



॥ त्वं ज्ञानमयो विज्ञानमयोऽसि ॥

## **TENDER DOCUMENT**

TENDER FOR SUPPLY & INSTALLATION OF

**Microwave Characterization Equipment**

UNDER

TWO BID SYSTEM



Indian Institute of Technology Jodhpur  
Old Residency Road, Ratanada, Jodhpur – 342011, Rajasthan  
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Dated: February 23, 2018

**Notice Inviting Tender No. : IITJ/SPS/EE/2017-2018/43**

Sealed tender invited on behalf of the Indian Institute of Technology (IIT), Jodhpur from the Original Equipment Manufacturer or their authorized dealers for the **SUPPLY & INSTALLATION OF Microwave Characterization Equipment** in two-bid format for the laboratory of the institute as per the specifications in **Annexure-I** in two bid system. The tender document can be downloaded from the Institute website at URL Link: <http://www.iitj.ac.in> or from Central Public Procurement Portal link: <https://eprocure.gov.in/epublish/app>.

Schedule	
Date of Issue/Publishing	February 22, 2018
Last Date and Time for submission of Bids	March 09, 2018 03:00 PM
Date and Time of Opening of Technical Bids	March 09, 2018, 04:00 PM
Tender Fee	Rs. 500/- (For Tender Fee)
EMD	Rs. 30,000/- (For EMD)
No. of Covers	01
Cover heading	The cover containing the quotation should be subscribed as Bid for <b>SUPPLY &amp; INSTALLATION OF Microwave Characterization Equipment.</b>
Bid Validity days	180 days (From last date of opening of tender)
Address for Communication	The Assistant Registrar (Stores & Purchase), IIT Jodhpur

**2. Tender Fees and EMD:**

- i. Tender Fees & EMD to be submitted in shape of DD from any commercial bank drawn in favour of the Director, IIT Jodhpur as mentioned against the equipment together with the technical bid, in the absence of which the price bid, if any, will not be opened under any circumstances.
- ii. The firm(s) who are registered with the National Small Industries Corporation (NSIC) / or Small Scale Industries (SSI) for the subjected goods are exempted from furnishing the EMD and tender fee. Self-attested photocopy of the valid registration certificate must be enclosed with the technical bid.

- iii. The demand drafts for earnest money deposit & tender fee must be enclosed in the envelope containing the technical bid. Any technical bid is found without the demand drafts of earnest money deposit and tender fee will be rejected. The Institute will not be liable to pay any interest on such an amount. The earnest money deposit shall be forfeited, if the tenderer withdraws its bid during the period of tender validity.
- iv. The earnest money deposit of the tenderer, whose tender has been accepted, will be returned on the submission of the Performance Security. Earnest money deposit of the successful tenderer shall be forfeited, if it refuses or neglects to execute the order or fails to furnish the required performance security within 70 days of issue of Purchase Order.
- v. The EMD shall be refunded to the unsuccessful bidders after finalisation of the quotation. In case of successful bidder it will be paid against performance bank guarantee.

**3. Two Bid System :**

- i. Technical bid consisting of all technical details along with commercial terms and conditions and EMD; and
- ii. Financial bid indicating item-wise price for the items mentioned in the technical bid.
- iii. Technical bid and financial bid should be sealed in separate covers duly superscribed and both these sealed covers are to be put in a bigger cover which should also be sealed and duly superscribed as **"Technical Bid for the SUPPLY & INSTALLATION OF Microwave Characterization Equipment" due on March 09, 2018, 03:00 PM.** Technical bids shall be opened at the first instance and evaluated by technical committee. At the second stage financial bids of the only technically qualified bidders shall be opened for financial evaluation and ranking before awarding the contract. Mixing price bid with technical bid will disqualify your bid for further evaluation.

**4. Submission of tender:**

Offers addressed to the 'Assistant Registrar (S&P), IIT Jodhpur' and valid for 180 days (From last date of opening of tender) should reach the **Office of Assistant Registrar (S&P), IIT Jodhpur, NH-65, Nagaur Road, Karwar'** on or before the last date and time. Tenders received late shall not be considered.

