



राष्ट्रीय प्रौद्योगिकी संस्थान मणिपुर
NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR

Imphal, Manipur, Ph.(0385) 2058566 / 2445812

E-mail : director@nitmanipur.ac.in , Website : www.nitmanipur.ac.in

An Autonomous Institute under Ministry of Education, Govt. of India.

No. No.NITM.1/(25-Estt)/Internet/2016/1675

Imphal, the 20th December, 2022

**NOTICE INVITING TENDER FOR SUPPLY AND INSTALLATION OF INTERNET
WIFI CONNECTION FOR BOYS AND GIRLS HOSTELS.**

National Institute of Technology Manipur invites sealed rate Quotations from Authorized firms/dealers/agencies/suppliers for **supply and installation of internet wifi connection for boys and girls hostels** in two-bid system i.e, Technical Bid and Financial Bid.

The sealed rate Quotations should reach to **'The Registrar, National Institute of Technology Manipur, Langol – 795004'** on or **before 3.00 p.m. of 10/01/2023**. Incomplete or those received without Tender Fee, EMD and after due date and time shall be summarily rejected.

National Institute of Technology Manipur reserves the right to extend the date, or cancel the tender, accept or reject any/all quotations or not to purchase all or any of the items without assigning any reason thereof. The EMD of successful/unsuccessful tenderers shall be returned without interest. **Tender documents will be opened on 11/01/2023 at 1:00 PM** in the Institute's Conference Hall in presence of the tenderer(s) or their authorized representative(s), who are present at the scheduled date and time. The complete Tender documents and terms & conditions are available in the institute web site <http://www.nitmanipur.ac.in> & **eProcurement**. Detail specification of the item/items is given in **Annexures**.

Note: Any addendum/corrigendum/notifications will be published in the Institute website: www.nitmanipur.ac.in.

Sd/-
Registrar, NIT Manipur



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Instruction to Bidders

1. The tenderers are required to submit Earnest Money Deposit of Rs. 20000/- (**Rupees twenty thousand**) only which is refundable and a non-refundable tender fee of **Rs. 1000/- (Rupees one thousand)** only in the form of Demand Draft/Banker's Cheque in favour of Director, NIT Manipur payable at State Bank of India, Secretariat Branch, Imphal should be submitted along with the Tender documents. Tenders without EMD and Tender Fee will be rejected.
2. Offer in the financial bid should be written in English and price should be written both in figures and words. The offer should be typed or written in ink pen or ball pen. Use of pencil will be ignored. The relevant supporting documents as required must be enclosed.
3. Tenders should be submitted in two parts, (i) Part – I (Technical Bid) & (ii) Part – II (Financial Bid).
Envelope of Part – I should be superscripted as '**Technical Bid for supply and installation of internet wifi connection for boys and girls hostels**' and
Envelope of part – II should be superscripted as '**Financial Bid for supply and installation of internet wifi connection for boys and girls hostels**'
4. Envelopes of technical bid & financial bid should be individually sealed and placed in third envelope to be sealed and superscribed as '**Tender for supply and installation of internet wifi connection for boys and girls hostels**' along with Advt. No. in bold letters at the top of the envelope should reach to '**The Registrar, National Institute of Technology Manipur, Langol – 795004**' on or before **3.00 p.m. of 10/01/2023**. Incomplete or those received without Tender Fee, EMD and after due date and time shall be summarily rejected. National Institute of Technology Manipur reserves the right to extend the date, or cancel the tender, accept or reject any/all quotations or not to purchase all or any of the items without assigning any reason thereof.
5. All interested Authorized Dealers/Agencies/Suppliers are requested to submit their tender papers, as per **Annexure-I, Annexure-II, Annexure-III & Annexure-IV** quoting the best rate/price. Price of old batteries must be mentioned separately under buy-back. Rate of battery minus buy-back of battery will be taken for considered.
6. No tender will be entertained by E-mail or FAX.
7. **Tender documents will be opened on 11/01/2023 at 1:00 PM** in the Institute's Conference Hall in presence of the tenderer(s) or their authorized representative(s), who are present at the scheduled date and time.
8. In the event of the due date of receipt and opening of the tender being declared as a holiday for the Institute, the due date of receipt/opening of the tender will be the next working day at the same time.
9. The tenderers are requested to read the tender document carefully and ensure to comply with

all the instructions herein. Non-compliance of the instructions contained in this document may disqualify the tenderer from the tendering exercise.

10. Payment shall be made only after receipt of the materials/articles in good and working conditions as per specifications and after satisfactory installation and commissioning of the equipments/machinery/accessories.
11. Installation should be made within 30 (thirty) days from the date of issue of purchase order.

