



NATIONAL INSTITUTE OF TECHNOLOGY

TIRUCHIRAPPALLI - 620 015

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

**NOTICE INVITING QUOTATION**

File No.	NITT/F.NO.017/CAPEX/2021-22/EEE	Date:	31.01.2022
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To

(Supplier Address)

Sealed quotations are invited from reputed Authorized Dealers / manufacturers for the supply of the Items.

<b>Name of the Item</b>	:	<b>Power Electronic Switches Without drivers Circuit, Power Electronic Switches With drivers Circuit</b>
<b>Quantity Required</b>	:	30 & 20
<b>Specification</b>	:	(As per enclosed Schedule Annexure – I)
1. Quotation Reference No.	:	NITT/F.NO.017/CAPEX/2021-22/EEE
2. Last date and Time for receipt of quotation	:	21.02.2022 before 4.30 PM <b>28.02.2022 before 4.30 PM ( 1<sup>st</sup> extension closing date)</b>
3. Date & Time of opening of Quotation	:	22.02.2022 at 03.00 PM <b>01.03.2022 at 03.00 PM ( 1<sup>nd</sup> extension opening date)</b>
4. EMD Amount	:	Rs. 4,584/- (2%)
5. Validity (Days)	:	90 Days
6. Address to which quotations are to be sent	:	The Director, National Institute of Technology, Tiruchirappalli – 620 015, Tamil Nadu, India
<b>Kind attention to</b>	:	Dr. Vivek Mohan
Phone	:	<b>0431 250 3250</b>
E-mail	:	vivekmohan@nitt.edu

1. Quotations should be submitted in the format given in Annexure – I and Annexure-II
2. The envelope should contain the following details:

<p><b>“QUOTATION AGAINST ENQUIRY” (Power Electronic Switches Without drivers Circuit, Power Electronic Switches With drivers Circuit) NITT/F.NO.017/CAPEX/2021-22/EEE</b></p> <p><b><u>Kind attention to:</u> Dr. Vivek Mohan</b></p> <p><b>Last date and Time for receipt of quotation : 28.02.2022 before 4.30 PM ( 1<sup>st</sup> extension closing date)</b></p>
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### Terms and Conditions:

1.	The quotation must be in the format furnished by NIT Tiruchirappalli and should be of typed format with proper signature of the authority, hand written rates and specification will not be accepted for evaluation. In case there is any unavoidable correction it should be clearly readable and properly attested. If not the quotation will not be considered. Hand written Quotation and incomplete will be rejected.
2.	a) Earnest Money Deposit (EMD) is to be submitted by way of Demand Draft drawn on any Nationalized bank in India in favor of "The Director, NIT, Tiruchirappalli" payable at Trichy. The bids submitted without EMD will be treated as non-responsive and will be rejected. EMD shall bear no interest. Bidder must fill the EMD returning Form (Annexure-III) and submit along with the quotation. EMD for this particular quotation is Rs. 4,584/- (2%) b) EMD exemption will be given as per the GOVT of India norms. c) Canvassing by the Bidder in any form, unsolicited letter and post-tender correction will leads to rejection of the bid and result in forfeiture of EMD.
3.	You are invited to submit your most competitive quotation for the supply of goods according to the specifications, warranty, delivery and other terms as given by the NITT in the Specification annexure.
4.	Bidders may send the quotations in sealed covers with the quotation reference number and last date for receipt of quotations duly superscribed on the cover. <b>Kind Attention to: as mentioned in the point No. 6</b> NB: Mention the company Contact Number / E-mail id on the cover.
5.	Quotation will be opened on <b>01.03.2022 at 03.00 PM ( 1<sup>st</sup> extension opening date)</b> at the Stores and Purchase Section, NIT, Tiruchirappalli in presence of the tenderers or their representatives who may wish to be present. (Any change in the date, time and venue of the quotation opening will be informed to the bidders through telephone / E-mail)
6.	The National Institute of Technology, Tiruchirappalli reserves the right to accept or reject any quotations, and to cancel the bidding process, and reject all quotations at any time prior to the award of order without assigning any specific reason thereof.
7.	<b>Eligibility:</b> Participation in this Limited tender is by invitation only. For any details / clarifications regarding could be obtained, free of cost, from the National Institute of Technology, Tiruchirappalli on all working days during 10 AM to 5 PM.
8.	Please quote whether your organization is large scale industry or small scale industry. If you have NSIC Certificate, please attach it to the quotation. Mention your registration details
9.	Manufacturer's name and country of origin of materials offered must be clearly specified. Printed brochures, Complete details and ISI specification if any must accompany the quotation. Make / brand of the item shall be stated wherever applicable. If you have got any counter offer as suitable to the material required by us, the same may be shown separately.
10.	Samples must be submitted where specified along with the quotations. Samples must be carefully packed, sealed and labelled clearly with enquiry number, subject and sender's name for easy identification. Rejected samples will be returned at bidders cost only.
11.	All supplies are subject to inspection and approval before acceptance. Manufacturer / supplier warranty certificates and manufacturer / Government approved lab test certificate shall be furnished along with the supply, wherever applicable



