

**Dayalbagh Educational Institute  
(DEEMED TO BE UNIVERSITY)  
Dayalbagh, Agra**

**Notice Inviting Tenders**

**Limited Tender No. DEI/Education/NS/2019-20/TDR-01**

**Date: 29-04-2019**

Sealed tenders are invited from the Manufacturers/ Suppliers/Authorized dealers/ agencies for the supply and installation of the following:-

<b>S.No.</b>	<b>Item</b>	<b>Quantity</b>
1	<b>Items and their quantities as per listed at Annexure-I Locations of installation as per Annexure-II Specifications as per Annexure-III</b>	As per list

The tenderer shall be required to submit the Earnest Money Deposit (EMD) for an amount of **Rs.30,000/-** by way of demand drafts/banker's cheque/FDRs which is refundable and a non-refundable tender fee for an amount of **Rs.200/- (Rupees two hundred only)** by Cash or Demand draft. The demand drafts shall be drawn in favour of "**Registrar, Dayalbagh Educational Institute, Agra**" payable at Agra. The demand drafts (validity 45 days beyond final bid) for earnest money deposit & tender fee must be enclosed in the envelope containing the bid documents with Tender number marked on the envelope addressed to:

**"The Registrar  
Dayalbagh Educational Institute,  
Dayalbagh, Agra – 282005,  
Uttar Pradesh"**

**Note:** Central Purchase Organization, Small Scale Industries/ National Small Scale Industries Corporation shall be exempted from payment of Earnest Money Deposit. Tenderers seeking exemption should enclose a self attested photocopy of valid registration certificate with NSIC. (The Earnest Money will be liable to be forfeited if quotation is not honored or if contract is not signed with the Institute, after the award is made to the Tenderer)

1. Time and last date of submission of the Bid: 11.00 am on 20.05.2019
2. Time of Bid Opening: 11.30 am on 20.05.2019
3. Venue of Bid Opening: CAO, Dayalbagh Educational Institute, in the presence of bidders who want to be present at the time of opening of bid.

Interested Contractors/Suppliers/Authorized dealers may put the tender document complete in all respect and other requisite documents in the tender box kept in the General Section, CAO, Dayalbagh Educational Institute, Dayalbagh, Agra- 282005. The bidders are also informed that they may come personally or send their representative to be present at the time of opening of bid. Please note that tender box shall be opened at the time mentioned above irrespective of whether bidders himself or any of their representative are present or not. The tenders shall not be entertained after this deadline under any circumstances what so ever. For more details please visit the institute's website <http://www.dei.ac.in> or contact Prof. K. Srinivas-7895567605.

Registrar  
Dayalbagh Educational Institute Dayalbagh,  
Agra-282005

## Annexure-I

<b>S.No.</b>	<b>Item Description</b>	<b>Quantity</b>
1.	Long haul radio Air Fiber 5U Radio	02
2.	Long haul radios	02
3.	Power Beam 500 AC Radio	16
4.	Power Beam 620 AC	08
5.	Network Switch: 1 Gbps 24 manageable switch with POE ports	12
6.	Outdoor CAT 6 LAN Cable Bundles	15 bundles
7.	9U Rack	08
8.	Patch Panel IO Ports	10
9.	Cable Guides	20
10.	Dual band wifi outdoor access point with radiation pattern above 2000	06
11.	Dual band wifi outdoor access point with radiation pattern above 4000	02
12.	Rigger charges /Installation charges	

## **Annexure-II**

All items are to be delivered to the following location:

**C/O Shri D.S. Kapoor or D. Sumir  
Principal,  
DEI ICT Center,  
Village Rajaborari, Tehsil Timarni  
District Harda, M.P. (461228)  
(55 km. from Timarni Railway Station towards Betul National Highway**

The items are to be installed in the following locations:

1. Timarni (Timarni to Mahagaon 40 km. air link)
2. Rajaborari Estate
  - (i) Mahagaon
  - (ii) Rajaborari – DEI ICT Center  
BSNL Tower
  - (iii) Salai(School)
  - (iv) Gulardhana (school)
  - (v) Temrubahar (school)
  - (vi) Marapadol(school)
  - (vii) Mahagaon

1. Time and last date of submission of the Bid:
2. Time of Bid Opening:
3. Venue of Bid Opening: Conference Hall, CAO, Dayalbagh Educational Institute.

Interested Contractors/Suppliers/Authorized dealers may put the tender document complete in all respect and other requisite documents in the tender box kept in the General Section, CAO, Dayalbagh Educational Institute, Dayalbagh, Agra- 282005. The tenders shall not be entertained after this deadline under any circumstances whatsoever.

**Registrar  
Dayalbagh Educational Institute**

### **Note:**

- Transportation cost/Rigger Charges/Installation Charges must be mentioned of all material by the bidder.
- Successful bidder shall accord facility for inspection/testing of material at their site by a team of institute engineers before start of delivery, if deemed necessary.
- Please refer the specification. Specifications of all the items are attached.

## General Terms & Conditions

**Note:** Bidders must submit the following primary information/documents with the quotation. Bidders will have to indicate these particulars in their quote failing which the offer may be rejected. Please do produce the related documents whenever required by the Institute.