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ANNEXURE – I

DETAILS OF THE AUTHORIZED FIRMS/DEALERS/AGENCIES/SUPPLIERS

1	Name of the Firms/Agencies/Manufacturer/Authorized Dealer	
2	Registered Office address Telephone Number Fax Number e-mail	
3	Correspondence/contact address	
4	Details of Contact Person (Name, designation, address etc.) Telephone Number (including Mobile No) Fax Number, e-mail	
5	Is the firm a registered company? If yes, submit documentary Proof. Year and Place of the establishment of the company	
6	Former name of the Company, if any.	
7	Is the firm *Government/ Public Sector Undertaking *Propriety firm *Partnership firm (if yes, give partnership deed) *Limited company or limited corporation *Member of a group of companies(if yes, give name and address and description of other companies) * Subsidiary of a large corporation (if yes give the name and address of the partner organization) If the company is subsidiary, state what is the involvement of the parent company in the project.	
8	GST Certificate of the firm	
9	Is the firm registered under Labour Laws Contract Act? If yes, submit valid registration certificate.	
10	Attach the organizational chart showing the structure of the organization. Total number of employees	
11	Details of EMD Fee in favor of Director, NIT Manipur (Attach copy of proof)	EMD Fee: Rs.
11	Latest Income Tax Clearance Certificate	
12	Are you registered with any Government/ Department/ Public Sector Undertaking as Small Scale Industry (if yes, give details)	



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ANNEXURE – II

TECHNICAL BID (PRE-QUALIFYING REQUIREMENT)

For supply and installation of internet WiFi connection for boys and girls hostels.

Technical Specifications

1. Indoor Access Point Qty: 30 Nos

Sl. No.	Technical Specification	Technical Compliance (Yes/No)
1	Proposed AP should support central controller-based management	
2	AP shall have hardened enclosures for indoor deployment and shall have a robust design for durability	
3	It shall have dual radios for concurrent dual band (5 GHz / 2.4 GHz) operation	
4	It shall have Simultaneous 300 Mbps on 2.4GHz and 800 Mbps on 5GHz Wi-Fispeeds	
5	Minimum Two (2) numbers of 1 Gbps Ethernet port RJ-45 for Uplink and Downlink	
6	AP shall support Outfitted with the latest 802.11ac Wave 2 technology with Multiuser MIMO	
7	The AP shall comply with IEEE 802.11ac at a minimum and be backwards compatible to IEEE 802.11a/b/g/n standards.	
8	AP shall operate at least in full 2X2:2 MIMO or more mode without any loss offeatures or capabilities	
9	AP shall Support PoE 802.3af and passive PoE for convenient and affordable installation	
10	AP must support 20 MHz, 40 MHz and 80 MHz channels.	
11	Each AP must work on Dual band both 2.4GHz and 5GHz radios).	
12	The AP shall provide a minimum of 19 dBm EIRP for 2.4 GHz and 22 dBm for 5 GHz frequencies. Field deployment shall be with EIRP as per regulatory guidelines.	
13	AP shall support QoS and WMM latest technology	
14	AP shall support Multiple operating modes including managed AP and standalone AP mode	
15	AP shall support Band Steering, Beam forming, and Load Balance features	
16	AP shall support rogue access point detection	
17	AP should support management VLAN	
18	AP should support Captive portal and Rate limit feature	
19	AP shall support Reboot Schedule, Wireless Schedule and Wireless Statisticsbased on SSID/AP/Client	

20	Intelligent RF control plane for self-healing, and self-optimization	
21	AP Shall support Wireless Mac Address Filtering, Wireless Isolation Between Clients and SSID to VLAN Mapping	
22	AP shall support 802.1X authentication and external radius server	
23	AP shall be able to assign end User the IP address as received from backend core DHCP Server.	
24	AP Shall support SDN Technology & ZTP from Day 1	
25	Controller shall Manage Multiple Sites with the Centralized Controller in a Single Location	
26	Controller shall Intuitive Real Time Monitoring and data usage	
27	Controller shall support remote upgrade and access control features	
28	Shall support L3 management, SNMP, Email notification and Telnet feature	
29	Warranty and support should be for 3 years	

2. 24-Port POE Switch Qty: 2 No

Sl. No.	Technical Specification	Technical Compliance (Yes/No)
1	The LAN switch shall be rack mountable with 24 Nos. 10/100/1000 Base-T ports with 4 Nos. 10 Gig SFP+ Ports from day 1. (Each Switch Should be populated with 2 No. Single Mode LX Transceiver LC Type)	
2	The LAN switch shall be available with minimum 128 Gbps Switching Fabric.	
3	The LAN switch shall have minimum packet forwarding rate of 95 Mpps at 64-byte packet length.	
4	The LAN switch shall support minimum 16K MAC addresses.	
5	There shall be 1000 IGMP groups.	
6	The switch shall be able to work on both Ipv4 and Ipv6 (dual stack) from day one.	
7	The LAN Switch must have 24x 802.3at/af-compliant PoE+ ports with a total PoE power supply of 382 Watt.	
8	All ports in the switch shall operate at wire-speed / line-rate.	
9	The LAN switch shall support IEEE 802.1Q VLAN encapsulation. Maximum 4K VLAN Groups.	
10	It shall support for Automatic Negotiation of Trunking Protocol, to help minimize the configuration & errors.	
11	It shall support centralized VLAN Management. VLANs created on the Core Switches shall be propagated to all the other switches automatically, thus reducing the overhead of creating /modifying / deleting VLANs in all the switches in turn eliminating the configuration errors & troubleshooting.	
12	It shall support 802.1d, 802.1p, 802.1Q, 802.1s, 802.1w, 802.1x, 802.1ab, 802.3ad.	
13	It shall support spanning-tree root guard or any other industry standard protocol to prevent other edge switches becoming the root bridge.	
14	It shall support IGMP snooping v1, v2, v3 and Link Aggregation Protocol (LACP).	
15	It shall Support 802.3ah Ethernet Link OAM for Detection of Unidirectional links and to disable them to avoid problems such as spanning tree loops	
16	It shall be able to discover the neighbouring device of the same vendor giving the details about the platform, IP Address, Link connected through etc., thus helping in troubleshooting connectivity problems.	
17	It shall support for Switch port auto recovery (Err disable) to automatically re-enable a link that is disabled because of a network error.	
18	It shall support Multicast VLAN registration.	
19	It shall support LLDP / LLDP-MED including client location information. It shall exchange link and device information in multi-vendor networks.	
20	It shall support configuration rollback to replace current configuration with any saved configuration file.	
21	It shall support configurable maximum transmission unit (MTU) of up to 9000 bytes, with a maximum Ethernet frame size of 9018 bytes (Jumbo frames) for bridging on Gigabit Ethernet ports.	
22	It shall support auto sensing speed on 10/100/1000 ports, auto negotiating half/full-duplex on all ports and Auto-MDIX.	
23	The LAN switch shall have per-port broadcast, multicast, and unicast storm control.	