**5. Bidding:**

- i. Either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid.
- ii. If an agent submits bid on behalf of a Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.
- iii. All offers other than those from the Principal/OEM should be supported by an authority letter from the manufacturer authorizing the supplier to tender on their behalf. In case of manufacturer a certificate or a copy thereof to the effect that

the bidder is a manufacturer of the equipment must be accompanied with the technical bid prepared as per '**Annexure-II**'.

**6. Opening of Bids:**

Technical bids will be opened as per the schedule in the presence of bidders or their authorized representatives whosoever may wish to attend. In case the due date of receipt/opening of the quotation/s (technical/price) is declared a holiday in the Institute, then, the due date of receipt/opening of the quotations shall be the next working day at the same time.

**7. Rejection of Bids:** Canvassing by the Bidder in any form, unsolicited letter and post-tender correction may invoke summary rejection with forfeiture of EMD. Conditional tenders will be rejected. Non-compliance of applicable General Information as well as compliance of Technical Specification in **Annexure-I** and Compliance Sheet in **Annexure-VI** will disqualify your Bid.

**8.** Bids of debarred/blacklisted firms will not be considered for evaluation. The firms must submit the declaration in format in **Annexure-V**.

**9. Price Bid:**

Price bid should be prepared as per '**Annexure-IV**'.

**10. Rates Comparison:**

Bidders are requested to send their rates (inclusive of transportation, loading, unloading, GST etc, nothing extra will be paid and free delivery and installation) on FOR, IIT Jodhpur, Karwad, NH 65, Nagaur Road basis in case of indigenous items and on FOB/FCA basis in case of imported items with separately mentioning CIF/CIP charges. Rates comparison will be made on Net Price (Including Freight/Insurance/Installation/Taxes/Duties etc.) if offers are received both for indigenous and import items. If offers are received only for import items then comparison will be made on FOB/FCA basis. Rates of available foreign currency will be taken from RBI website as on the opening of the technical bids for the purpose of conversion in Indian rupees.

AMC/CMC charges will not be included for the evaluation of the commercial bids.

**11. Spares:**

The spare parts/wear & tear consumables, if any, required for trouble free operation of equipment to be quoted separately giving the full nomenclature, rate, quantity and shelf life of each item.

**12. Indigenous items:**

The items which can/are to be provided indigenously may be listed separately.

**13. Parts of Equipments:**

Where the equipment is composed of several subunits/components, the rate should be quoted for each subunit/component. The Institute reserves the right to increase or decrease the number of subunits/ components and number of equipment according to its requirements. The rates in ambiguous terms will render the quotation liable to

rejection. The words “Not quoting” should be clearly written against any item of equipment for which the tenderer is not quoting.

**14. Award of Contract:**

After due evaluation of the financial bid(s), the Institute will award the order to the lowest evaluated responsive tenderer (hereinafter referred to as the “Supplier”). *If required order may be placed for the less quantity.*

**15. Performance Security:**

After the award of work, the supplier shall be required to submit the performance security in the form of irrevocable bank guarantee in the prescribed format (**Annexure-III**) issued by any Nationalised/ Scheduled Bank / or Fixed Deposit Receipt, for an amount equal to the 10% of order value, within 60 days of issue of Purchase Order and **it will be kept valid for a period of 60 days beyond the date of completion of warranty period. Warranty Period will be commenced from the date of the installation of the supplied item. Hence, be careful at the time of calculation of the validity date of Performance Bank Guarantee.**

**16. Payment Terms:**

Payment will be made to the supplier through following modes.

- i. **Indigenous goods:** NEFT/Cheque/Demand Draft: 90% payment will be made within 30 days from the date of receipt of material at IIT Jodhpur and balance 10% after successful installation of the equipment and on the submission of performance bank guarantee valid for warranty period + 2 months.
- ii. **Imported goods:** Letter of credit/Telegraphic Transfer 90% payment will be made through LC/TT/SD and balance 10% after successful installation of the equipment and submission of performance bank guarantee for 10% of order value, either by the principal company or by their Indian agent valid for warranty period + 2 months. Bank charges occurred outside India will be borne by the beneficiary.