1. Trade License/Company Registration No.
2. Goods / Service Tax Regn. No.
3. Income Tax PAN No.
4. Firm's Bank A/c details
5. Bidders are requested to quote rate(s) per unit(s) only in the recognized Accounting units otherwise your quotation will not be accepted.
6. Cost of items shall include installation, support and troubleshooting.
7. Warranty and Support: for Hardware and Software should be explicitly mentioned.
8. Bidders should be OEM/Authorized partner/Authorized dealer of OEM.
9. Bidders should quote rates as per details/specifications mentioned in notice inviting Tender. The Institute reserves the right to place order for each job to single/separate vendor(s) if necessary.
10. Bidders should quote rates on FOR/Free Delivery at the sites specified in the Notice inviting Tender, inclusive of all charges else should mention estimated cost of packing, forwarding, insurance and freight by Rail/Road/Post etc. as the case may be.
11. Bidders must indicate if their rate is inclusive of Taxes.
12. In case opening date of Tender happens to be holiday, tender will be received and opened on the next working day at the same time and same place. Quotation received after the closing date will not be entertained and revision in the price will render the bid invalid. Quotation should indicate clearly the period of Validity, preferably not less than 45 days.
13. In case of an offer for items having multiple options, you should clearly indicate item-specific price(s). Please quote separate item-wise rate(s), when quotation has been asked for so. For every offer, packing and forwarding charges, Taxes etc. should be shown separately.
14. Bids will be evaluated after equated comparison of offers upon calculating all tax/duty/cess/surcharge/discount/packing/transportation costs, other charges with price and non-compliance of technical and commercial terms will render a bid liable for rejection.
15. Bidders will have to submit Bills/Invoices on dispatch of stores, if ordered, to this office in triplicate duly pre-receipted (and stamped for amount over Rs. 5000/-) and supported by the relevant delivery documents for audit and payment directly in your bank account through RTGS/NEFT. Generally, payments can be expected within one month and are made against acceptance of supplies/ jobs completed and in deserving cases, against shipment documents.
16. No insurance charges are allowed unless otherwise specified and agreed to by us. In the absence of any specific instructions, it will be the responsibility of the supplier to ensure a consignment against transit risk at his own expense if he so desires.
17. The Institute is not bound to accept the lowest rate or any other offer and the acceptance of the offer is entirely at the discretion of the Committee.
18. All purchases are subject to the approval of the Governing Body of the Institute.
19. The Institute reserves the right to select certain items in single or multiple units and reject the others or all as mentioned in the schedule and to revise or alter the specifications before

acceptance of any tender and accept or reject any or all tenders, wholly or partly or close the tender without assigning any reason whatsoever.

20. The Bidder shall be required to submit the amount of **Earnest Money Deposit (EMD)** as mentioned in the Notice Inviting Tender which is refundable and a non-refundable **Tender Fee** for an amount of **Rs 200/-** (Rupees two hundred only) by way of demand drafts/banker's cheque/FDRs. The demand drafts shall be drawn in favour of "**Dayalbagh Educational Institute, Agra**" payable at **Agra**. The demand drafts (validity 45 days beyond final bid) for earnest money deposit & tender fee must be enclosed in the envelope containing the bid.
  - a.) The firm(s) that are registered with the National Small Industries Corporation (NSIC) / or Small-Scale Industries (SSI) are exempted from furnishing the EMD. Self-attested photocopy of the valid registration certificate must be enclosed with their bid.
  - b.) The demand drafts for EMD & tender fee must be enclosed in the envelope containing the technical/price bid and super-scribed with tender number and due date of submission on it. Any technical/price bid is found without the demand drafts of EMD and tender fee will be rejected. The Institute will not be liable to pay any interest on such an amount. The EMD shall be forfeited, if the Bidder withdraws its bid during the period of validity of Tender.
21. Arbitration and Laws: In case of any dispute or difference arising out of or in connection with the tender conditions / order and Contract, the Institute and the Supplier will address the dispute / difference for a mutual resolution and failing which, the matter shall be referred for arbitration to a sole Arbitrator to be appointed by the Institute. The Arbitration shall be held in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the venue of arbitration shall be at Agra only. The resolution of the Arbitrator shall be final and binding on both the parties.
22. Jurisdiction: The courts at Agra alone will have the jurisdiction to try any matter, dispute or reference between parties arising out of this tender /contract. It is specifically agreed that no court outside and other than Agra court shall have jurisdiction in the matter.
23. Customs Duty & Excise Duty: Please note that the Dayalbagh Educational Institute, Agra, Uttar Pradesh other than Hospital is registered with the DSIR for purpose of availing Customs Duty Exemptions in terms of Notification No.51/96-CUSTOMS dated 23.7.1996, Notfn. No.47/2017-Integrated Tax (Rate) dated 14-11-2017 and Notfn. No.45/2017-Central Tax (Rate) dated 14-11-2017, Notfn. No.45/2017-Union Territory Tax (Rate) dated 14-11-2017 & Notfn. No.9/2018- Central Tax (Rate) dated 25-01-2018, Notfn. No.9/2018- Union Territory Tax (Rate) dated 25-01-2018 as amended from time to time, for research purpose only, the bidders are, however, requested to quote accordingly for relevant supplies.