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12.	National Institute of Technology, Tiruchirappalli reserves the right to modify the quantity specified in this enquiry by +/- 25%.
13.	<b>Bid Price</b> <ol style="list-style-type: none"><li>The contract shall be for the entire quantity. Bidders must quote for entire quantity. Each bidder shall submit only one quotation in Indian Rupee only.</li><li>List of reputed customers should be submitted, wherever applicable.</li><li>The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.</li><li>All taxes, packing, forwarding and delivering other allied items at the destination shall be included in the price. All such price components may be shown in the quotation. If there is no indication regarding above charges. It will be considered as inclusive of all charges.</li><li>In case of any discrepancy between unit price and total, the unit price shall prevail.</li><li>In case the items in the enquiry are covered by any rate contract or any other state or central Government, it should be specified in your quotation and accepted contract rates should also be mentioned. It should be confirmed whether you could supply at the RC rates outside rate contract</li><li>Quotations containing conditions like "subject to prior sale" may not be considered.</li><li>Delivery period required for supplying the material should be invariably specified in the quotation</li><li>Offer from Manufacturer / Authorized dealer / reputed contractor alone will be accepted.</li></ol>
14.	<b>Evaluation of quotations:</b> Quotations will be evaluated item-wise or lump sum basis. The purchase committee will evaluate and compare the quotations determined to be substantially responsive i.e. (i) are properly signed; (ii) Conform to the terms & conditions and specifications; and (iii) price offered are competitive.
15.	<b>Award of contract</b> <ol style="list-style-type: none"><li>The National Institute of Technology, Tiruchirappalli will award the Order for supply of Goods / Services to the bidder whose quotation has been determined to be substantially responsive, and who has offered the lowest evaluated quotation price.</li><li>The Bidder should furnish the contract agreement and performance security within 15 days from the date of receipt of the order for supply of goods / services, failing which the order will be cancelled without further notice and awarded to next eligible bidder.</li><li>Notwithstanding the above, National Institute of Technology, Tiruchirappalli reserves the right to accept or reject any quotations, and to cancel the bidding process, and reject all quotations at any time prior to the award of order without assigning any specific reason thereof.</li><li>National Institute of Technology, Tiruchirappalli, prior to the expiration of the quotation validity period, will notify the bidder whose bid is accepted for the award of contract. The terms of accepted offer shall be incorporated in the purchase order.</li></ol>
16.	<b>Warranty: NIL</b> shall be applicable to the supplied goods and installation work. Bidder should clearly indicate the arrangements for support and maintenance during the period for which the warranty shall be in force.
17.	<b>Performance Security:</b> The successful bidder need to submit performance security for an amount of Percentage <b>3%</b> of purchase order value either in the form of bank guarantee or crossed demand draft drawn on any Nationalized bank in India in favor of "The Director, NIT, Tiruchirappalli" payable at Trichy. The bank guarantee / Demand Draft will be returned to the supplier after 60 days from date of successful completion of supply, installation, and the warranty period.
18.	<b>Payment:</b> 100% will be paid after Installation and satisfactory working/date of completion of service if the documents are in order. The bill should be raised in favor