**17. Delivery & Installation:**

- i. All the goods ordered shall be delivered and installed at Permanent Campus of the Institute, Karwad (NH-65), Nagaur Road, Jodhpur, within **2 months** from the date of issue of the purchase order/ date of opening of Letter of Credit. All the aspects of safe delivery and commissioning shall be the exclusive responsibility of the supplier. If the supplier fails to deliver and commissioning of the goods on or before the stipulated date, then a penalty at the rate of 1% per week of the total order value shall be levied subject to maximum of 10% of the total order value. The delivery must be completed within this specified period. The Purchase Order/Supply Order/ Import Order is liable to be cancelled, if no extension for delivery period is sought before the expiry of delivery period or suitable penalty will be impounded. Delivery should be done after intimation by the Institute.
- ii. **Satisfactory Installation:** Satisfactory installation / commissioning and handing over of the equipment mean the faultless functioning of the equipment for a minimum period of 30 days after satisfactory installation.
- iii. **Extension of Delivery & Installation Period:** If the supplier would unable to

complete the project / order within the stipulated time, for which the supplier is responsible, it is required to request for the extension of the delivery period, it may be extended with the imposing of the liquidated damages.

In case the supplier would fail to complete the order within the stipulated time, Institute reserves the right to cancel the contract / order and performance security / EMD may be forfeited.

**18. Training of Personnel:**

The supplier shall provide the technical training to the personnel involved in the use of the equipment at the Institute premises, immediately after completing the installation of the equipment at the company cost.

**19. Site Preparation:**

The supplier shall inform to the Institute about the site preparation, if any, needed for the installation of equipment, immediately after the receipt of the purchase order. The supplier must provide complete details regarding space and all the other infrastructural requirements needed for the equipment, which the Institute should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter.

The supplier shall visit the Institute and see the site whether the equipment is to be installed and may offer his advice and render assistance to the Institute in the preparation of the site and other pre-installation requirements.

**20. Merger / Acquisition of Foreign Principal:**

In case of merger of Foreign Principal with another Firm or acquisition of Foreign Principal by another firm, it shall be obligatory for the New Entity so formed after the merger of the Acquiring Firm, as the case may be, to take over all the duties and obligations / liabilities of the Foreign Principal and the New Entity / Acquiring Firm would *ipso facto* become liable for all acts of commission or omission on the part of original Foreign Principal as well as Indian Agent.

**21. Change of Indian Agent:**

In case the Foreign Principal changes in Indian Agent then it shall be obligatory for Foreign Principal to automatically transfers all the duties and obligations to the New Indian Agent, failing which the Foreign Principal would *ipso facto* become liable for all acts of commission or omission on the part of New Indian Agent.

**22. Service Manual/Circuit Diagram**

It is specifically required that the bidders will supply all the operating & service manuals and circuit diagrams along with the equipment.

**23. Guarantee / Warranty:**

- i. Three year warranty has to be provided by the firm from the date of the satisfactory installation / commissioning of equipment against the defect of any manufacturing, workmanship and poor quality of components. In case, there is

any variation in the warranty as per the specification of the item equipment, the warranty as specified in the specifications shall be final.

- ii. In case, supplier fails to repair / or rectify the equipment during the warranty / guarantee period, Institute may employ or pay other person/company for repairing the equipment, and all such damages, loss and expenses shall be recovered from the supplier. Annual Maintenance Contract charges for 3 years after the expiry of warranty period should be quoted.

**24. Country of origin:**

Country of origin of the quoted item should be mentioned in the offer in case of imported item.

