | (- 20 to +70 C) | |
| 15 | Filler Required | Yes | |
| 16 | Packing | 305 Mtrs. | |
| 17 | Flame Properties | Flammability Test – IEC 60332-1 | |
| 18 | Certification | UL Listed & ETL verified electrical transmission performance to the requirements of ANSI/TIA-568.2-D Cat6 and ISO/IEC 11801-1 Class E with 4-connector channel | |

3. Category 6 Information outlet for Field Side

Make: D-Link, Commscope, Systimax, AMP, R&M

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------------|--|---------------------|
| 1 | RJ 45 Jack | Housing: Polycarbonate, UL94V-2 rated With Optional Color | |
| 2 | | Contact Material: Phosphor Bronze with Nickel plated | |
| 3 | | Contact Plating: 50 micro-inch Gold plated on plug contact area | |
| 4 | | Insertion Cycle: Minimum 750 insertion cycles | |
| 5 | IDC Connector | Housing: Polycarbonate, UL94V-2 rated | |
| 6 | | IDC Contact Plating: Phosphor bronze with tin plated | |
| 7 | | IDC CAP: Polycarbonate, UL 94V-2 | |
| 8 | | IDC Life: 200-times min. | |
| 9 | | Wire Accommodation: 22-24 AWG standard and solid wire | |
| 10 | Standards | ISO/IEC 11801, ANSI/TIA-568. C. 2, ISO/IEC 60603-7 | |
| 11 | Temperature Range | Operating Temperature: -10°C to 60°C | |
| 12 | | Storage Temperature: -40°C to 70 °C | |
| 13 | Certification | UL Listed & ETL verified electrical transmission performance to the requirements of ANSI/TIA-568.2-D Cat6 and ISO/IEC 11801-1 Class E with 4-connector channel | |



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4. Category 6 UTP Patch Cord 1 Meter

Make: D-Link, Commscope, Systimax, AMP, R&M

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|------------------------------|--|---------------------|
| 1 | Features | Category 6 Equipment cords – 1Mtr | |
| 2 | | Patch cord should be ETL VERIFIED TO ANSI/TIA-568.2-D CATEGORY 6 | |
| 3 | | Equipped with modular 8-position modular plugs on both ends, wired straight through with standards compliant wiring. | |
| 4 | Mechanical Characteristics | Conductor size: 24 AWG stranded bare copper | |
| 5 | | Outer diameter: 6.0mm+/-0.2mm nominal | |
| 6 | | Jacket: FR-PVC | |
| 7 | | Operating life: Minimum 750 insertion cycles | |
| 8 | | Contact blade: Copper Alloy | |
| 9 | RJ-45 Plug and Boot Material | Clear Polycarbonate for RJ-45 plug & Clear PVC for Boot | |
| 10 | Flame Properties | Flammability Test – IEC 60332-1 | |
| 11 | Bending Radius | 4 X Cable Diameter | |
| 12 | Certification | ETL verified electrical transmission performance to the requirements of ANSI/TIA-568.2-D Cat6 and ISO/IEC 11801-1 Class E with 4-conductor channel | |

5. Category 6 UTP Patch Cord 2 Meter

Make: D-Link, Commscope, Systimax, AMP, R&M

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------|--|---------------------|
| 1 | Features | Category 6 Equipment cords – 2Mtr | |
| 2 | | Patch cord should be ETL VERIFIED TO ANSI/TIA-568.2-D CATEGORY 6 | |
| 3 | | Equipped with modular 8-position modular plugs on both ends, wired straight through with standards compliant wiring. | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|------------------------------|--|---------------------|
| 4 | Mechanical Characteristics | Conductor size: 24 AWG stranded bare copper | |
| 5 | | Outer diameter: 6.0mm+/-0.2mm nominal | |
| 6 | | Jacket: FR-PVC | |
| 7 | | Operating life: Minimum 750 insertion cycles | |
| 8 | | Contact blade: Copper Alloy | |
| 9 | RJ-45 Plug and Boot Material | Clear Polycarbonate for RJ-45 plug & Clear PVC for Boot | |
| 10 | Flame Properties | Flammability Test – IEC 60332-1 | |
| 11 | Bending Radius | 4 X Cable Diameter | |
| 12 | Certification | ETL verified electrical transmission performance to the requirements of ANSI/TIA-568.2-D Cat6 and ISO/IEC 11801-1 Class E with 4-conductor channel | |

6. Category 6 24 Port Unloaded Patch Panel

Make: D-Link, Commscope, Systemax, AMP, R&M

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------------|---|---------------------|
| 1 | Panel | SPCC, 1.5MM thickness with black colour | |
| 2 | RJ 45 Jack | Housing: PBT+ Glass Fiber, UL94V-0 rated | |
| 3 | | Operating Life: Minimum 750 insertion cycles | |
| 4 | IDC Connector | Plastic Housing: Polycarbonate, UL94V-0 rated | |
| 5 | | IDC Contact Plating: Phosphor bronze with tin plated | |
| 6 | Standards | ISO/IEC 60603-7, ISO/IEC 11801, ANSI/TIA-568. C. 2, FCC PART 68, Subpart F. | |
| 7 | | Safety Rating: UL 1863 | |
| 8 | Cable Manager | 19 " Rank Mountable, Metallic high Strength & 1 U height. | |
| 9 | Temperature Range | Operating Temperature: -10°C to 60°C | |
| 10 | | Storage Temperature: -40°C to 70 °C | |
| 11 | Certification | UL Listed & ETL verified electrical transmission performance to the requirements of ANSI/TIA-568.2-D Cat6 | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------|--|---------------------|
| | | and ISO/IEC 11801-1 Class E with 4-connector channel | |