24	It shall have standard 802.1p CoS and DSCP classification using marking and reclassification on a per-packet basis by source and destination IP address, source and destination MAC address, or Layer 4 TCP or UDP port number.	
25	There shall be eight egress queues per port to enable differentiated management of up to eight traffic types.	
26	There shall be Weighted Round Robin (WRR) or any other industry standard protocol to provide congestion avoidance.	
27	There shall be strict priority queuing mechanisms.	
28	Granular Rate Limiting functions to guarantee bandwidth in increments shall be as low as 64Kbps.	
29	Rate limiting support based on source and destination IP address, source and destination MAC address, Layer 4 TCP and UDP information, or any combination of these fields, using QoS ACLs (IP ACLs (IPv4 and IPv6) or MAC ACLs), class maps, and policy maps shall be available. ACL should be based on user defined packet content (Max. 6 bytes length user defined).	
30	There shall be support for Asynchronous data flows upstream and downstream from the end station or on the uplink using ingress policing and egress shaping.	
31	There shall be support for Automatic Quality of Service for easy configuration of QoS features for critical applications.	
32	The LAN switch shall support IEEE 802.1x to allow dynamic, port-based security, providing user authentication.	
33	The LAN switch shall support for Admission Control features to improve the networks' ability to automatically identify, prevent, and respond to security threats and also to enable the switches to collaborate with third-party solutions for security-policy compliance and enforcement before a host is permitted to access the network.	
34	It shall support port-based ACLs (PACLs) for Layer 2 interfaces to allow application of security policies on individual switch ports. It shall also support VLAN based filters.	
35	It shall support unicast MAC filtering to prevent the forwarding of any type of packet with a matching MAC address. It shall support Unicast and Multicast MAC addresses and associated VLANs.	
36	It shall support unknown unicast and multicast port blocking to allow tight control by filtering packets that the switch has not already learned how to forward.	
37	It shall support IGMP filtering which shall provide multicast authentication by filtering out non-subscribers and limits the number of concurrent multicast streams available per port.	
38	It shall support for SSHv2, SNMPv3 to provide network security by encrypting administrator traffic during Telnet and SNMP sessions.	
39	The switch shall support 2 sessions of Port Mirroring based on port basis / VLAN basis to support intrusion prevention system deployment in different VLANs. It shall support bidirectional data on mirror port which allows IDS to take action when an intruder is detected.	
40	It shall support RADIUS authentication to enable centralized control of the switch and restrict unauthorized users from altering the configuration.	
41	It shall support MAC address notification to allow administrators to be notified of users added to or removed from the network / It shall support SNMP Trap for new MAC notification.	
42	It shall support DHCP snooping to allow administrators to ensure consistent mapping of IP to MAC addresses. This can be used to prevent attacks that attempt to poison the DHCP binding database, and to rate limit	

	the amount of DHCP traffic that enters a switch port.	
43	It shall support DHCP Interface Tracker (Option 82) to augment a host IP address request with the switch port ID.	
44	It shall support port security to secure the access to an access or trunk port based on MAC address. After a specific timeframe, the aging feature should remove the MAC address from the switch to allow another device to connect to the same port.	
45	It shall support multilevel security on console access to prevent unauthorized users from altering the switch configuration.	
46	It shall support BPDU Guard feature, to shut down Spanning Tree Protocol PortFast-enabled interfaces when BPDUs are received to avoid accidental topology loops.	
47	It shall support Spanning-Tree Root Guard (STRG) to prevent edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes.	
48	It shall support for up to 512 access control entries (ACEs).	
49	The LAN switch shall have CLI support to provide a common user interface and command set with all routers and switches of the same vendor.	
50	It shall have Remote Monitoring (RMON v1 and v2) software agent to support for enhanced traffic management, monitoring, and analysis.	
51	It shall have support for RMON groups through the use of a mirrored port, which permits traffic monitoring of a single port, a group of ports, or the entire switch from a single network analyser or RMON probe.	
52	It shall have layer 2 trace route to ease troubleshooting by identifying the physical path that a packet takes from source to destination or it shall support OAM 802.3ah.	
53	It shall support Trivial File Transfer Protocol (TFTP) and File Transfer Protocol (FTP) to reduce the cost of administering software upgrades by downloading from a centralized location.	
54	It shall support Simple Network Time Protocol/Network Timing Protocol (SNTP/NTP) to provide an accurate and consistent timestamp to all intranet switches.	
55	It shall support RMON v1 and v2 standards.	
56	It shall support SNMPv1, SNMPv2, and SNMPv3 and Telnet interface to deliver comprehensive in-band management, and a CLI-based management console to provide detailed out-of-band management.	
57	It shall support IPV6 management. ACL and QoS and Ipv6 Neighbour Discovery.	
58	It Shall Support SDN Platform and have Provision to be Work Standalone or Controller Based and support Zero-Touch Provisioning (ZTP)	
59	Must have 3 years warranty and support	