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	of "The Director, National Institute of Technology, Tiruchirappalli, Tamil Nadu, India." with institute GST No. 33AAATN5491Q1ZZ. No advance will be provided to the supplier/service provider.
19.	<b>GST:</b> This institution has been included in the list of institutions approved for availing exemption from the payment of GST for research purchases under notification no. 45/2017 central tax – (rate), date: 14-11-2017 / notification no. 47 / 2017 integrated tax – (rate), dated: 14-11-2017
20.	<b>Liquidity damages:</b> If the bidder / supplier, after accepting the Purchase Order or supply of Goods / Services, fails to deliver any or all of the Goods or to perform Services within the period(s) specified in the Order, The National Institute of Technology, Tiruchirappalli shall impose penalty without assigning any reasons to the bidder / supplier a sum equivalent to 0.50 % of the total cost as indicated in the Purchase Order (which will be deemed as agreed price) for each week or part thereof of delay until actual delivery or performance is completed and such penal charges shall be limited to a maximum of 5% of the agreed price. Once the maximum is reached The National Institute of Technology, Tiruchirappalli, may proceed on its own to consider the termination / cancellation of the Order and may inform the bidder about the cancellation of the said purchase order. unless extension is obtained in writing from the office / Department mentioning the levy of LD clause on valid ground before expiry of delivery period
21.	If the deliveries are not maintained and due to that account Procuring Entity is forced to buy the material at your risk and cost from elsewhere, the loss or damage that may be sustained there by will be recovered from the defaulting supplier
22.	Dispute clause: Any dispute relating to the enquiry shall be subject to the jurisdiction of the court at Tiruchirappalli only

**ACCEPTANCE BY THE BIDDER**

I/We hereby certify that I/We shall abide hereby the terms and conditions and the Annexures of this limited quotation.

**Signature & Seal of Vendor with Date**

For any details / clarifications regarding could be obtained from Stores and Purchase Section on all working days during 10 AM to 5 PM.

For further detail related to Technical specifications kindly contact Dr. Vivek Mohan (Purchase initiator), **ELECTRICAL AND ELECTRONIC ENGINEERING**, vivekmohan@nitt.edu, **0431 250 3250**.

(NB: Mention the Contact Number / E-mail on the cover. Any change in the date, time and venue of the tender opening will be informed to the bidders through telephone / E-mail)

- |   |                |
|---|----------------|
| <b>Enclosures:</b> 1) Specifications of the equipment | Annexure – I   |
| 2) Price Format                                       | Annexure - II  |
| 3) EMD Return Format                                  | Annexure – III |
| 4) Bank Mandate Form                                  | Annexure – IV  |