7. Category 6 Information outlet for Rack Side

Make: D-Link, Commscope, Systimax, AMP, R&M

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------------|--|---------------------|
| 1 | RJ 45 Jack | Housing: Polycarbonate, UL94V-2 rated With Optional Color | |
| 2 | | Contact Material: Phosphor Bronze with Nickel plated | |
| 3 | | Contact Plating: 50 micro-inch Gold plated on plug contact area | |
| 4 | | Insertion Cycle: Minimum 750 insertion cycles | |
| 5 | IDC Connector | Housing: Polycarbonate, UL94V-2 rated | |
| 6 | | IDC Contact Plating: Phosphor bronze with tin plated | |
| 7 | | IDC CAP: Polycarbonate, UL 94V-2 | |
| 8 | | IDC Life: 200-times min. | |
| 9 | | Wire Accommodation: 22-24 AWG standard and solid wire | |
| 10 | Standards | ISO/IEC 11801, ANSI/TIA-568. C. 2, ISO/IEC 60603-7 | |
| 11 | Temperature Range | Operating Temperature: -10°C to 60°C | |
| 12 | | Storage Temperature: -40°C to 70 °C | |
| 13 | Certification | UL Listed & ETL verified electrical transmission performance to the requirements of ANSI/TIA-568.2-D Cat6 and ISO/IEC 11801-1 Class E with 4-connector channel | |



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8. Dual Face Plate With Back Box

Make: D-Link, Commscope, Systimax, AMP, R&M

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------|---|---------------------|
| 1 | Features | Square plate, 86mmx86mm, Port - Single / Dual / Quad as per req. | |
| 2 | | Write on labels in transparent plastic window – supplied with plate | |
| 3 | | Screw hole covers – to be supplied with plate | |
| 4 | | Face Plate with shutter | |
| 5 | | Face Plate material: ABS with white Color | |
| 6 | | Should be able to support variety of jacks – UTP | |

9. 6 Core SM Outdoor Fiber Optic Cable

Make: D-Link, Commscope, Systimax, AMP, R&M

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|---------------|--|---------------------|
| 1 | Specification | 6 core OS2 Fiber | |
| 2 | | Corrugated Steel Tape Armour | |
| 3 | | The fiber is optimized for operation at 1310 nm and at 1550 nm. | |
| 4 | | Germanium doped core with no phosphorus i.e. reduced tendency for hydrogen degradation. | |
| 5 | | UV-curable dual layer acrylate coating, which ensures excellent micro bending and abrasion resistance. | |
| 6 | | Attenuation (of cable with fibers): At 1310 nm \leq 0.36 dB/km At 1550 nm \leq 0.22 dB/km | |
| 7 | | Central Loose Tube With Jelly filled | |
| 8 | | Glass Yarn between Steel Tape and Loose Tube | |
| 9 | | Should fulfil the requirements of: IEC 793-2: 1992 EN 188101 ITU-T Recommendation G.652 | |
| 10 | | ITU-T G.652.D | |
| 11 | | IEC 793-1 | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|--|-----------------------|---------------------|
| 12 | Testing methods are in accordance with the following standards | EN 188 000 | |

10. 12 port LIU LC – LC

Make: D-Link, Commscope, Systimax, AMP, R&M

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|---------------|--|---------------------|
| 1 | Specification | 12 port Loaded LIU accommodate Duplex LC Single mode adapters. | |
| 2 | | Cold steel base material with powder coating. Aluminium top and front cover for light mounting | |
| 3 | | Removable Top & Front cover for better access to interior of LIU | |
| 4 | | Rubber grommet allow for pre-terminated fiber trunk installation to protect cable and minimize dust build-up | |

11. SM 2mtr LC to LC fiber patch cable

Make: D-Link, Commscope, Systimax, AMP, R&M

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------|--|---------------------|
| 1 | Fiber cable | Optical fiber patch leads should comprise of Single mode 9/125µm fiber with LC-LC fiber connectors terminated at each end. | |
| 2 | Mode | Single mode | |
| 3 | Ferrule | Zirconia ceramic ferrule | |
| 4 | | Pre-radiuses and pre-polished ferrule | |
| 5 | Type | Duplex Type | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------|-----------------------|---------------------|
| 6 | Colour | Yellow | |

12. 42U Rack

Make: D-Link, Netrack, APC, President, Valrack

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------------------|---|---------------------|
| 1 | Dimension | Floor Mount 42U x 800 W x 1000 D | |
| 2 | Rack Standard | Conforms to DIN 41494 or equivalent standard | |
| 3 | Construction | CKD (Knock Down) | |
| 4 | Front Door | Lockable Toughened Glass Door | |
| 5 | Rear Door | Vented Steel Dual Door. | |
| 6 | Basic Frame | Steel | |
| 7 | Equipment Mounting | DIN Standard 10mm Sq. Slots / Direct M6 Tap | |
| 8 | Mounting Angle | 19" Mounting angles made of formed steel | |
| 9 | Standard Finish | Powder Coated | |
| 10 | Mounting Option | Castor wheels (Front 2 wheels with Break and rear without break) Or Levelers or Base plinth | |
| 11 | Standard Colour | Black or Grey | |
| 12 | Static Load | 500 kgs | |
| 13 | Fan | 4 FAN 360CFM | |
| 14 | Power Distribution Unit | Vertical Power Distribution Unit with 12 x 5/15 sockets Round Pin, 230 Volts AC, 32 Amp with Plug | |
| 15 | Cable Manager | Horizontal Cable Manager-1U-Loop | |
| 16 | Certification | UL Certified | |