**25. Taxes & duties:**

i. **General** – As per applicable Government rules for GST

ii. **Customs Duty:**

- The successful bidder would be issued a Customs Duty Exemption Certificate (CDEC) under the notification 51/96 (direct import) at the time of import clearance for the goods being imported against the Contract. Bidder would be required to submit a copy of their order to principal along with principal's acceptance, proforma invoice and Air Waybill copy of the Consignment as soon as it generated from the suppliers end and sent to the office of Stores & Purchase through email at [sps@iitj.ac.in](mailto:sps@iitj.ac.in) for issuance of CDEC.
- Subsequent to Ministry of Finance notification no. 14/2016 dated 1<sup>st</sup> Mar 2016, the custom duty will be leviable in case of 3rd party import. Hence, **no Custom duty exemption certificate will be provided for 3rd party import**. Therefore, the vendor is requested to indicate separately the approximate amount of customs duty for stores being imported. Custom duty will be paid at actuals against proof of payment and bill of entry.
- Institute is registered with DSIR, Govt. of India (Custom Duty Notification No. 51/96- Custom dt: 23 July, 1996 and Central Excise Duty Notification No. 10/97- Central Excise dt: 1 March, 1997) and is therefore, exempted from Excise Duty and partial exempted from Custom Duty (CD applicable to IIT Jodhpur is 5.15%). Exemption Certificate of the same shall be issued. After GST Notification 2017 benefit of 51/96-Cus has been covered under 43/2017- Custom (Tariff) and the treatment of such imports is the same as earlier (BCD - 5%, IGST - exempted).

**26. Service Facility:**

Bidder should mention about the service set up in India and how capable they are to provide after sales services.

**27. Banker's details:**

Name and address of the banker of your company should be mentioned.

**28. Reference of supply:**

Name and contact details of the premier educational Institutes where the quoted equipment has been installed in India should be enclosed. Copies of at least two purchase orders may be attached (If possible). IIT Jodhpur reserves the right to inspect the equipment for its actual performance in any of the listed Institute.

**29. Undertaking from the Bidders:**

An undertaking will be submitted by the Bidder/firm/company/vendor that in the past they have never been banned/debarred for doing business dealings with Ministry of Defence/Govt. of India/ any other Govt. organisation and that there is no enquiry going on by CBI/ED/any other Govt. agency against them.

**30. Repeat Order Clause:** The Contract will have a Repeat Order Clause, wherein the Buyer can order up to 50% quantity of the original contracted quantity (rounded up to the next whole number) under the Contract within six months from the date of completion of supply under the original Contract/ PO. The Repeat Order will have rates on not exceeding basis while the terms and conditions will remain unchanged. It will be entirely the discretion of the Buyer to exercise the Repeat order or not.

**31. Acceptance of Terms & Conditions:**

Bidders must confirm the acceptance of all the terms and conditions of this NIQ. Any non-acceptance or deviations from the terms and conditions must be clearly mentioned. However, tenderers must note carefully that any conditional offer or any deviation from the terms and conditions of this NIQ may render the quotation liable for rejection. IITJ does not bind itself to accept the lowest of any tender and reserves the right to reject any or all tenders without assigning any reason.

Note: The Director, IIT Jodhpur reserves the right to accept/reject any or all tenders without assigning any reasons thereof and also to reject.

**32. 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 Jodhpur only. The resolution of the Arbitrator shall be final and binding on both the parties.

**33. Jurisdiction:**

The courts at Jodhpur 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 Jodhpur court shall have jurisdiction in the matter.



### TECHNICAL SPECIFICATION COMPLIANCE

Note: Supplier MUST provide the model number of their product in the cover letter which complies with the tender specifications and an original printed manual of the same shall be submitted with the bid. Bidders should highlight the features in the printed manual using color text liner/manually mark which complies with the tendered specifications. Vendors are strongly advised not to submit any other manual in their bid. The following compliance sheet to be filled-up correctly and completely. Otherwise, it may lead to cancellation of their bid without any communication from IIT Jodhpur.

#### **Specifications for SUPPLY & INSTALLATION OF Microwave Characterization Equipment**

1.