**Registrar, DEI**

### Annexure-III

<b>Power Beam 500 AC Radio</b>					
<b>Technical Specification</b>					
Dimensions	Radome Excluded			Radome Included	
	520 x 520 x 308 mm (20.47 x 20.47 x 12.13")			525 x 525 x 315 mm (20.67 x 20.67 x 12.40")	
Weight	Radome Excluded			Radome Included	
	2.35 kg (5.18 lb)			3.15 kg (6.95 lb)	
Power Supply	24V, 0.5A Gigabit PoE				
Max. Power Consumption	8.5W				
Power Method	Passive PoE (Pairs 4, 5+; 7, 8 Return)				
Supported Voltage Range	20-26VDC				
Operating Frequency	Worldwide	USA: U-NII-1	USA: U-NII-2A	USA: U-NII-2C	USA: U-NII-3
	5150 - 5875 MHz	5150 - 5250 MHz*	5250 - 5350 MHz*	5470 - 5725 MHz*	5725 - 5850 MHz*
Gain	27 dBi				
Networking Interface	(1) 10/100/1000 Ethernet Port				
Processor Specs	Atheros MIPS 74Kc, 720 MHz				
Memory	128 MB DDR2, 16 MB Flash				
LEDs	(1) Power, (1) LAN, (4) WLAN				
Signal Strength LEDs	Software-Adjustable to Correspond to Custom RSSI Levels				
Max. VSWR	1.5:1				
Channel Sizes	PtP Mode			PtMP Mode	
	10/20/30/40/50/60/80 MHz			10/20/30/40 MHz	
Polarization	Dual Linear				
Enclosure	Outdoor UV Stabilized Plastic				
Mounting	Pole-Mount (Kit Included)				
Wind Loading	264.6 N @ 96 km/h (60 lbf @ 60 mph)				
Wind Survivability	96 km/h (60 mph)				
ESD/EMP Protection	Air: ± 24 kV, Contact: ± 24 kV				
Operating Temperature	-40 to 70° C (-40 to 158° F)				
Operating Humidity	5 to 95% Noncondensing				
Wireless Approvals	FCC, IC, CE				
RoHS Compliance	Yes				
Salt Fog Test	IEC 68-2-11 (ASTM B117), Equivalent: MIL-STD-810 G Method 509.5				
Vibration Test	IEC 68-2-6				
Temperature Shock Test	IEC 68-2-14				
UV Test	IEC 68-2-5 at 40° C (104° F), Equivalent: ETS 300 019-1-4				
Wind-Driven Rain Test	ETS 300 019-1-4, Equivalent: MIL-STD-810 G Method 506.5				

## Power Beam 620 AC Radio

### Technical Specification

Dimensions	620 x 620 x 386 mm (24.41 x 24.41 x 15.2")				
Weight	6.4 kg (14.11 lbs)				
Power Supply	24V, 0.5A Gigabit PoE				
Max. Power Consumption	8.5W				
Power Method	Passive PoE (Pairs 4, 5+; 7, 8 Return)				
Supported Voltage Range	20-26VDC				
Operating Frequency	Worldwide	USA: U-NII-1	USA: U-NII-2A	USA: U-NII-2C	USA: U-NII-3
	5150 - 5875 MHz	5150 - 5250 MHz*	5250 - 5350 MHz*	5470 - 5725 MHz*	5725 - 5850 MHz*
Gain	29 dBi				
Networking Interface	(1) 10/100/1000 Ethernet Port				
Processor Specs	Atheros MIPS 74Kc, 720 MHz				
Memory	128 MB DDR2, 16 MB Flash				
LEDs	(1) Power, (1) LAN, (4) WLAN				
Signal Strength LEDs	Software-Adjustable to Correspond to Custom RSSI Levels				
Max. VSWR	1.6:1				
Channel Sizes	PtP Mode		PtMP Mode		
	10/20/30/40/50/60/80 MHz		10/20/30/40 MHz		
Polarization	Dual Linear				
Enclosure	Outdoor UV Stabilized Plastic				
Mounting	Pole-Mount (Kit Included)				
Wind Loading	Radome Excluded		Radome Included		
	1510 N @ 200 km/h (340 lbf @ 125 mph)		1830 N @ 200 km/h (411 lbf @ 125 mph)		
Wind Survivability	200 km/h (125 mph)				
ESD/EMP Protection	Air: $\pm 24$ kV, Contact: $\pm 24$ kV				
Operating Temperature	-40 to 70° C (-40 to 158° F)				
Operating Humidity	5 to 95% Noncondensing				
Wireless Approvals	FCC, IC, CE				
RoHS Compliance	Yes				
Salt Fog Test	IEC 68-2-11 (ASTM B117), Equivalent: MIL-STD-810 G Method 509.5				
Vibration Test	IEC 68-2-6				
Temperature Shock Test	IEC 68-2-14				
UV Test	IEC 68-2-5 at 40° C (104° F), Equivalent: ETS 300 019-1-4				
Wind-Driven Rain Test	ETS 300 019-1-4, Equivalent: MIL-STD-810 G Method 506.5				