3. 8-Port POE Switch Qty: 1No

Sl. No.	Technical Specification	Technical Compliance (Yes/No)
1	Device should support IEEE 802.1w, IEEE 802.1q, IEEE 802.1p, IEEE 802.1x, IEEE 802.3ad, IEEE 802.3x, IEEE 802.1d, IEEE 802.1s, IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab Standards and Protocols	
2	Device must have at least 8 Gigabit RJ45 PoE+ Ports with 2 SFP Ports with autonegotiation/auto MDI/MDIX	
3	Device must support POE 802.3af/at with Minimum 150 W of total PoE PowerBudget	
4	Device should have Switching Capacity of 20 Gbps and Packet Forwarding Rate 14.8 Mpps or more	
5	Device should have MAC address table of 8K or more	
6	Device should support jumbo frame of 9KB	
7	Device should Support QOS features like Port-based, 802.1p and DSCP priority	
8	Device should Support QOS features like 8 priority queues	
9	Device should Support QOS features Queue scheduling: SP, WRR, SP+WRR	
10	Device should Support QOS features Port/Flow- based Rate Limiting	
11	Device should Support Voice VLAN	
12	Device should Support Layer 2 features like IGMP Snooping V1/V2/V3	
13	Device should Support 802.3ad LACP and Up to 8 aggregation groups containing 8 ports per group	
14	Device should Support Spanning Tree features like STP/RSTP/MSTP	
15	Device should Support BPDU Filtering/Guard and TC/Root Protech, Loop backdetection and 802.3x Flow Control	
16	Device should Supports up to 512 VLANs simultaneously of 4K VLAN IDs	
17	Device should support ACL features like L2 to L4 package filtering based on source and destination	
18	Device should support ACL features like MAC address, IP address, TCP/UDP ports, 802.1p, DSCP, protocol and VLAN ID Time Range Based	
19	Device should support security features like SSH v1/v2 and SSL v2/v3/TLSv1	
20	Device should support features like Broadcast/Multicast/Unknown unicast StormControl	
21	Device should support security features like 802.1x and Radius Authentication, IP-Mac-Port VID Binding, ARP Inspection, DHCP Snooping and DoS Defend	
22	Device should support AAA and Time Setting like SNTP, TFTP & Web	
23	Device should support Web-based GUI and CLI management	
24	Device should support SNMP v1/v2c/v3, compatible with public MIBs and RMON(1, 2, 3, 9 groups)	
25	Device should support CPU Monitoring and Port Mirroring	
26	Device should support System Diagnose, SYSLOG & Public MIBS	
27	Device should be certified by FCC, CE and RoHS	
28	Should have warranty and support for 3 Years	

4. Wireless Controller Qty: 1 No

Sl. No.	Technical Specification	Technical Compliance (Yes/No)
1	Controller should be Hardware based and must be loaded with 400 no. Access points Perpetual licenses from day 1 and expandable up to 500 in future without changing the base hardware.	
2	Controller should support up to 15000 clients from day 1	
3	Controller should have capability to Control, Configure, Manage and Monitor both Indoor and Outdoor Access Points	
4	Shall Support authentication method like SMS authentication	
5	Controller shall Manage Multiple Sites with the Centralized Controller in a Single Location	
6	Controller shall Intuitive Real Time Monitoring and data usage	
7	Controller shall support remote upgrade and access control features	
8	Shall support L3 management using standard SNMP / SSH / Telnet Protocols	
9	Access Control and Rogue AP Detection protect the network from threats	
10	Rate Limit and Load Balance ensure the network stability and efficiency	
11	Configure and automatically synchronize unified wireless settings to all Aps in the network	
12	Upload floor plans to visualize and optimize network resource deployment	
13	View the real-time traffic status of each AP, including the number of clients and volume of data usage	
15	Controller shall have 3 years warranty and support	

5. Wireless Bridge Qty: 2-Pair

Sl. No.	Minimum Specifications	Technical Compliance (Yes/No)
1	Should support IEEE 802.11 a/n/AC (5.15~5.85GHz)	
2	Should have Qualcomm based Chipset with 128 MB DDR2 RAM, 16 MB Flash	
3	Should support Data rate up to 867 Mbps : MIMO Technology -2X2 and LAN Port of 10/100/1000 Mbps	
4	PoE & Injector -10/100/1000Mbps .	
5	Directional Antenna	
6	Antenna angle should have 9°(Azimuth), 7°(Elevation)	
7	Should support IP65 or higher certification	
8	Should support point-point Operation	
9	Should be OFDMBPSK, QPSK, 16QAM, 64QAM Modulation	
10	Should have atleast 1 10/100 Mbps Ethernet port	
11	Should support 5MHz/10MHz/20MHz/40MHz/80Mhz Channelization	
12	Receiver gain should be -89 dBm or better	
13	Transmission power should be 23 dBm or better	
14	RF power should be 200 mW or more	
15	Should support 64/128-bit WEP, WPA, WPA-PSK, WPA2-PSK encryption	
16	Antenna gain should be 23dBi MIMO(dual polarization)	
17	Should have power supply ranging Voltage range: 16-27VDC	
18	Should support DFS	
19	Should support centralized management	
20	Should support Multi Mode of Operation like Client, Client Router , AP ,AP Router and Bridge Mode	
21	Should support spectrum analysis	
22	Should support TDMA protocol for enhancing throughput	
23	Should support hardware watch dog, DoS protection	
24	Should support Multi-SSID with VLAN tagging	
25	Should support Auto channel selection	
26	The Access point shall be rated for operation over an operating temperature range of -20°C to 70°C or higher	
27	Should be CE, FCC, IC, RoHS, IP65	
28	Should Have 15KV ESD Protection and 6KV Lightning Protection	
29	Supply and installation poles with mounting	
30	Three year service support as per manufacturer	