S. No.	Description	Qty.	Technical Compliance (Y/N)
1.	Klystron Power Supply	01 Nos.	
2.	Klystron Mount	01 Nos.	
3.	Klystron Tube	01 Nos.	
4.	Isolator	01 Nos.	
5.	Direct Reading Frequency Meter	01 Nos.	
6.	Variable Attenuator	01 Nos.	
7.	Fixed Attenuator 3db	01 Nos.	
8.	Slotted Section	01 Nos.	
9.	Tunable Probe	01 Nos.	
10.	Detector Mount	01 Nos.	
11.	Movable Short	01 Nos.	
12.	Matched Termination	01 Nos.	
13.	VSWR Meter	01 Nos.	
14.	Waveguide Stand	01 Nos.	
15.	Slide Screw Tuner	01 Nos.	
16.	Cooling Fan	01 Nos.	
17.	BNC- BNC Cable	01 Nos.	
18.	BNC- Open Cable	01 Nos.	
19.	Fixed Short	01 Nos.	
20.	Matched Termination	01 Nos.	
21.	Multi-Hole Directional Coupler 3, 10,20db	01 Nos.	
22.	3- Post Circulator (Y-Type)	01 Nos.	
23.	E- Plane Tee	01 Nos.	
24.	H- Plane Tee	01 Nos.	
25.	Magic Tee	01 Nos.	

**Specification:** Operating frequency: X band (8.2-12.4 GHz)

**Klystron mount:** Waveguide type: WR-90

**Klystron Power Supply:**

Input voltage: 230 V AC,  $\pm 10\%$ , 50 Hz

Beam Supply: Voltage: 240-400 Vdc, Variable Current: 50 mA

Regulation: 0.5% for 10% I/P variation Ripple: < 5 mv RMS

Repeller supply: 10-270 Vdc, Variable regulation: 0.25% for 10% I/P variation

Filament supply: 6.3 V

Overload trip current: 65 mA

Modulation: AM (square) 500-2500 Hz, 0-110 V

FM (SAW-tooth) 150-300 Hz, 0.65 V

Display: beam voltage, beam current, repeller voltage

**Isolator:** Frequency range: X band; Min. Isolation: 20 dB; Min. insertion loss: 0.4 dB;

Max VSWR: 1.2

**Direct Frequency meter:** operating frequency : X band (8.2-12.4 GHz) Waveguide type: WR-90

**Variable attenuator:**

Max. VSWR: 1.10

Avg. power: 2.0 W

Max. Insertion loss: 0.2 dB

Waveguide type: WR-90

**Fixed attenuator:**

Attenuation: 3 dB $\pm$ 0.2

VSWR: less than or equal to 1.1

Insertion loss: 0.2 dB

Avg. Power: 2.0 W

Waveguide type: WR-90

**Slotted section:**

VSWR: less than or equal to 1.01

Waveguide type: WR-90

**Tunable probe:** o/p connector: BNC (F)

**Waveguide Detector mount:** Waveguide type: WR-90 ; o/p connector: BNC (F)

**Movable short:** Waveguide type: WR-90

**Matched termination:**

Max VSWR: 1.04; Avg. Power: 2.0 W Waveguide type: WR-90

**VSWR meter:**

Frequency: 1000 Hz  $\pm 2\%$

Sensitivity: 0.1 microvolt at 200 ohms for full scale

Bandwidth: 25-30 Hz

Noise-level: less than 0.02 microvolt

Range: 70 dB min. in 10 dB steps

Accuracy:  $\pm 0.15$  dB in one range

Meter linearity: 1% of full scale

Scale-selector: Normal, Expand

Gain- control: Coarse and Fine

Input: BNC(F), 200 ohms impedance

Main supply: 230 V, 50 Hz

**Waveguide Stand:** adjustable height with locking screw – X band

**Multihole directional coupler:**

Frequency range: 8.2-12.4 GHz

Coupling: 3,10,20 dB

Directivity: 35 dB

**3-port Circulator:** Min. Isolation: 20 dB; Min. Insertion loss: 0.4 dB; Max. VSWR: 1.2

**E and H plane Tee and Magic Tee:** Waveguide type: WR-90

2.