Specifications of the Equipment

Ref: NITT/F.NO.017/CAPEX/2021-22/EEE

Date:31.01.2022

S. No	Specification of NIT-T	Specification of the Supplier																																						
1.	<p><b>Power Electronic Switches without driver circuits:</b></p> <table border="1" data-bbox="236 813 1045 1256"><tbody><tr><td><math>V_{CES}</math></td><td><math>T_j = 25\text{ }^\circ\text{C}</math></td><td>1200</td><td>V</td></tr><tr><td rowspan="2"><math>I_c</math></td><td rowspan="2"><math>T_j = 175\text{ }^\circ\text{C}</math></td><td><math>T_c = 25\text{ }^\circ\text{C}</math></td><td>313</td><td>A</td></tr><tr><td><math>T_c = 80\text{ }^\circ\text{C}</math></td><td>241</td><td>A</td></tr><tr><td><math>I_{Cnom}</math></td><td></td><td>200</td><td>A</td></tr><tr><td><math>I_{CRM}</math></td><td><math>I_{CRM} = 3 \times I_{Cnom}</math></td><td>600</td><td>A</td></tr><tr><td><math>V_{GES}</math></td><td></td><td>-20 ... 20</td><td>V</td></tr><tr><td rowspan="3"><math>t_{psc}</math></td><td><math>V_{CC} = 800\text{ V}</math></td><td rowspan="3">10</td><td rowspan="3"><math>\mu\text{s}</math></td></tr><tr><td><math>V_{GE} \leq 15\text{ V}</math></td></tr><tr><td><math>V_{CES} \leq 1200\text{ V}</math></td></tr><tr><td><math>T_j</math></td><td></td><td>-40 ... 175</td><td><math>^\circ\text{C}</math></td></tr></tbody></table> <p><b>Power Electronic Switches with driver circuits:</b></p>	$V_{CES}$	$T_j = 25\text{ }^\circ\text{C}$	1200	V	$I_c$	$T_j = 175\text{ }^\circ\text{C}$	$T_c = 25\text{ }^\circ\text{C}$	313	A	$T_c = 80\text{ }^\circ\text{C}$	241	A	$I_{Cnom}$		200	A	$I_{CRM}$	$I_{CRM} = 3 \times I_{Cnom}$	600	A	$V_{GES}$		-20 ... 20	V	$t_{psc}$	$V_{CC} = 800\text{ V}$	10	$\mu\text{s}$	$V_{GE} \leq 15\text{ V}$	$V_{CES} \leq 1200\text{ V}$	$T_j$		-40 ... 175	$^\circ\text{C}$	<table border="1" data-bbox="1074 656 1484 913"><tbody><tr><td data-bbox="1074 656 1270 786">Make</td><td data-bbox="1270 656 1484 786"></td></tr><tr><td data-bbox="1074 786 1270 913">Model</td><td data-bbox="1270 786 1484 913"></td></tr></tbody></table> <p data-bbox="1074 913 1484 1659">(No hand written)</p>	Make		Model	
$V_{CES}$	$T_j = 25\text{ }^\circ\text{C}$	1200	V																																					
$I_c$	$T_j = 175\text{ }^\circ\text{C}$	$T_c = 25\text{ }^\circ\text{C}$	313	A																																				
		$T_c = 80\text{ }^\circ\text{C}$	241	A																																				
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Make																																								
Model																																								



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$V_{CES}$	$T_j = 25\text{ }^\circ\text{C}$	600	V	
$I_C$	$T_j = 175\text{ }^\circ\text{C}$	$T_c = 25\text{ }^\circ\text{C}$	265	A
		$T_c = 80\text{ }^\circ\text{C}$	200	A
$I_{CRM}$	$I_{CRM} = 2 \times I_{Cnom}$	400	A	
$V_{GES}$		$\pm 20$	V	
$t_{psc}$	$V_{CC} = 360\text{ V}; V_{GE} \leq 15\text{ V}; T_j = 150\text{ }^\circ\text{C}$ $V_{CES} < 600\text{ V}$	6	$\mu\text{s}$	

$V_s$	Supply voltage primary	16	V
$V_{IH}$	Input signal voltage (HIGH)	$V_s + 0.3$	V
$V_{iL}$	Input signal voltage (LOW)	GND - 0.3	V
$I_{outPEAK}$	Output peak current	15	A
$I_{outAVmax}$	Output average current	50	mA
$f_{max}$	Max. switching frequency	50	kHz
$V_{CE}$	Collector emitter voltage sense across the IGBT	1700	V
dv/dt	Rate of rise and fall of voltage secondary to primary side	50	kV/ $\mu\text{s}$
$V_{isolIO}$	Insulation test voltage input - output (AC, rms, 2s)	4000	V
$V_{isolPD}$	Partial discharge extinction voltage, rms, $Q_{PD} \leq 10\text{ pC}$	1500	V
$V_{isol12}$	Insulation test voltage output 1 - output 2 (AC, rms, 2s)	1500	V
$R_{Gon\ min}$	Minimum rating for external $R_{Gon}$	1.5	$\Omega$
$R_{Goff\ min}$	Minimum rating for external $R_{Goff}$	1.5	$\Omega$
$Q_{out/pulse}$	Max. rating for output charge per pulse	2.5	$\mu\text{C}$
$T_{op}$	Operating temperature	-40 ... 85	$^\circ\text{C}$
$T_{stg}$	Storage temperature	-40 ... 85	$^\circ\text{C}$

**Reasons (if there is difference in specification)**

- |    |  |
|----|--|
| 1. |  |
| 2. |  |



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<b>S.No</b>	<b>Other requirements related to the equipment</b>	<b>NITT Requirement</b>	<b>Supplier commitment</b>
1.	Installation required	<b>Yes</b>	
2.	Warranty (in Month)	<b>NIL</b>	
3.	Comprehensive AMC required	<b>No</b>	
4.	Delivery Period (Weeks)	<b>4 Weeks</b>	
5.	Shipment terms		<b>At NIT-T</b>
6.	Performance Security in %		<b>3%</b>
7.	Payment Terms		<b>100% Payment after satisfactory delivery/Installation</b>
8.	EMD Amount (2 to 5)%		<b>Rs. 4,584/- (2%)</b>

**Signature & Seal of Vendor with Date**

**Note:**

Specification of the Supplier should be given in detail, single word confirmation like Complied / Yes / same will be treated as non - responsive Bid and summarily rejected.