6. 6U Wall mount rack Qty: 3 No

Sl. No.	Features	Item Specifications	Technical Compliance (Yes/No)
1	Height	6U Rack	
2	Door	Glass Door/6U	
3	Horizontal Manager	Horz. Cable Organiser/1U/Loop	
4	Power	1Ph, 230V, 8A, 2U standard rack mount power distribution unit with 6 X Indian Round Pin 5A, Inlet Plug type 6A Indian Round Pin, 8A Fuse - PDU Rating 1.8KVA	
5	Cooling	FAN	
6	Accessories	MountTray	
7	Rack Standard	6U Wall Mount Rack Should Conform to DIN 41494 or equivalent standard and ISO 9001-2008. Documentary evidence must be enclosed.	

7. CAT 6 UTP Cable : Qty: 4 Boxes

Sl. No.	Minimum Specifications	Technical Compliance (Yes/No)
1	The 4 pair Unshielded Twisted Pair cable shall be UL Listed.	
2	This cable well exceeds the requirements of ANSI/TIA-568-C.2 and ISO/IEC11801 Class E	
3	Nominal Outer Diameter of Cable should be 5.6 ± 0.2 mm and Conductor Diameter 0.49 ± 0.01 mm (23 AWG)	
4	Construction: 4 twisted pairs separated by internal PE Cross Separator. Full separator. Half shall not be accepted. Rip Cord is must.	
5	Conductor: Solid bare Copper, Outer jacket sheath: FRPVC with UL approved CM/CMR rated cable. Jacket color: Grey	
6	Insulation Material: High Density Polyethylene (HDPE) with Insulation Diameter: 0.89 ± 0.01 mm	
7	Dielectric Strength of cable should be 2.5 KVDC for 2 seconds	
8	Bending Radius : < 4X Cable Diameter at $-20^{\circ}\text{C} \pm 1^{\circ}\text{C}$ Pulling Force: 25.35 lbs	
9	Electrical Parameters: Insertion loss (Attenuation), NEXT, PSNEXT, ELFEXT (ACRF), PSELFEXT (PSACRF), Return Loss, ACR and PS ACR.	
10	Insertion Loss of 32.8 db/100m at 250 MHz	
11	Cable should support operating temperature from -20° to $+70^{\circ}\text{C}$	
12	Cable support Conductor Resistance $\leq 9.38 \Omega/100\text{m}$ Max.	
13	Mutual Capacitance of cable should be $< 5.6 \text{ nF}/100\text{m}$ Max.	
14	Resistance Unbalance of cable should be 5% Max.	
15	Capacitance Unbalance of cable should Max. 330 pF/100m	
16	Cable support Delay Skew: $< 45 \text{ ns}/100\text{m}$, Operating Voltage: 72V	
17	Nominal Voltage of Propagation (NVP): 69% and Current Rating: 1.5 A Max.	
18	Impedance: $100 \pm 15 \Omega$ @ 100 MHz and Propagation Delay @ 250 MHz: 536ns/100m	
19	ETL Verified 4 connector channel performance upto 250 MHz	

20	RoHS Compliant	
21	Printed sequential Length Counter of each meter on Outer Jacket	
22	Category 6 UTP cables shall Supports Gigabit Ethernet (1000 base-T) standard and operates at bandwidth of 250MHz	
23	Passive OEM should be ISO 9001:2015 and ISO 14001:2015	

8. UTP Patch Cord (1m & 2m) Qty: 30 Nos 1 Mtr & 20 Nos 2 Mtr

Sl. No.	Minimum Specifications	Technical Compliance (Yes/No)
1	Category 6 patch cords with four pair twisted stranded copper wire cable terminated with RJ45 modular plugs at both the ends.	
2	Patch Cords 100% factory tested for better quality and suitable for the high speed data transmission.	
3	Complies with the ANSI/TIA/EIA-568-C.2, ISO/IEC 11801, RoHS compliant Standard. Supports Data Networks Speeds Up to 10/100-Base-T and 1000-Base-T.	
4	Patch cord with LSZH jacket to reduced toxic/corrosive gasses emitted during combustion	
5	Transparent modular plugs with transparent slip-on boot and cable assemblies	
6	T568B wiring scheme crimped at both connector ends.	
7	Available in different colors and different length on request	
8	Patch cord conductor: 24 AWG, Stranded copper wires, Insulation: HDPE	
9	Connector Plug: 30μ" Gold plated contact, Phosphor Bronze base material	
10	Jacket Diameter: 5.8 ± 0.1mm	
11	Plug Insertion/Extraction Life: 750 Cycles min. using FCC approved plug	
12	Plug & Jack Contact Force: 100 Grams min. using FCC approved plug	
13	Plug Retention Force : 11 lbf min.	
14	Current Rating: 1.5 amps, Voltage Rating: 72 Vdc max.	
14	Insulation Resistance : 500MΩ min, Contact Resistance : 20mΩ max, DC Resistance: 0.1Ω max.	
15	ETL Verified 4 connector channel performance upto 250 MHz	
16	Operating Temperature : -20 °C to +70° C	
	Installation Temperature : -20 °C to +70° C	

9. 24 Port Cat 6 UTP Patch Panel; Qty: 3 Nos.