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13. 12U Rack

Make: D-Link, Netrack, APC, President, Valrack

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------------------|--|---------------------|
| 1 | Dimension | Wall Mount 12U x 550 W x 500 D | |
| 2 | Loading capacity | 40KG \pm 10% or better Loading capacity | |
| 3 | Front Door | Toughened Glass door with Lock and Key | |
| 4 | Cabinet Material | Powder coated CRCA sheet | |
| 5 | Power Distribution Unit | PDU 6 socket 5AMP - 1Nos | |
| 6 | Cable Manager | 1U Horizontal Cable Manager - 1No | |
| 7 | General | 19"Adjustable rails in the front and rear, Top and bottom cable entry facility, Hardware Screw pocket included | |
| 8 | Fan | Roof Mounted Fan Unit 90 CFM - 1No | |
| 9 | Certification | UL Certified | |

14. 9U Rack

Make: D-Link, Netrack, APC, President, Valrack

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------------------|--|---------------------|
| 1 | Dimension | Wall Mount 9U x 550 W x 500 D | |
| 2 | Loading capacity | 35KG \pm 10% or better Loading capacity | |
| 3 | Front Door | Toughened Glass door with Lock and Key | |
| 4 | Cabinet Material | Powder coated CRCA sheet | |
| 5 | Power Distribution Unit | PDU 6 socket 5AMP - 1Nos | |
| 6 | Cable Manager | 1U Horizontal Cable Manager - 1No | |
| 7 | General | 19"Adjustable rails in the front and rear, Top and bottom cable entry facility, Hardware Screw pocket included | |
| 8 | Fan | Roof Mounted Fan Unit 90 CFM - 1No | |
| 9 | Certification | UL Certified | |



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15. 24 Port Gigabit Switch With 4 SFP Slots

Make: D-Link, Aruba, Cisco, Juniper, Linksys

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|--------------------|--------------------------------|---|---------------------|
| General | | | |
| 1 | Number of Ports | 24*10/100/1000 Mbps base-T and 4* 1000BASE-X port. RJ-45/RS-232 Console Port | |
| 2 | Ethernet | Should support IEEE 802.3az Energy Efficient Ethernet. | |
| Performance | | | |
| 3 | Switching Capacity | 56 Gbps or more | |
| 4 | 64-byte Packet Forwarding rate | 41 Mpps or more | |
| 5 | MAC Address Table | 16K or more | |
| Features | | | |
| 6 | Layer 2 | Should support Head of Line blocking prevention for lower latency and better performance. | |
| 7 | | Support Jumbo Frame up to 9000 Bytes or higher. | |
| 8 | | Should support IGMP V1 and V2 Snooping, Able to create 250 or more IGMP groups and require support for Host-based IGMP Snooping Fast Leave. | |
| 9 | | Should support MLD Snooping, Able to create 250 or more MLD groups. | |
| 10 | | Should support BPDU filtering and Root restriction. | |
| 11 | | Should have ERPS as per standard ITU-T G.8032 to provide sub-50ms protection for Ethernet traffic in ring topology. | |
| 12 | VLAN | Require IEEE 802.1Q Tagged VLAN protocol. | |
| 13 | | Should support 4K VLAN Groups and configurable VLAN ID: 0 to 4094 | |
| 14 | | Should support Port based VLAN, GVRP, VLAN Trunking, Port based Q-in-Q, ISM VLAN, MAC Based VLAN, 802.1V Protocol VLAN and Private VLAN. | |
| 15 | Layer 3 | Should support Static and default routing. | |
| 16 | | Support for Gratuitous ARP. | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|---------------------------|--|---------------------|
| 17 | Access Control List (ACL) | Support at least 250 ACL rules, each rule should be applied on single/multiple ports. | |
| 18 | | Should support Access Control List based on 802.1p priority, VLAN, MAC address, Ether type, IP address, DSCP, Protocol type, TCP/UDP port number and IPv6 Traffic Class. | |
| 19 | | Should support Time-based ACL. | |
| 20 | Security | Should have Port Security with 60 or higher MAC addresses per port. | |
| 21 | | Support per port Broadcast/Multicast/Unicast Storm Control. | |
| 22 | | Should support DHCP Server Snooping and DHCP Client Filtering. | |
| 23 | | Should have SSH and SSL. | |
| 24 | | Require prevention of DoS attacks. | |
| 25 | | It shall have built in mechanism to protect the switch against traffic flooding caused by virus attack. | |
| 26 | | Support Traffic Segmentation to limit traffic flow from a single or group of ports, to another group of ports. | |
| 27 | | Should have IP+MAC+Port Binding to restrict the access to a switch. | |
| 28 | | Should support 802.1X Port based and Host Based Authentication. | |
| 29 | | Support for Guest VLAN. | |
| 30 | | Should support RADIUS and TACACS+ authentication for switch access. | |
| 31 | | Should support 4 level user account privilege. | |
| 32 | | Should support local MAC based access control with minimum 500 MAC entries. | |
| 33 | | Should support BPDU Attack Protection. | |
| 34 | Management | Able to manage through Web-GUI, Fully functional CLI interface and Telnet. | |
| 35 | | Should support SNMP v1, v2c, v3 and SNMP Traps and Remote Monitoring (RMON V1 and V2). | |
| 36 | | Should support trusted host to manage the switch from a remote station. | |
| 37 | | Should support Trap/alarm/log severity control. | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|---|---|---|
| 38 | | Should have SNTP/NTP protocol for time synchronization. | |
| 39 | | Support IEEE 802.3ah Ethernet Link OAM. | |
| 40 | | Should have IPv4/IPv6 dual stack function. | |
| 41 | | Should have Pv6 Stateless Address Auto-configuration. | |
| 42 | | Should support LLDP. | |
| 43 | | Physical/Environmental | AC Input: 100 to 240 VAC, 50/60 Hz internal universal power supply. |
| 44 | Should have support for Redundant Power supply. | | |
| 45 | Operating Temperature: -5 to 50 °C (41 to 122 °F). | | |
| 46 | All Gigabit Ethernet port should support IEC 61000-4-5 surge protection. | | |
| 47 | Certifications: CE, FCC, UL | | |
| 48 | Switch should be supplied with the all necessary hardware accessories like Power cord, Rack-mount bracket, Installation Guide, etc. and necessary software image file to fulfil all above mention feature set from day 1. | | |
| 49 | All Switches and SFP Modules/Transceiver From same OEM | | |