## Dual band wifi outdoor access point with radiation above 4000

### Technical Specification

<b>Power</b>	<ul style="list-style-type: none"> <li>802.3af PoE Input (Class 3 PD)</li> </ul>
<b>Physical Size</b>	<ul style="list-style-type: none"> <li>9.4" x 7.6" x 4.3" (23.9cm x 19.5cm x 11.0cm)</li> </ul>
<b>Weight</b>	<ul style="list-style-type: none"> <li>5.5 lbs (2.5 kg) with adjustable bracket</li> </ul>
<b>Ethernet Ports</b>	<ul style="list-style-type: none"> <li>10/100/1000Base-T 802.3,802.3 u,802.3ab</li> <li>802.3at/af PoE PD Input</li> <li>Jumbo frame support (2290 byte max MTU)</li> </ul>
<b>Mounting Options</b>	<ul style="list-style-type: none"> <li>Wall Mount</li> <li>Pole Mount Diameter 1" to 2.5"</li> </ul>
<b>Environmental Conditions</b>	<ul style="list-style-type: none"> <li>Operating temperature range: -20°C to +65° C</li> <li>Weather protection: IP67 per IEC 60529</li> </ul>
<b>Power Draw</b>	<ul style="list-style-type: none"> <li>PoE Input</li> <li>Idle: 6.5W</li> <li>Typical: 7.5W</li> <li>Peak: 11W</li> </ul>
<b>Transportation</b>	<ul style="list-style-type: none"> <li>STA 2A:</li> <li>Random Vibration &amp; Drop Test</li> <li>Compression &amp; Loose Cargo Test</li> <li>ETSI EN 300 019-2-2 Specification T 2.2</li> <li>Careful transportation</li> </ul>
<b>Safety</b>	<ul style="list-style-type: none"> <li>Safety Listing - EU</li> <li>EN 60950-1:2006/A12:2011</li> <li>EN 60950-22:2006/AC:2008</li> <li>International</li> <li>CB Scheme Certificate</li> <li>CB Bulletin</li> <li>IEC 60950-1: 2005 Second Edition</li> <li>IEC 60950-22: 2005 First edition</li> <li>CISPR 22</li> <li>CISPR 24</li> <li>CAN/CSA C22.2 60950-1 Edition 2</li> <li>CAN/CSA C22.2 60950-22 Edition 1</li> </ul>
<b>Health And Human Safety To Rf Exposure</b>	<ul style="list-style-type: none"> <li>EN 62311:2008</li> <li>EN 50385:2002</li> <li>FCC OET-65</li> <li>ICNIRP:2010</li> </ul>
<b>Hazardous Materials</b>	<ul style="list-style-type: none"> <li>RoHS Directive 2002/95/EC</li> <li>RoHS Directive 2011/65/EU</li> <li>WEEE</li> </ul>
<b>Immunity</b>	<ul style="list-style-type: none"> <li>EN61000-4-2 Level 4 Contact / Level 3 Air ESD Immunity</li> <li>EN61000-4-5 Level 1 &amp; 2 AC Surge Immunity</li> <li>EN61000-4-3 Level 4 EMC Immunity</li> <li>GR1089 - 1kV 25A Surge (data ports)</li> </ul>
<b>Railway And Rolling Stock</b>	<ul style="list-style-type: none"> <li>EN50155:</li> <li>EN50121-1 EMC</li> <li>EN50121-4 Immunity</li> <li>EN61373 Shock &amp; Vibration</li> </ul>
<b>Wi-Fi Alliance</b>	<ul style="list-style-type: none"> <li>Wi-Fi CERTIFIED™ a, b, g, n, ac</li> </ul>



	<ul style="list-style-type: none"> <li>• WPA™ — Enterprise, Personal</li> </ul>
	<ul style="list-style-type: none"> <li>• WPA2™ — Enterprise, Personal</li> </ul>
	<ul style="list-style-type: none"> <li>• Optimization — WMM®</li> </ul>
	<ul style="list-style-type: none"> <li>• 5 GHz IEEE 802.11ac</li> </ul>
<b>Standards</b>	<ul style="list-style-type: none"> <li>• 2GHz IEEE 802.11g/n</li> </ul>
	<ul style="list-style-type: none"> <li>• IEEE 802.11g/n 2.4-2.472GHz (ch1-13 CE, ch1-11 US)</li> </ul>
	<ul style="list-style-type: none"> <li>• IEEE 802.11ac 5GHz</li> </ul>
	<ul style="list-style-type: none"> <li>• U-NII-1 5.15-5.25GHz</li> </ul>
	<ul style="list-style-type: none"> <li>• U-NII-2 5.25-5.35 (DFS)</li> </ul>
<b>Frequency Bands</b>	<ul style="list-style-type: none"> <li>• U-NII-2B 5.37-5.475</li> </ul>
	<ul style="list-style-type: none"> <li>• U-NII-2C 5.47-5.725 (DFS)</li> </ul>
	<ul style="list-style-type: none"> <li>• U-NII-3 5.725-5.825</li> </ul>
	<ul style="list-style-type: none"> <li>• ISM 5.725 – 5.875</li> </ul>
	<ul style="list-style-type: none"> <li>• U-NII-4 5.85-5.9255</li> </ul>
<b>Wlan Radio Configuration</b>	<ul style="list-style-type: none"> <li>• Dual band concurrent 2 x 2:2 stream radios</li> </ul>
	<ul style="list-style-type: none"> <li>• 26 dBm for 2.4GHz</li> </ul>
<b>Maximum Tx Power 1</b>	<ul style="list-style-type: none"> <li>• 25 dBm for 5.0GHz</li> </ul>
	<ul style="list-style-type: none"> <li>• 2.4GHz 802.11b/g/n 20/40MHz</li> </ul>
<b>Channelization</b>	<ul style="list-style-type: none"> <li>• 5GHz 802.11a/n/ac 20/40/80MHz</li> </ul>
	<ul style="list-style-type: none"> <li>• Up to 32 (27 configurable) on 2.4GHz</li> </ul>
<b>BSSID</b>	<ul style="list-style-type: none"> <li>• Up to 16 (13 configurable) on 5GHz</li> </ul>
	<ul style="list-style-type: none"> <li>• U.S., Europe, Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Hong Kong, India, Indonesia, Israel, Japan, Korea, Malaysia, Mexico, Peru, Philippines, Russia, Saudi Arabia, Singapore, South Africa, Taiwan</li> </ul>
<b>Certifications 4</b>	