Sl. No.	Minimum Specification	Technical Compliance (Yes/No)
1	The Cat-6 transmission performance is in compliance and Exceeds ANSI/TIA/EIA-568-C.2 Standard. Supports 1000-Base-T.	
2	90 Degree (Top Entry) Punch Down Design for Convenient Network Terminations.	
3	Ease of Installation with built in Rear Cable Management.	
4	Removable Module Design	
5	6x4 Module Specially Designed Jack Configuration	
6	PCB: FR4, 1.6mm Thickness 2 Layers	
7	Jack Wire: 30μgold plating over 40μ ~ 80μ nickel plating (Square Wire,360°plated)	
8	IDC Conductor : 0.5 mm Phosphor Bronze (Base Material), 100μ Tin Plating	
10	Contact Compatibility: 22~26 AWG Stranded and Solid Wires	
11	1U Patch Panel to Mount In any Standard Rack. Panel Frame : SPCC PowderCoating In Matt Finish Black Color.	
12	Housing : High Impact Flame Retardant Plastic, UL 94V-0 Rated	
13	Easy Port Labeling Identification Provision	
14	Electrical Characteristics:	
a	Current Rating : 1.5amps	
b	Insulation Resistance : >= 500mΩ	
c	Contact Resistance : <=10mΩ	
d	DC Resistance : <=0.1Ω	
e	DC/AC Volt Endurance : DC 1000V/AC 750V 1 Min	
15	Mechanical Characteristics:	
a	Plug Insertion Life : >= 750 Cycles with FCC Compliant RJ-45 Plug	
b	Plug & Jack Contact : >= 100 Grams with FCC Compliant RJ-45 Plug Force	
c	Plug Retention Force : >= 11 LBF	
d	Durability : 200 Termination Cycles	
e	Operating Temperature : -10 Degree ~ 60 Degree	
f	Operating Humidity : 10% ~ 90% RH	
g	Storage Temperature : -40 Degree ~ 68 Degree	
16	Standard Verification:	
a	ANSI/TIA-568-C.2	
b	ISO/IEC 11801:2002/AMMD.2:2010	
d	ISO/IEC 60603-7 Compliant	
e	RoHS Directive 2002/95/EC/Compliant	

10.1-U Sliding Fibre panel rack-mount 24-port Qty: 1

Sl. No.	Minimum Specification	Technical Compliance (Yes/No)
1	The Fiber Rackmount LIU unloaded having Adapter panel fixed on drawer baseframe, without Adapters and without Pigtails, but assembled with splice tray as per the fiber port requirement and their applicable accessories.	
2	Suitable to mount at different positions (depth wise) on standard 1U 19 inch racks. Drawer type to pull out for easy maintenance when assembled in racks.	
3	Cold Rolled Steel material with black powder coating	
4	Three types of cable entry holes for different size cables through cable glands, covered with rubber cable grommets/covers.	
5	Splicing of 24 fibers in each plastic fiber splicing trays with integrated cables pool design.	
6	Non removable top cover and no rear cover. Drawer type to pull out for better access of interior.	
7	Suitable for assembling 6/12/24/48 (SC/LC, Simplex/Duplex) adapters on rackmount ports.	
8	Accessories kit consists of Cable management rings/Cable saddles (6 nos), Cable glands (PG13.5, 2 nos), Splice rods (24/48 nos), Blanking clips (24 nos), Velcro ties (12 nos.), Cable ties (6 nos.), Cable inlet/outlet hole covers (2 types, 2 nos each)	
9	Cable management rings/Cable saddles can be mounted inside the rackmount, no provision to mount outside in front of the adapter panel.	
10	Suitable for storing up to 3 meters of 900 µm tight buffered fiber pigtail per adapter.	
11	Panel Dimensions : 482 x 220 x 44.3 mm (Length x Width x Height)	
12	Splice Tray Dimensions : 220 x 90 x 15 mm (Length x Width x Height)	
13	Port identification numbers printed on the Adapter panel	
14	Standards: Comply as per ANSI/TIA-568-C.3, ISO/IEC 11801, RoHS Compliant.	
15	Operating Temperature : -20 °C to +70° C	
	Installation Temperature : -20 °C to +70° C	

11. Adaptor plate with 6 SC simplex SM adaptors Qty: 4Nos

Sl. No.	Minimum Specification	Technical Compliance (Yes/No)
1	Types of Adapter SC, LC both in Single mode and Multimode, Simplex and Duplex Versions	
2	Should be able to snap mount with metal clip or screw mount	
3	Main body made of Plastic (Polyetherimide) for LC type and (Polybutyleneterephthalate) for SC type	
4	Sleeve Material: Zirconia Sleeve (for Single mode) and Zirconia/Phosphor Bronze sleeve (for Multimode)	