16. 24 Port Gigabit SFP Module Switch

Make: D-Link, Aruba, Cisco, Juniper, Linksys

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|--------------------|--------------------------------|---|---------------------|
| General | | | |
| 1 | Number of Ports | 24*1000 Mbps base-X and 4* 10G SFP+ port. RJ-45/RS-232 Console Port. | |
| 2 | Ethernet | Should support IEEE 802.3az Energy Efficient Ethernet. | |
| Performance | | | |
| 3 | Switching Capacity | 128 Gbps or more | |
| 4 | 64-byte Packet Forwarding rate | 95 Mpps or more | |
| 5 | MAC Address Table | 16K or more | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|-----------------|---------------------------|--|---------------------|
| Features | | | |
| 6 | Layer 2 | Should support Head of Line blocking prevention for lower latency and better performance. | |
| 7 | | Support Jumbo Frame up to 9000 Bytes or higher. | |
| 8 | | Should support IGMP V1 and V2 Snooping, Able to create 250 or more IGMP groups and require support for Host-based IGMP Snooping Fast Leave. | |
| 9 | | Should support MLD Snooping, Able to create 250 or more MLD groups. | |
| 10 | | Should support BPDU filtering and Root restriction. | |
| 11 | | Should have ERPS as per standard ITU-T G.8032 to provide sub-50ms protection for Ethernet traffic in ring topology. | |
| 12 | VLAN | Require IEEE 802.1Q Tagged VLAN protocol. | |
| 13 | | Should support 4K VLAN Groups and configurable VLAN ID: 0 to 4094 | |
| 14 | | Should support Port based VLAN, GVRP, VLAN Trunking, Port based Q-in-Q, ISM VLAN, MAC Based VLAN, 802.1V Protocol VLAN and Private VLAN. | |
| 15 | Layer 3 | Should support Static and default routing. | |
| 16 | | Support for Gratuitous ARP. | |
| 17 | Access Control List (ACL) | Support at least 250 ACL rules, each rule should be applied on single/multiple ports. | |
| 18 | | Should support Access Control List based on 802.1p priority, VLAN, MAC address, Ether type, IP address, DSCP, Protocol type, TCP/UDP port number and IPv6 Traffic Class. | |
| 19 | | Should support Time-based ACL. | |
| 20 | Security | Should have Port Security with 60 or higher MAC addresses per port. | |
| 21 | | Support per port Broadcast/Multicast/Unicast Storm Control. | |
| 22 | | Should support DHCP Server Snooping and DHCP Client Filtering. | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) | |
|------|---|--|--|--|
| 23 | | Should have SSH and SSL. | | |
| 24 | | Require prevention of DoS attacks. | | |
| 25 | | It shall have built in mechanism to protect the switch against traffic flooding caused by virus attack. | | |
| 26 | | Support Traffic Segmentation to limit traffic flow from a single or group of ports, to another group of ports. | | |
| 27 | | Should have IP+MAC+Port Binding to restrict the access to a switch. | | |
| 28 | | Should support 802.1X Port based and Host Based Authentication. | | |
| 29 | | Support for Guest VLAN. | | |
| 30 | | Should support RADIUS and TACACS+ authentication for switch access. | | |
| 31 | | Should support 4 level user account privilege. | | |
| 32 | | Should support local MAC based access control with minimum 500 MAC entries. | | |
| 33 | | Should support BPDU Attack Protection. | | |
| 34 | | Management | Able to manage through Web-GUI, Fully functional CLI interface and Telnet. | |
| 35 | | | Should support SNMP v1, v2c, v3 and SNMP Traps and Remote Monitoring (RMON V1 and V2). | |
| 36 | Should support trusted host to manage the switch from a remote station. | | | |
| 37 | Should support Trap/alarm/log severity control. | | | |
| 38 | Should have SNTP/NTP protocol for time synchronization. | | | |
| 39 | Support IEEE 802.3ah Ethernet Link OAM. | | | |
| 40 | Should have IPv4/IPv6 dual stack function. | | | |
| 41 | Should have IPv6 Stateless Address Auto-configuration. | | | |
| 42 | Should support LLDP. | | | |
| 43 | Physical/Environmental | AC Input: 100 to 240 VAC, 50/60 Hz internal universal power supply. | | |
| 44 | | Should have support for Redundant Power supply. | | |
| 45 | | Operating Temperature: -5 to 50 °C (41 to 122 °F). | | |
| 46 | | All Gigabit Ethernet port should support IEC 61000-4-5 surge protection. | | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------|---|---------------------|
| 47 | | Certifications: CE, FCC, UL | |
| 48 | | Switch should be supplied with the all necessary hardware accessories like Power cord, Rack-mount bracket, Installation Guide, etc. and necessary software image file to fulfil all above mention feature set from day 1. | |
| 49 | | All Switches and SFP Modules/Transceiver From same OEM | |