Proof for the supplier's specification must be enclosed along with the quotations. (catalogue, brochure, and product website link if any)



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DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

Annexure- II

**PRICE BID FORMAT FOR BIDDERS**

Quotation reference No. & Date : NITT/F.NO.017/CAPEX/2021-22/EEE

Bidder's Offer No. & Date :

S. No.	Description of item	Unit (Set / No)	QTY	Rate / Qty in Rs. (excluding GST)	GST in Rs.			Total Value + GST in Rs.
					SGST	CGST	IGST	
1.	<b>Supply portion</b> (The price indicated shall be exclusive of all accessories, spares etc. as given in the scope of supply)	<u>Nos</u>	<u>30 &amp; 20</u>					
2.	Other accessories / spares etc. as given in scope of supply (Individual item-wise break-up price shall be attached as an annexure to this price bid format.)							
3.	Installation and Commissioning (extra, if any)		<u>YES</u>					
4.	Packing & Forwarding charges (extra, if any)							
5.	Freight & Transit insurance charges, extra, if any							
6.	Total price							
7.	Value of Annual Maintenance Contract							
8.	<b>Net cost to be paid by NIT-T</b>							

**Signature & Seal of Vendor**

**Note:** The price quoted should be in Typed format only as per the above form. Hand written quotes will be rejected. No row shall be left blank, Kindly mention NA in case the item is "Not Applicable". If this format is not used or any column is left blank, then the bid will be rejected. AMC Value will not consider for arriving L1 bidder.





**(TO BE PRINTED IN LETTER PAD OF THE FIRM)**

**EMD Returning Form**

To  
The Director  
National Institute of Technology,  
Tiruchirappalli – 620 015

Sub: Returning EMD amount

Sir / Madam,

Our firm has participated in the tender / quotation enquiry No mentioned below and produced the EMD amount through DD, details of the DD are given below.

Tender / Quotation Reference No	
EMD amount	
DD Number	
DD issued Bank	
Date of DD	

It is requested to return the EMD amount to our firm after completion of the purchase to the below mentioned Bank account.

Account Name	
Bank Account Number	
IFSC code	
Bank	

**Signature with Seal and Date**



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(TO BE PRINTED IN LETTER PAD OF THE FIRM)

Annexure – IV

**MANDATE FORM FOR ELECTRONIC FUND TRANSFER/RTGS TRANSFER**

Date: / /

To

The Director,  
National Institute of Technology,  
Tiruchirappalli – 620 015, Tamil Nadu

Sub	:	Authorization for release of payment / dues from National Institute of Technology, Tiruchirappalli through Electronic Fund Transfer/RTGS Transfer.
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1. Name of the Party / Firm / Company / Institute :
2. Address of the Party :
3. City \_\_\_\_\_ Pin Code \_\_\_\_\_
4. E-Mail \_\_\_\_\_ Mobile No: \_\_\_\_\_
5. Permanent Account Number \_\_\_\_\_
6. Particulars of Bank:

Bank Name:		Branch Name:	
PIN Code:		Branch Code:	
IFS Code:(11 digit alpha numeric code)			
Account Type	Savings	Current	Cash Credit
Account Number:			

**DECLARATION**

I hereby declare that the particulars given above are correct and complete. If any transaction delayed and not effected for reasons of incomplete or incorrect information I shall not hold Director, National Institute of Technology Tiruchirappalli responsible. I also undertake to advise any change in the particulars of my account to facilitate updating of records for purpose of credit of amount through NEFT/RTGS Transfer.

Place: \_\_\_\_\_ Date: \_\_\_\_\_

**Signature & Seal of the Authorized Signatory of the Party**