## Dual band wifi outdoor access point with radiation above 2000

<b>Power</b>	<ul style="list-style-type: none"> <li>802.3af PoE Input (Class 3 PD)</li> </ul>
<b>Physical Size</b>	<ul style="list-style-type: none"> <li>7" x 5.9" x 3.4" (18cm x 15cm x 8.6cm)</li> </ul>
<b>Weight</b>	<ul style="list-style-type: none"> <li>2.1 lbs (1 kg) with bracket</li> <li>2 lbs (0.9 kg) without bracket</li> </ul>
<b>Ethernet Ports</b>	<ul style="list-style-type: none"> <li>10/100/1000Base-T 802.3,802.3 u,802.3ab</li> <li>802.3at/af PoE PD Input</li> <li>Jumbo frame support (2290 byte max MTU)</li> </ul>
<b>RF CONNECTORS</b>	<ul style="list-style-type: none"> <li>N female qty 2 (optional 5GHz only)</li> </ul>
<b>Mounting Options</b>	<ul style="list-style-type: none"> <li>Wall Mount</li> <li>Pole Mount Diameter 1" to 2.5"</li> </ul>
<b>Environmental Conditions</b>	<ul style="list-style-type: none"> <li>Operating temperature range: -20°C to +65° C</li> <li>Weather protection: IP67 per IEC 60529</li> </ul>
<b>Power Draw</b>	<p>PoE Input</p> <ul style="list-style-type: none"> <li>Idle: 6.5W</li> <li>Typical: 7.5W</li> <li>Peak: 11W</li> </ul>
<b>Transportation</b>	<ul style="list-style-type: none"> <li>ISTA 2A: <ul style="list-style-type: none"> <li>Random Vibration &amp; Drop Test</li> <li>Compression &amp; Loose Cargo Test <ul style="list-style-type: none"> <li>ETSI EN 300 019-2-2 Specification T 2.2</li> </ul> </li> </ul> </li> <li>Careful transportation</li> </ul>
<b>Safety</b>	<ul style="list-style-type: none"> <li>Safety Listing - EU <ul style="list-style-type: none"> <li>EN 60950-1:2006/A12:2011</li> <li>EN 60950-22:2006/AC:2008</li> </ul> </li> <li>International <ul style="list-style-type: none"> <li>CB Scheme Certificate</li> <li>CB Bulletin</li> <li>IEC 60950-1: 2005 Second Edition</li> <li>IEC 60950-22: 2005 First edition</li> <li>CISPR 22</li> <li>CISPR 24</li> <li>CAN/CSA C22.2 60950-1 Edition 2</li> <li>CAN/CSA C22.2 60950-22 Edition 1</li> </ul> </li> </ul>
<b>Health And Human Safety To Rf Exposure</b>	<ul style="list-style-type: none"> <li>EN 62311:2008</li> <li>EN 50385:2002</li> <li>FCC OET-65</li> <li>ICNIRP:2010</li> </ul>
<b>Hazardous Materials</b>	<ul style="list-style-type: none"> <li>RoHS Directive 2002/95/EC</li> <li>RoHS Directive 2011/65/EU</li> <li>WEEE</li> </ul>
<b>Immunity</b>	<ul style="list-style-type: none"> <li>EN61000-4-2 Level 4 Contact / Level 3 Air ESD Immunity</li> <li>EN61000-4-5 Level 1 &amp; 2 Immunity</li> <li>EN61000-4-3 Level 4 EMC Immunity</li> <li>GR1089 - 1kV 25A Surge (data ports)</li> </ul>
<b>Railway And Rolling Stock</b>	<ul style="list-style-type: none"> <li>EN50121-1</li> <li>EN50121-4</li> <li>EN61373 (for trackside use)</li> </ul>