17. 8 Port Gigabit Switch With SFP Slots

Make: D-Link, Aruba, Cisco, Juniper, Linksys

Quoted Make: _____

| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|--------------------|--------------------------------|---|---------------------|
| General | | | |
| 1 | Number of Ports | 8*10/100/1000 Mbps base-T and 2* 1000BASE-X port. RJ-45/RS-232 Console Port. | |
| 2 | Ethernet | Should support IEEE 802.3az Energy Efficient Ethernet. | |
| Performance | | | |
| 3 | Switching Capacity | 20 Gbps or more | |
| 4 | 64-byte Packet Forwarding rate | 14.88 Mpps or more | |
| 5 | MAC Address Table | 16K or more | |
| Features | | | |
| 6 | Layer 2 | Should support Head of Line blocking prevention for lower latency and better performance. | |
| 7 | | Support Jumbo Frame up to 9000 Bytes or higher. | |
| 8 | | Should support IGMP V1 and V2 Snooping, Able to create 250 or more IGMP groups and require support for Host-based IGMP Snooping Fast Leave. | |
| 9 | | Should support MLD Snooping, Able to create 250 or more MLD groups. | |
| 10 | | Should support BPDU filtering and Root restriction. | |
| 11 | | Should have ERPS as per standard ITU-T G.8032 to provide sub-50ms | |



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Website: www.niepmd.tn.nic.in E-mail: niepmd@gmail.com Phone: 044-27472113, 27472046.

| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|---------------------------|--|---------------------|
| | | protection for Ethernet traffic in ring topology. | |
| 12 | VLAN | Require IEEE 802.1Q Tagged VLAN protocol. | |
| 13 | | Should support 4K VLAN Groups and configurable VLAN ID: 0 to 4094 | |
| 14 | | Should support Port based VLAN, GVRP, VLAN Trunking, Port based Q-in-Q, ISM VLAN, MAC Based VLAN, 802.1V Protocol VLAN and Private VLAN. | |
| 15 | Layer 3 | Should support Static and default routing. | |
| 16 | | Support for Gratuitous ARP. | |
| 17 | Access Control List (ACL) | Support at least 250 ACL rules, each rule should be applied on single/multiple ports. | |
| 18 | | Should support Access Control List based on 802.1p priority, VLAN, MAC address, Ether type, IP address, DSCP, Protocol type, TCP/UDP port number and IPv6 Traffic Class. | |
| 19 | | Should support Time-based ACL. | |
| 20 | Security | Should have Port Security with 60 or higher MAC addresses per port. | |
| 21 | | Support per port Broadcast/Multicast/Unicast Storm Control. | |
| 22 | | Should support DHCP Server Snooping and DHCP Client Filtering. | |
| 23 | | Should have SSH and SSL. | |
| 24 | | Require prevention of DoS attacks. | |
| 25 | | It shall have built in mechanism to protect the switch against traffic flooding caused by virus attack. | |
| 26 | | Support Traffic Segmentation to limit traffic flow from a single or group of ports, to another group of ports. | |
| 27 | | Should have IP+MAC+Port Binding to restrict the access to a switch. | |
| 28 | | Should support 802.1X Port based and Host Based Authentication. | |
| 29 | | Support for Guest VLAN. | |
| 30 | | Should support RADIUS and TACACS+ authentication for switch access. | |