5	Push Pull latching system mechanism for patchcord or pigtail	
6	Colour of Adapters: PC type (Blue-SM, Beige-MM) APC type (Green-SM)	
7	Plastic cover/cap on both sides of the adapters to prevent dust entry	
8	Insertion Loss should be ≤ 0.3 dB.	
9	Plug Retention Force should be 68N minimum	
10	Durability should be ≤ 0.3 dB for 1000 matings.	
11	Storage Temperature : -20°C to +70°C	
	Installation Temperature : -20°C to +70°C	
	Operating Temperature : -20°C to +70°C	
12	Standards: Comply to ANSI/TIA-568-C.3, ISO/IEC 11801, RoHS Compliant,	

12. SC simplex single-mode LSZH pigtail, 1m Qty: 24 Nos

SL	Minimum Specification	Technical Compliance (Yes/No)
1	Fiber optic pigtail with one core (Simplex) fiber cable terminated with SC/LC/ST/FC connector at one end and no connector at other end.	
2	The terminated connectors in assemblies are designed and are compatible with industry standards (ANSI/TIA-568-C.3, ISO/IEC 11801).	
3	Have good geometrical characteristics of apex offset & radius of curvature & fiber height	
4	100% factory terminated and tested for optical characteristics & fiber end face finish.	
5	Fiber type bend insensitive G. 652D standard. OS2 (9/125 μ m Corning Clear Curve),	
6	Tight Jacketed fiber with Cable Diameter: 0.9 ± 0.05 (Simplex)	
7	Jacket colour : Yellow, Jacket Material : LSZH	
8	Connector Ferrule : Ceramic, Apex Offset should be $< 50\mu$ m, Fiber height should be ± 100 nm	
9	Connector Repeatability ≤ 0.2 dB with 1,000 times mating cycles.	
10	Connector cable retention : 3 N (0.67 lbs), Crush resistance : 100N/100mm, Bend Radius: 10xDiameter of cable	
11	Attenuation : ≤ 0.36 dB/km (@1310 nm), ≤ 0.25 dB/km (@1550 nm)	
12	Chromatic Dispersion : ≤ 3.5 ps/nm.km (@1285 - 1330 nm), ≤ 18 ps/nm.km (@1550 nm)	
13	Zero Dispersion Wavelength : 1300 - 1324 nm	
14	Cut-off Wavelength : ≤ 1260 nm	
15	Mode Field Diameter : 9.2 ± 0.4 μ m (@1310 nm) , 10.4 ± 0.5 μ m (@1550 nm)	
16	Insertion Loss (@1310 & 1550nm) : SM (UPC/PC) Type : SC/LC/ST/FC : ≤ 0.3 dB Return Loss (@1310 & 1550nm) : SM (UPC/PC) Type : SC/LC/ST/FC : ≥ 50 dB	
17	Insertion Loss (@1310 & 1550nm) : SM (APC) Type : SC/LC/ST/FC : ≤ 0.3 dB Return Loss (@1310 & 1550nm) : SM (APC) Type : SC/LC/ST/FC : ≥ 60 dB	

18	Standards: IEC 60332-1, ANSI/TIA-568-C.3, ISO/IEC 11801 RoHS Compliant	
19	Installation Temperature : -20 °C to +70° C, Operating Temperature : -20 °C to +70° C	
20	Available in various length in meters	

13. Fiber Optics Patch cord SC-LC DPX SM LSZH 2M Qty:4Nos

Sl. No.	Minimum Specification	Technical Compliance (Yes/No)
1	Fiber optic patch cord with two core (Duplex) fiber cable terminated with LC connector at one end and SC connector at other end.	
2	The terminated connectors in assemblies are designed and are compatible with industry standards (ANSI/TIA-568-C.3, ISO/IEC 11801).	
3	Have good geometrical characteristics of apex offset & radius of curvature & fiber height	
4	100% factory terminated and tested for optical characteristics & fiber end face finish.	
5	Fiber type bend insensitive G. 652D standard. OS2 (9/125 μm Corning ClearCurve),	
6	Buffer Diameter: 0.9 ± 0.05 mm, Jacket Thickness : 0.35 ± 0.05 mm, Strength Member as Aramid yarn	
7	Cable Diameter : 2.0 x 3.8 ± 0.2 (Duplex)	
8	Jacket color : Yellow, Jacket Material : LSZH, Length : 3 Mtr	
9	Connector Ferrule : Ceramic, Apex Offset should be <50μm, Fiber height should be ±100nm	
10	Connector Repeatability ≤ 0.2dB with 1,000 times mating cycles.	
11	Connector cable retention : 50 N (11.24 lbs), Crush resistance : 100N/100mm, Bend Radius: 20xDiameter of cable	
12	Attenuation : ≤ 0.36 dB/km (@1310 nm), ≤ 0.25 dB/km (@1550 nm)	
13	Chromatic Dispersion : ≤ 3.5 ps/nm.km (@1285 - 1330 nm), ≤ 18 ps/nm.km (@1550 nm)	
14	Zero Dispersion Wavelength : 1300 - 1324 nm	
15	Cut-off Wavelength : ≤ 1260 nm	
16	Mode Field Diameter : 9.2 ± 0.4 μm (@1310 nm) , 10.4 ± 0.5 μm (@1550 nm)	
17	Insertion Loss (@1310 & 1550nm) : SM (UPC/PC) Type : SC/LC/ST/FC : ≤ 0.3 dB Return Loss (@1310 & 1550nm) : SM (UPC/PC) Type : SC/LC/ST/FC : ≥ 50 dB	
18	Insertion Loss (@1310 & 1550nm) : SM (APC) Type : SC/LC/ST/FC : ≤ 0.3 dB Return Loss (@1310 & 1550nm) : SM (APC) Type : SC/LC/ST/FC : ≥ 60 dB	
19	Standards: IEC 60332-1, ANSI/TIA-568-C.3, ISO/IEC 11801 RoHS Compliant	
20	Installation Temperature : -20 °C to +70° C, Operating Temperature : -20 °C to +70° C	