<b>Wi-Fi Alliance</b>	<ul style="list-style-type: none"> <li>• Wi-Fi CERTIFIED™ a, b, g, n, ac</li> <li>• WPA™ — Enterprise, Personal</li> <li>• WPA2™ — Enterprise, Personal</li> <li>• Optimization — WMM®</li> </ul>
	• 5 GHz IEEE 802.11ac
<b>Standards</b>	• 2GHz IEEE 802.11g/n
	• IEEE 802.11g/n 2.4-2.472GHz (ch1-13 CE, ch1-11 US)
	• IEEE 802.11ac 5GHz
	• U-NII-1 5.15-5.25 GHz
	• U-NII-2 5.25-5.35 (DFS)
<b>Frequency Bands</b>	• U-NII-2B 5.37-5.475
	• U-NII-2C 5.47-5.725 (DFS)
	• U-NII-3 5.725-5.825
	• ISM 5.725 – 5.875
	• U-NII-4 5.85-5.9255
<b>Wlan Radio Configuration</b>	• Dual band concurrent 2 x 2:2 stream radios
	• 26 dBm for 2.4GHz
<b>Maximum Tx Power 1</b>	• 25 dBm for 5.0GHz
	• 2.4GHz 802.11b/g/n 20/40MHz
<b>Channelization</b>	• 5GHz 802.11a/n/ac 20/40/80MHz
	• Up to 32 (27 configurable) on 2.4GHz
<b>Bssid</b>	• Up to 16 (13 configurable) on 5GHz
	• U.S., Europe, Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Costa Rica, Hong Kong, India, Indonesia, Israel,
<b>4</b>	Japan, Korea, Malaysia, Mexico, Peru, Philippines, Russia, Saudi Arabia, Singapore, South Africa, Taiwan

## Long haul radio Air Fiber 5U Radio

### Technical Specification

Dimensions Radio	
Box	938.4 x 468.4 x 281.4 mm (36.94 x 18.44 x 11.08")
	1042 x 573 x 502 mm (41.02 x 22.56 x 19.76")
Weight	
Radio (Mount Included) Box	16 kg (35.27 lb)
	26.5 kg (58.42 lb)
Max. Power Consumption	40W
Power Supply	50V, 1.2A PoE GigE Adapter (Included)
Power Method	Passive Power over Ethernet
Supported Voltage Range	+42 to +58VDC, -48VDC
Automatic Transmit Power Control (ATPC)	Yes
Certifications	CE, FCC, IC
Mounting	Pole Mount Kit (Included)
Wind Loading	863 N @ 200 km/hr (194 lbf @ 125 mph)
Wind Survivability	200 km/hr (125 mph)
Operating Temperature	-40 to 55° C (-40 to 131°F)
LEDs	(12) Status LEDs: Data Port Link/Activity Data Port Speed Management Port Link/Activity Management Port Speed GPS Synchronization Master/Slave Link Status Modulation Mode 0.25x to 4x, 6x, 8x, 10x (Unlabeled), Overload Remote and Local Displays (Calibrated Signal Strength)
Operating Frequency	
AF-5	
FCC 15.247, 15.407, IC RSS-210	5470 - 5600 MHz, 5650 - 5850 MHz
ETSI EN 301 893, EN 302 502	5470 - 5875 MHz
Other Regions	5470 - 5950 MHz
AF-5U	
FCC 15.247, IC RSS-210 ETSI EN 302 502	5725 - 5850 MHz
Other Regions	5725 - 5875 MHz
	5725 - 6200 MHz
Interface	
Data Port	(1) 10/100/1000 Ethernet Port
Management Port	(1) 10/100 Ethernet Port
Auxiliary Port	(1) RJ-12, Alignment Tone Port
System	
Maximum Throughput	1.2+ Gbps
Maximum Range	100+ km (Dependent on Regulatory Region)
Packets per Second	1+ Million
Encryption	128-Bit AES
Uplink/Downlink Ratio	50% Fixed
Latency	

Full Duplex Mode Half Duplex Mode	< 200 $\mu$ s at Full Throughput
	< 2 ms at Full Throughput
Radio Frame Synchronization	GPS
Dynamic Frequency Selection AF-5	
AF-5U	CE, FCC/IC
	CE (FCC/IC Not Applicable)
MTU (Maximum Transmission Unit)	Up to 9600

## Long haul radios

### Technical Specification

Dimensions Radio	
Box	938.4 x 468.4 x 281.4 mm (36.94 x 18.44 x 11.08")
	1042 x 573 x 502 mm (41.02 x 22.56 x 19.76")
Weight	
Radio (Mount Included) Box	16 kg (35.27 lb)
	26.5 kg (58.42 lb)
Max. Power Consumption	40W
Power Supply	50V, 1.2A PoE GigE Adapter (Included)
Power Method	Passive Power over Ethernet
Supported Voltage Range	+42 to +58VDC, -48VDC
Automatic Transmit Power Control (ATPC)	Yes
Certifications	CE, FCC, IC
Mounting	Pole Mount Kit (Included)
Wind Loading	863 N @ 200 km/hr (194 lbf @ 125 mph)
Wind Survivability	200 km/hr (125 mph)
Operating Temperature	-40 to 55° C (-40 to 131°F)
Operating Frequency	
AF-5	
FCC 15.247, 15.407, IC RSS-210	5470 - 5600 MHz, 5650 - 5850 MHz
ETSI EN 301 893, EN 302 502	5470 - 5875 MHz
Other Regions	5470 - 5950 MHz
Interface	
Data Port	(1) 10/100/1000 Ethernet Port
Management Port	(1) 10/100 Ethernet Port
Auxiliary Port	(1) RJ-12, Alignment Tone Port
System	
Maximum Throughput	1.2+ Gbps
Maximum Range	100+ km (Dependent on Regulatory Region)
Packets per Second	1+ Million
Encryption	128-Bit AES
Latency	
Full Duplex Mode Half Duplex Mode	< 200 µs at Full Throughput
	< 2 ms at Full Throughput