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| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|---|--|---|
| 31 | | Should support 4 level user account privilege. | |
| 32 | | Should support local MAC based access control with minimum 500 MAC entries. | |
| 33 | | Should support BPDU Attack Protection. | |
| 34 | Management | Able to manage through Web-GUI, Fully functional CLI interface and Telnet. | |
| 35 | | Should support SNMP v1, v2c, v3 and SNMP Traps and Remote Monitoring (RMON V1 and V2). | |
| 36 | | Should support trusted host to manage the switch from a remote station. | |
| 37 | | Should support Trap/alarm/log severity control. | |
| 38 | | Should have SNTP/NTP protocol for time synchronization. | |
| 39 | | Support IEEE 802.3ah Ethernet Link OAM. | |
| 40 | | Should have IPv4/IPv6 dual stack function. | |
| 41 | | Should have IPv6 Stateless Address Auto-configuration. | |
| 42 | | Should support LLDP. | |
| 43 | | Physical/Environmental | AC Input: 100 to 240 VAC, 50/60 Hz internal universal power supply. |
| 44 | Should have support for Redundant Power supply. | | |
| 45 | Operating Temperature: -5 to 50 °C (41 to 122 °F). | | |
| 46 | All Gigabit Ethernet port should support IEC 61000-4-5 surge protection. | | |
| 47 | Certifications: CE, FCC, UL | | |
| 48 | Switch should be supplied with the all necessary hardware accessories like Power cord, Rack-mount bracket, Installation Guide, etc. and necessary software image file to fulfil all above mention feature set from day 1. | | |
| 49 | All Switches and SFP Modules/Transceiver From same OEM | | |



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18. 24 Port Gigabit POE Switch With 4 SFP Slots

Make: D-Link, Aruba, Cisco, Juniper, Linksys

Quoted Make: _____

| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|------------------------|--|---------------------|
| 1 | Number of Ports | 24 X 10/100/1000 Mbps RJ-45 Gigabit Ethernet PoE+ Ports 4 X 100/1000 Mbps SFP Combo Ports | |
| 2 | Ethernet | Should support IEEE 802.3az Energy Efficient Ethernet. | |
| 3 | Switching Capacity | 56Gbps or higher or non-blocking architecture | |
| 4 | Packet Forwarding rate | 41.7 Mpps or more | |
| 5 | MAC Address Table | 8K or more | |
| 5 | Hardware Specification | Should be standard 19 inch 1U rack mountable | |
| 6 | | Support for the Energy Efficient Ethernet (IEEE 802.3az) standard. | |
| 7 | | Switch should delivered 802.3at PoE+ and 802.3af PoE power to any of the RJ-45 ports. | |
| 8 | | The total power available for PoE switch should be 370W or higher. | |
| 9 | | Switch should be internal power supply 100 to 240 V AC 50/60 Hz. | |
| 10 | | Operating temperature should be -5 degree Celsius to +50 degree Celsius. | |
| 11 | Software Specification | Should support Head of Line blocking prevention for lower latency and better performance. | |
| 12 | | Support Jumbo Frame up to 9K Bytes or higher. | |
| 13 | | Should support IGMP Snooping, Able to create 250 or more IGMP groups and require support for IGMP Snooping Fast Leave, IGMP Snooping Querier | |
| 14 | | Should support MLD Snooping, Able to create 250 or more MLD groups, Per VLAN MLD Snooping and require support for MLD Snooping Fast Leave. | |
| 15 | | Should have 802.1D STP, 802.1w RSTP and 802.1s MSTP Spanning Tree Protocol. | |
| 16 | | Should support Spanning tree Root restriction | |



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| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|-------------|--|---------------------|
| 17 | | Should support Loopback detection (LBD) to detect the loop created by a specific port. | |
| 18 | | Should support Multicast Filtering to filters or forward all unregistered groups. | |
| 19 | | Switch should support IEEE 802.1Q VLAN tagging for Ethernet frames. | |
| 20 | | Different type of VLAN like Port based, Auto Surveillance, Auto Voice, Asymmetric Vlan etc. should be available for configuration. | |
| 21 | | Switch should support QoS (quality of service) IEEE 802.1P for traffic prioritization. It should support 8 queues per port. | |
| 22 | | Different type of QoS priority like Strict Priority Queue and Weighted Round Robin. | |
| 23 | | Port based ingress / egress rate limit function should be available with limit in increments as low as 16 Kbps. | |
| 24 | | Switch should support Neighbour Discovery (ND) protocol for IPv6. | |
| 25 | | Switch should support to create IP interface | |
| 26 | | Should support default routing and static routing with minimum 120 IPv4 static route entries and minimum 50 IPv6 static route entries. | |
| 27 | | Support at least 700 access control entries. Each entry should be applied on single / multiple ports with permit / deny action. | |
| 28 | | Should support port security to secure the access port based on MAC address. | |
| 29 | | Should have broadcast, multicast, and unicast storm control to prevent faulty end stations from degrading overall systems performance. | |
| 30 | | Support Traffic Segmentation to restricted traffic flow from a single or group of ports, to another group of ports. | |
| 31 | | Should have SSH and SSL for IPv4 and IPv6. | |
| 32 | | Require prevention of DoS attacks, which include Land, Blat, TCP Null | |