14. 1.5-inch PVC Casing-Capping Qty: 150 Mtr

Sl. No.	Minimum Specification	Technical Compliance (Yes/No)
1	1.5-inch PVC Casing-Capping: All UTP Laying or Electrical Wiring drawn shall beneatly covered by industry standard 1.5-inch ISI Marked PVC Casing-Capping.	

15. UPS Power Supply: 3 Nos

Sl. No.	Minimum Specification	Technical Compliance (Yes/No)
1.	3KVA online UPS power supply with Min 180 mins backup time.	

Bidders Eligibility Criteria:

List of Required Documents
The Bidder should be in IT Business for the last 15 Years.
The Bidder should be an Original Equipment Manufacturer (OEM) or an Authorized Partner of OEM. In case of Authorized partner of OEM, the bidder should submit Manufacturer Authorization Form (MAF)
The Bidder should be a Company Registered under the Companies Act, 1956/2013 since the last Seven years Incorporation Certificate to be submitted.
Bidders should have PAN, GSTIN and registered with Provident Fund and ESIC
Bidders should have net positive worth. Documentary evidence in this regard should be enclosed along with Technical Bid.
The Bidder should have a valid ISO 9001, ISO 20001; ISO 27001 Certificate. Certificate must be enclosed along with the technical bid
The Bidder & OEM should not have been blacklisted anywhere in India or abroad at any point of time.
A self –declaration letter by the Bidder from Director of the company, on the company's letter head should be submitted along with technical bid
Bidder should submit an OEM Authorization Letter from respective Manufacturers to be issued in the name of tender calling Person/Organization mentioning Bid No. and date for all quoted products and it shall be cross verified
The Bidder Should submit the Product Certifications

NIT Manipur New OBC Boys and Girls Hostel Networking Equipment

Active Component						
SL	Description	Qty	Unit Price	Total	Tax	Total with Tax
Active Component						
1	Indoor AP OBC Boys Hostel	10				
1.1	Indoor AP OBC Girls Hostel	10				
1.2	Indoor AP Girls hostel(Barrack)	5				
1.3	24 Port POE Switch	2				
1.4	8 Port POE Switch	1				
1.5	Wireless Bridge (1-Pair)	2				
1.5	Wireless Controller	1				
1.6	3 KVA online UPS with min 180 mins backup	3				
Passive Component						
2	6U Wall mount rack	3				
2.1	CAT 6 UTP Cable Box (305 Mtr Per Box)	3				
2.2	1 Mtr CAT 6 cable	30				
2.3	2 Mtr CAT 6 cable	30				
2.4	24Port Patch Panel	3				
2.5	6Core armoured FC Cable	300 Mts				
2.6	1U sliding fibre panel rack-mount 24-port with 1 splice tray	2				
2.7	Adaptor plate with 6 SC simplex SM adaptors	4				
2.8	Fiber Optics Blank Panel Plate	4				
2.9	SC simplex single-mode LSZH pigtail, 1m	24				
2.10	Fiber Optics Patch cord SC-LC DPX SM LSZH 2M	4				
2.11	1.5-inch PVC Casing-Capping	150				
Services Component						
3.1	Fixing of access point	25				
3.2	Fixing of Rack	1				
3.3	Laying of Casing capping	100				
3.4	Laying of UTP Cables	600				
3.5	Laying of 6Core FC cable(Overhead)	300				
3.5	Fixing of LIU	2				
3.6	Complete Installation and integration, Documentation and accessories	1				
Total Price Including Tax.						



राष्ट्रीय प्रौद्योगिकी संस्थान मणिपुर
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An Autonomous Institute under Ministry of Education, Govt. of India.

ANNEXURE - III

FINANCIAL BID

For supply and installation of internet WiFi connection for boys and girls hostels.

Sl. No.	Item	Total	GST (inclusive of all taxes & installation)	Grand Total
1	SUPPLY AND INSTALLATION OF INTERNET WIFI CONNECTION FOR BOYS AND GIRLS HOSTELS.			

Rupees (in words)



राष्ट्रीय प्रौद्योगिकी संस्थान मणिपुर
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An Autonomous Institute under Ministry of Education, Govt. of India.

ANNEXURE - IV

**DECLARATION REGARDING BLACKLISTING / DEBARRING FOR TAKING PART IN
TENDER.**

I / We Manufacturer / Partner(s)/
Authorized Distributor /agent of M/s hereby declare that the firm/company namely M/s.
..... has not been blacklisted or debarred in the past by
Union / State Government or organization from taking part in Government tenders in India.

Name:.....

Signature:.....

Date:.....