

	<p>भारतीय प्रौद्योगिकी संस्थान पालक्काड  <b>Indian Institute of Technology Palakkad</b>  अहलिआ एकीकृत कैम्पस, कोज़िहपारा  Ahalia Integrated Campus, Kozhipara  पालक्काड- 678557  Palakkad – 678 557</p>	<p>दूरभाषसंख्या/ Phone no:  04923 – 226300/590/586  ईमेल/ Email :  purchase@iitpkd.ac.in</p>
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**Ref No: IITPKD/ELE/LNT/ 043 /2017**

**Date: 10.10.2017**

**Due Date of the tender: 25.10.2017 @ 3 PM**

**TENDER FOR INVITING QUOTATIONS**

**Dear Sirs,**

On Behalf of Indian Institute of Technology Palakkad quotations are invited for “**Optical Fiber Communications System Kit**” confirming to the specification in the Annexure.

- Preparation of Bids:** - The tenders should be submitted **under two-bid system** (i.e.) Technical bid and Financial bid. The technical bid should consist of all technical details along with commercial terms and conditions. No prices should be included in technical bid. Financial Bid should indicate item – wise prices for the items mentioned in the technical bid. The technical and the financial bids should be put in separate cover and sealed. Both sealed covers should be put into a bigger cover.
- The Quotations duly sealed and superscribed on the envelope **with the reference No. and due date, should be addressed to the undersigned so as to reach him on or before the due date stipulated above. Fax and Email quotation are not acceptable.**
- The price should be quoted per unit and packing and delivery charges should be indicated separately. The offer/bids should be exclusive of Taxes and Duties, which will be paid by the purchaser as applicable. However the percentage and of taxes and duties as on date should be clearly indicated.
- The Quotations should be valid for **sixty days** from the due date and the period of delivery required should also be clearly indicated.
- If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
- Local Firms:** Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
- Outside Palakkad: Quotations should be for **F.O.R. at IIT Palakkad**. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If Ex-Godown, packing, forwarding and freight charges must be indicated.

8. Goods shall not be supplied without an official supply order.
9. **Custom Duty:** Custom Duty which will be paid at a concessional rate against duty exemption certificate.
10. **Payment:** Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later. No advance payment will be made. The Tenderer have to furnish the bank details along with tender like Account No, Account Name, IFSC Code, Bank address etc.
11. **Submission of Bids:** Quotation should be sent to the following address “**The Registrar, Indian Institute of Technology Palakkad, Ahalia Integrated Campus, Kozhipara, Palakkad -678 557, Kerala**”, Phone No: **04923 226 586/590**, Email: [purchase@iitpkd.ac.in](mailto:purchase@iitpkd.ac.in).
12. **Delivery Period:** The quotation should indicate clearly when delivery and installation to be made.
13. **Delay in Supply or Liquidate damages:** If the supplier fails to deliver the stores within the time specified in the purchase order, the purchaser will recover from the supplier as liquidated damages a sum of one- half of one percent (0.5%) of the P.O value of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed five percent (5%) of the P.O price of the unit or units so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.
14. **Late offer:** The quotation received after due date will not be considered. Please ensure that your offer is sent well in advance to reach the Institute by the due date.
15. **Loading and unloading charges will be borne by the supplier.**
16. **Warranty:** Warranty Clause should be indicated clearly.
17. **Acceptance and Rejection:** IIT Palakkad has the right to accept the whole or any parts of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

Yours faithfully,

Encl: Specifications

**Registrar, IIT Palakkad**

## **Who can participate?**

1. Bidder should be either an Original Equipment Manufacturer (OEM) of communication lab trainer kits/allied fields OR an authorized dealer having purchase and support agreement with such an OEM. Proof of authorization needs to be provided.
2. The bidder should be a company registered under the Companies Act, 1956/2013 OR a Limited Liability Partnership (LLP) OR a registered partnership firm OR a sole proprietorship entity. Appropriate Registration/ incorporation certificate to be submitted.
3. Bidder must be in existence in the business of communication lab trainer kits/allied fields for a minimum period of 2 previous financial years (i.e., before or since 01-April-2015). Documentary evidence of experience must be provided.
4. Compliance sheet for the specification & OEM Brochure has to be attached along with Technical bid. Vendor has to fill the compliance sheet and mention page number or reference number in OEM brochure. Unfilled / partial filled sheets lead to disqualification.

## Technical Specifications for Optical Fiber Communications System Kit

<b>1. Overview</b>	<ul style="list-style-type: none"><li>a) Input power supply: USB or standard power supply of single-phase AC 240V±10% and frequency 50/60Hz.</li><li>b) All required cables, power adapters, connectors have to be quoted and supplied.</li><li>c) Manuals, documentations and datasheets of all supplied hardware must be provided.</li><li>d) Minimum service and warranty of <b>three</b> year for all supplied hardware must be provided.</li><li>e) Bidder must have a standard service program for hardware support and repair.</li></ul>
<b>2. OFC trainer kit specifications</b>	<ul style="list-style-type: none"><li>a) Number of kits required: 12</li><li><b>b) Objectives</b><ul style="list-style-type: none"><li>i. Demonstrate communication principles, fiber optic transmission, PCM, and line coding techniques.</li><li>ii. Generate and receive optical signals.</li><li>iii. Analysis of communication signals and effect of communication channels.</li></ul></li><li>c) Design: A board over which block diagram of all the communication system blocks involved are clearly printed. Inputs and outputs of these blocks should be available through test points for supplying signal and external analysis, respectively.</li><li>d) Fiber cables and spools must be supplied.</li><li>e) Detailed technical specifications.</li></ul>

<b>S. No.</b>	<b>Feature</b>	<b>Requirement</b>
1	Optical light wavelength	650 or 850 nm
2	Optical receiver	PIN photodiode
3	Supported data-rate	$\geq 64$ kbps
4	Number of channels	$\geq 12$
5	Supported line codes	NRZ, Manchester coding. Additional schemes are optional.
6	Analog input/output	Required
7	Digital input/output	Required
8	Generation of eye diagram	Required
9	Quantizer characteristics evaluator	Required
10	Electromagnetic interference demonstration	Required
11	Indicators for link failure and decoding output	Required
12	Fiber attenuation and connector loss measurement	Required
13	Voice transmission	Required (enabled through a microphone and speaker or handset)
14	Selection line to switch between digital and analog data	Required
15	Option to select transmit channel between fiber and metallic cables.	Required
16	Telephony standards support	CCITT
17	Support to view/supply signals at the output/input of various communication blocks through test-points	Required