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| S. No | Description | Minimum Specification | Compliance (Yes/No) |
|-------|-------------|---|---------------------|
| | | Scan, TCP Xmas Scan and TCP SYNFIN. | |
| 33 | | Should support 802.1X port based authentication. | |
| 34 | | Should support ARP spoofing prevention. | |
| 35 | | Should support DHCP snooping and DHCP server screening. | |
| 36 | | Switch should be able to create a binding table for IP + MAC + Port to prevent a malicious user from spoofing or to restrict the unauthorized users. | |
| 37 | | Should support 802.1X RADIUS and local server database authentication. | |
| 38 | | Should have option to check the status of copper cables using the cable-diagnostics time domain reflectometer (TDR). | |
| 39 | | Able to manage through Web-GUI and Telnet. | |
| 40 | | Should support SNMP v1, v2c, v3 and SNMP Traps and Remote Monitoring (RMON). | |
| 41 | | Should have dual Image support to reduce down time for the switches. | |
| 42 | | Switch should support dynamic host configuration protocol (DHCP) auto configuration of multiple switches through a boot server eases switch deployment. | |
| 43 | | Should have SNTP/NTP protocol for time synchronization. | |
| 44 | | Switch should be IPv6 Ready Compliance. | |
| 45 | | Should support Link Layer Discovery Protocol (LLDP) and LLDP-MED. | |
| 46 | General | Switch should be supplied with the all necessary components like Power cord, Rack-mount bracket, Installation Guide, etc. and necessary software image file to fulfil all above mention feature set from day 1. | |



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19. 8 Port Gigabit POE Switch With 2 SFP Slots

Make: D-Link, Aruba, Cisco, Juniper, Linksys

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|------------------------|--|---------------------|
| 1 | Number of Ports | 8 X 10/100/1000 RJ-45 Gigabit Ethernet PoE Ports 2 X SFP 1G Ports | |
| 2 | Ethernet | Should support IEEE 802.3az Energy Efficient Ethernet. | |
| 3 | Switching Capacity | 20Gbps or higher or non-blocking architecture | |
| 4 | Packet Forwarding rate | 14.88 Mpps or more | |
| 5 | MAC Address Table | 8K or more | |
| 5 | Hardware Specification | Should be standard 19 inch 1U rack mountable | |
| 6 | | Support for the Energy Efficient Ethernet (IEEE 802.3az) standard. | |
| 7 | | Switch should delivered 802.3at PoE+ and 802.3af PoE power to any of the RJ-45 ports. | |
| 8 | | The total power available for PoE switch should be 130W or higher. | |
| 9 | | Power input should be external power adapter. | |
| 10 | | Operating temperature should be -5 degree Celsius to +50 degree Celsius. | |
| 11 | Software Specification | Should support Head of Line blocking prevention for lower latency and better performance. | |
| 12 | | Support Jumbo Frame up to 10K Bytes or higher. | |
| 13 | | Should support IGMP Snooping, Able to create 250 or more IGMP groups and require support for IGMP Snooping Fast Leave, IGMP Snooping Querier | |
| 14 | | Should support MLD Snooping, Able to create 250 or more MLD groups, Per VLAN MLD Snooping and require support for MLD Snooping Fast Leave. | |
| 15 | | Should have 802.1D STP, 802.1w RSTP and 802.1s MSTP Spanning Tree Protocol. | |
| 16 | | Should support Spanning tree Root restriction | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------|--|---------------------|
| 17 | | Should support Loopback detection (LBD) to detect the loop created by a specific port. | |
| 18 | | Should support Multicast Filtering to filters or forward all unregistered groups. | |
| 19 | | Switch should support IEEE 802.1Q VLAN tagging for Ethernet frames. | |
| 20 | | Different type of VLAN like Port based, Auto Surveillance, Auto Voice, Asymmetric Vlan etc. should be available for configuration. | |
| 21 | | Switch should support QoS (quality of service) IEEE 802.1P for traffic prioritization. It should support 8 queues per port. | |
| 22 | | Different type of QoS priority like Strict Priority Queue and Weighted Round Robin. | |
| 23 | | Port based ingress / egress rate limit function should be available with limit in increments as low as 16 Kbps. | |
| 24 | | Switch should support Neighbour Discovery (ND) protocol for IPv6. | |
| 25 | | Switch should support to create IP interface | |
| 26 | | Should support default routing and static routing with minimum 120 IPv4 static route entries and minimum 50 IPv6 static route entries. | |
| 27 | | Support at least 700 access control entries. Each entry should be applied on single / multiple ports with permit / deny action. | |
| 28 | | Should support port security to secure the access port based on MAC address. | |
| 29 | | Should have broadcast, multicast, and unicast storm control to prevent faulty end stations from degrading overall systems performance. | |
| 30 | | Support Traffic Segmentation to restricted traffic flow from a single or group of ports, to another group of ports. | |
| 31 | | Should have SSH and SSL for IPv4 and IPv6. | |
| 32 | | Require prevention of DoS attacks, which include Land, Blat, TCP Null | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|-------------|---|---------------------|
| | | Scan, TCP Xmas Scan and TCP SYNFIN. | |
| 33 | | Should support 802.1X port based authentication. | |
| 34 | | Should support ARP spoofing prevention. | |
| 35 | | Should support DHCP snooping and DHCP server screening. | |
| 36 | | Switch should be able to create a binding table for IP + MAC + Port to prevent a malicious user from spoofing or to restrict the unauthorized users. | |
| 37 | | Should support 802.1X RADIUS and local server database authentication. | |
| 38 | | Should have option to check the status of copper cables using the cable-diagnostics time domain reflectometer (TDR). | |
| 39 | | Able to manage through Web-GUI and Telnet. | |
| 40 | | Should support SNMP v1, v2c, v3 and SNMP Traps and Remote Monitoring (RMON). | |
| 41 | | Should have dual Image support to reduce down time for the switches. | |
| 42 | | Switch should support dynamic host configuration protocol (DHCP) auto configuration of multiple switches through a boot server eases switch deployment. | |
| 43 | | Should have SNTP/NTP protocol for time synchronization. | |
| 44 | | Switch should be IPv6 Ready Compliance. | |
| 45 | | Should support Link Layer Discovery Protocol (LLDP) and LLDP-MED. | |
| 46 | General | Switch should be supplied with the all necessary components like Power cord, Rack-mount bracket, Installation Guide, etc. and necessary software image file to fulfil all above mentioned feature set from day 1. | |