<b>Network Switch: 1Gbps 24 manageable switch with POE ports</b>	
<b>Device Type</b>	Switch - 28 ports - managed
<b>Enclosure Type</b>	Desktop, rack-mountable - 1U
<b>Ports</b>	26 x 10/100/1000 + 2 x combo Gigabit SFP
<b>Power Over Ethernet (PoE)</b>	PoE/PoE+
<b>Performance</b>	Switching capacity: 56 Gbps   Forwarding performance (64-byte packet size): 41.67 Mpps
<b>MAC Address Table Size</b>	16,000 entries
<b>Capacity</b>	4000 active VLANs
<b>Routing Protocol</b>	Static IPv4 routing
<b>Remote Management Protocol</b>	SNMP 1, RMON 1, RMON 2, RMON 3, RMON 9, Telnet, SNMP 3, SNMP 2c, HTTP, HTTPS, SSH, CLI
<b>Jumbo Frame Support</b>	9 KB
<b>Authentication Method</b>	SSH, RADIUS, TACACS+
<b>Features</b>	Layer 3 switching, Layer 2 switching, DHCP support, VLAN support, IGMP snooping, Syslog support, DoS attack prevention, port mirroring, DiffServ support, Weighted Round Robin (WRR) queuing, Broadcast Storm Control, IPv6 support, Multicast Storm Control, Unicast Storm Control, firmware upgradable, STP support, RSTP support, MSTP support, TFTP support, ACL support, QoS, Jumbo Frames support, MLD snooping
<b>RAM</b>	128 MB
<b>Flash Memory</b>	16 MB
<b>Status Indicators</b>	Link activity, port transmission speed, system
<b>Interfaces</b>	24 x 10BASE-T/100BASE-TX/1000BASE-T - RJ-45 - PoE   2 x 10BASE-T/100BASE-TX/1000BASE-T - RJ-45   1 x console - 9 pin D-Sub (DB-9) - management   2 x SFP (mini-GBIC)
<b>Power Device</b>	Internal power supply
<b>Voltage Required</b>	AC 120/230V (50/60 Hz)
<b>Width</b>	17.3 in.
<b>Depth</b>	13.78 in.
<b>Height</b>	1.73 in.
<b>Weight</b>	11.6 lbs
<b>Cables Included</b>	1 x serial cable
<b>Rack Mounting Kit</b>	Included
<b>MTBF</b>	138,676 hours at 50C
<b>Compliant Standards</b>	UL 60950, FCC Part 15 A, CSA 22.2
<b>Service &amp;&amp; Support</b>	Limited lifetime warranty
<b>Service &amp;&amp; Support Details</b>	Limited warranty - lifetime replacement - response time: next business day   Technical support - web support - 1 year   Technical support - phone consulting - 1 year
<b>Min Operating Temperature</b>	32 Â°F
<b>Max Operating Temperature</b>	104 Â°F
<b>Humidity Range Operating</b>	10 - 90% (non-condensing)
<b>Min Storage Temperature</b>	-4 Â°F
<b>Max Storage Temperature</b>	158 Â°F
<b>Humidity Range Storage</b>	10 - 90% (non-condensing)

### 9U Rack

Type of Racks	Rack
Size of Rack Enclosure	9U
Depth of the Rack (mm)	600
Mount Type	Wall mount
Front glass Door	Yes
Type of glass used in front door	Transparent Toughened Glass
Secure Locks	Yes
Vertical & Horizontal managers	Yes
Numbers of Rack trays	1
Number of Fan For Heat dissipation (nos)	1
Heavy Duty Caster Wheels	NA
PDU	5 Socket
Load Bearing Capacity (Kgs)	15 kilogram



<b>Patch Panel IO Ports</b>	
<b>SR.#</b>	<b>SPECIFICATION / QUALITATIVE REQUIREMENT</b>
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.
7	IDC Conductor : 0.5 mm Phosphor Bronze, Tin Plating
8	Contact Compatibility : 22~26 AWG Stranded and Solid Wires
9	1U Patch Panel to Mount In any Standard Rack. Panel Frame : SPCC Powder Coating In Black Color.
10	Housing : High Impact Flame Retardant Plastic, UL 94V-0 Rated
11	Easy Port Labeling Identification Provision
12	<b>Electrical Characteristics:</b>
a	Current Rating : 1.5amps
b	Insulation Resistance : $\geq 500\text{m}\Omega$
c	Contact Resistance : $\leq 10\text{m}\Omega$
d	DC Resistance : $\leq 0.1\Omega$
e	DC/AC Volt Endurance : DC 1000V/AC 750V 1 Min
13	<b>Mechanical Characteristics:</b>
a	Plug Insertion Life : $\geq 750$ Cycles with FCC Compliant RJ-45 Plug
b	Plug & Jack Contact : $\geq 100$ Grams with FCC Compliant RJ-45 Plug Force
c	Plug Retention Force : $\geq 11$ 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
14	<b>Standard Verification:</b>
a	ANSI/TIA-568-C.2
b	ISO/IEC 11801:2002/AMMD.2:2010
c	YD/T 926.3-2009
d	ISO/IEC 60603-7 Compliant
e	RoHS Directive 2002/95/EC/Compliant
f	UL Listed, ETL Verified

## Outdoor CAT6 LAN Cable Bundles

S.No.	SPECIFICATION / QUALITATIVE REQUIREMENT
1	The 4 pair Un-Shielded Twisted Pair cable.
2	This cable well exceeds the requirements of TIA/EIA-568-C.2 and ISO/IEC 11801
3	Nominal Outer Diameter of Cable over outer Sheath: 10.0 +/- 0.5mm and Conductor Diameter 0.55 +/-0.005mm(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 and Twisted 4pair stranded over Cross PE Separator filler, Inner sheath, ECCS Tape Armour and Outer black Polyethylene Sheath. Outer Jacket color: Black PE Inner Sheath: PVC (0.40mm Min. Thickness) & Diameter over inner sheath - 6.5 mm (max.) ECCS Tape Armouring Diameter over Armour - 8.5 mm (nom.) Outer Sheath: Polyethylene Colour: Black Diameter over outer Sheath -10. +/- 0.5mm
6	Insulation :High Density Polyethylene Solid
7	Dielectric Strength of cable should be 2.5 KVDC for 2 SECS
8	Bending Radius : < 12X Cable Diameter at -20°C +/- 1°C
	Pulling Force: 11.5 kgs (max.)
9	Electrical Parameters Pair – to – pair and PS NEXT, ELFEXT and PSELFEXT, 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°C
10	Cable support Conductor Resistance < 9.38 Ω /100m
11	Mutual Capacitance of cable should be < 5.6nF/100m
12	Max Resistance Unbalance of cable should be 5% Max
13	Capacitance Unbalance of cable should max 330pF/100m
14	Cable support Delay Skew: < 45nS, Operating Voltage: 72V NVP: 69% and Current Rating : MAX 1.5A
15	Printed sequential Length Counter of each meter on Outer Jacket
16	Category 6 Armoured cables shall Supports Gigabit Ethernet (1000 base-T) standard

**Annexure-IV**

**Financial Bid Format**

	Description	Specifications	Make/Model	Unit	Qty	Quoted unit price in Rs.	Tax	Amount in Rs.
1	Long haul radio Air Fiber 5U Radio	As per specification			02			
2	Long haul radios	As per specification			02			
3	Power Beam 500 AC Radio	As per specification			16			
4	Power Beam 620 AC	As per specification			08			
5	Network Switch:1 Gbps 24 manageable switch with POE ports	As per specification			12			
6	Outdoor CAT 6 LAN Cable Bundles	As per specification			15 bundles			
7	9U Rack	As per specification			08			
8	Patch Panel IO Ports	As per specification			10			
9	Cable Guides	Suitable to the unit			20			
10	Dual band wifi outdoor access point with radiation pattern above 2000	As per specification			06			
11	Dual band wifi outdoor access point with radiation pattern above 4000	As per specification			02			
12	Rigger charges /Installation charges	As per location						

**CHECK LIST**

1. EMD of Rs. \_\_\_\_\_ only by way of DD No. .... dated ..... in favour of **“Registrar, Dayalbagh Educational Institute, Agra”** payable at Agra.
2. DD No. .... dated. .... for Rs.200.00 (Two hundred) only in favour of **“Registrar, Dayalbagh Educational Institute, Agra”** payable at Agra towards cost of Tender Fee.
3. Details of firm, equipment, software, registration with tax authorities–Income Tax/Service Tax etc.
4. PO and Satisfactory report of qualifying projects (Minimum of two) handled by bidders in last 5 years giving date of start, date of completion, cost of project and delay if any attributable to bidder. (Staple all to make one doc).
5. Documents explaining Bidder’s approach particularly to this GPON laying project describing implementation strategies which may include topology, hardware to be deployed etc.
6. Declaration from the OEM that none of the quoted product will go End of Sale or End of Support for a period of at least five years.
7. Declaration by Agency that they shall be supplying genuine OEM products and any discrepancy.
8. Time schedule for complete development of total project in the form of BAR CHART. (This also has to be part of presentation).
9. Financial Bid in the prescribed Format as given in Annexure-II in a sealed envelope.
10. The bid document along with its annexure downloaded from the web shall be duly signed on each page by the bidder and enclosed along with technical bid in Envelope 1.
11. Any other documents.

**NOTE: The Check- List shall be duly filled in, and should be submitted along with the Technical Bid.**