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20. Single Mode SFP Module

Make: D-Link, Aruba, Cisco, Juniper, Linksys

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|------|---------------|--|---------------------|
| 1 | Module | IEEE802.3z 1000BASE-LX | |
| 2 | General | Hot Pluggable, MSA Compliant and RoHS Compliant | |
| 3 | Wavelength | 1310 nm | |
| 4 | Distance | 10km | |
| 5 | Certification | CE, FCC, UL | |
| 6 | General | All Switches and SFP Modules/Transceiver From same OEM | |

21. Access Point

Make: Ubiquiti, Aruba, Cisco, Juniper, Linksys

Quoted Make: _____

| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|-------------------|-------------------------|---|---------------------|
| Mechanical | | | |
| 1 | Dimensions | 220 x 48 mm (8.66 x 1.89") | |
| 2 | Weight | Without mount: 800 g (1.76 lb) | |
| 3 | | With mount: 930 g (2.05 lb) | |
| 4 | Enclosure Material | Plastic | |
| 5 | Mount material | SGCC Steel | |
| 6 | Weatherproofing | IP54 | |
| Hardware | | | |
| 7 | Management interfaces | Ethernet Bluetooth | |
| 8 | Networking interface | (1) GbE RJ45 port | |
| 9 | Button | Factory reset | |
| 10 | Power method | 802.3at PoE+, passive PoE (48V) | |
| 11 | Supported voltage range | 44 to 57VDC | |
| 12 | Max. power consumption | 16.5W | |
| 13 | Max. TX power | 2.4 GHz : 26 dBm 5 GHz : 26 dBm | |
| 14 | MIMO | 2.4 GHz : 4 x 4 5 GHz : 4 x 4 | |
| 15 | Throughput rate | 2.4 GHz : 600 Mbps 5 GHz : 2400 Mbps | |
| 16 | Antenna gain | 2.4 GHz : 4 dBi 5 GHz : 5.5 dBi | |
| 17 | Mounting | Wall/ceiling | |



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| S.No | Description | Minimum Specification | Compliance (Yes/No) |
|-----------------------------|-------------------------|--|---------------------|
| 18 | Operating temperature | -30 to 60° C (-22 to 140° F) | |
| 19 | Operating humidity | 5 - 95% noncondensing | |
| 20 | Certifications | CE, FCC, IC | |
| Software | | | |
| 21 | WiFi standards | 802.11a/b/g WiFi 4/WiFi 5/WiFi 6 | |
| 22 | Wireless security | WPA-PSK, WPA-Enterprise (WPA/WPA2/WPA3) | |
| 23 | BSSID | 8 per radio | |
| 24 | VLAN | 802.1Q | |
| 25 | Advanced QoS | Per-user rate limiting | |
| 26 | Guest traffic isolation | Supported | |
| 27 | Concurrent clients | 300+ | |
| Supported Data Rates | | | |
| 28 | 802.11a | 6, 9, 12, 18, 24, 36, 48, 54 Mbps | |
| 29 | 802.11b | 1, 2, 5.5, 11 Mbps | |
| 30 | 802.11g | 6, 9, 12, 18, 24, 36, 48, 54 Mbps | |
| 31 | 802.11n (WiFi 4) | 6.5 Mbps to 600 Mbps (MCS0 - MCS31, HT 20/40) | |
| 32 | 802.11ac (WiFi 5) | 6.5 Mbps to 1.7 Gbps (MCS0 - MCS9 NSS1/2/3/4, VHT 20/40/80/160) | |
| 33 | 802.11ax (WiFi 6) | 7.3 Mbps to 2.4 Gbps (MCS0 - MCS11 NSS1/2/3/4, HE 20/40/80/160) | |



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ANNEXURE – III

Manufacturer Authorization Form

(To be individually provided for Firewall, Switch, Passive and Rack OEMs in its letter head)

To,
The Director,
NIEPMD,
East coast Road, Muttukadu, Kovalam (post)
Chennai-603 112

Tender No: NIEPMD/PUR 4 (73)/2023-24

Subject: Manufacturer Authorization Form for <Firewall/Passive Components/Racks/Switches>

Dear Sir,

We, **M/s** _____ an established and reputable manufacturer of **<Firewall/Passive Components/ Racks/ Switches>** (*strike-off not applicable items*) having its office at _____ do hereby authorize **M/s** _____ registered at _____, hereinafter, the "Bidder" to the offer their quotation, negotiate and conclude the contract with you against the above tender.

We hereby extend our warranty as per the terms and conditions of our offer to Bidder for the Hardware/Software related supply, installation, commissioning, services and support against above referred tender.

We also undertake the below mentioned Toll-free number is available for NIEPMD to contact and get the required technical support.

Toll-Free Number: _____

Details of OEM representative providing the MAF:

Name: _____

Designation: _____

Contact No.: _____

Address: _____

Thanking You,

For <OEM Name>,

Sign and Seal