S. No.	Description	Qty.	Technical Compliance (Y/N)
1.	Gunn Power Supply	01 Nos.	
2.	Gunn Oscillator	01 Nos.	
3.	PIN Modulator	01 Nos.	
4.	Isolator	01 Nos.	
5.	D.R Frequency Meter	01 Nos.	
6.	Variable Attenuator	01 Nos.	
7.	Slotted Section	01 Nos.	
8.	Tunable Probe	01 Nos.	
9.	Detector Mount	01 Nos.	
10.	Movable Short	01 Nos.	
11.	Matched Termination	01 Nos.	
12.	VSWR Meter	01 Nos.	
13.	Slide Screw Tuner	01 Nos.	
14.	Cooling Fan	01 Nos.	
15.	BNC- BNC Cable	01 Nos.	
16.	BNC- Open Cable	01 Nos.	
17.	Fixed Short	01 Nos.	

**Specification:** Operating frequency : X band (8.2-12.4 GHz)

**Gunn power Supply:**

Gunn bias voltage: 0-12V

Current: 0-1 A

Regulation: 0.2% for  $\pm 10$  mains variation

Ripple: 2 mV (rms)

Modulation selector switch: CW & INT.

Modulation Frequency: 850-1150 Hz square wave

Mod. Amplitude: 0-10 V (peak to peak)

Output connector: BNC(F) for Gunn Bias

Mains: 230 V, 50 Hz, 35 Watts

**Gunn Oscillator:**

Min. output power: 10 mW; Waveguide type: WR-90

**Pin Modulator:**

Max RF power: 1.0 W; Waveguide type: WR-90

**Isolator:** Frequency range: X band; Min. Isolation: 20 dB; Min. insertion loss: 0.4 dB;

Max VSWR: 1.2

**Direct Frequency meter:** operating frequency : X band (8.2-12.4 GHz) Waveguide type: WR-90

**Variable attenuator:**

Max. VSWR: 1.10

Avg. power: 2.0 W

Max. Insertion loss: 0.2 dB

Waveguide type: WR-90

**Slotted section:**

VSWR: less than or equal to 1.01

Waveguide type: WR-90

**Tunable probe:** o/p connector: BNC (F)

**Waveguide Detector mount:** Waveguide type: WR-90 ; o/p connector: BNC (F)

**Movable short:** Waveguide type: WR-90

**Matched termination:**

Max VSWR: 1.04; Avg. Power: 2.0 W Waveguide type: WR-90

**VSWR meter:**

Frequency: 1000 Hz  $\pm 2\%$

Sensitivity: 0.1 microvolt at 200 ohms for full scale

Bandwidth: 25-30 Hz

Noise-level: less than 0.02 microvolt

Range: 70 dB min. in 10 dB steps

Accuracy:  $\pm 0.15$  dB in one range

Meter linearity: 1% of full scale

Scale-selector: Normal, Expand

Gain- control: Coarse and Fine

Input: BNC(F), 200 ohms impedance

Main supply: 230 V, 50 Hz

3.

S. No.	Description	Qty.	Technical Compliance (Y/N)
1.	<b>Klystron Power Supply</b>	<b>01 Nos.</b>	
2.	<b>Klystron Mount</b>	<b>01 Nos.</b>	
3.	<b>Klystron Tube</b>	<b>01 Nos.</b>	
4.	<b>Slotted Section</b>	<b>01 Nos.</b>	
5.	<b>Tunable Probe</b>	<b>01 Nos.</b>	
6.	<b>Detector Mount</b>	<b>01 Nos.</b>	
7.	<b>Movable Short Prce.</b>	<b>01 Nos.</b>	
8.	<b>S. S. Tuner</b>	<b>01 Nos.</b>	
9.	<b>Waveguide Stand</b>	<b>02 Nos.</b>	

**Specification:** Operating frequency: C band (3.95-5.85 GHz)

**Klystron mount:** Waveguide type: WR-187

**Klystron Power Supply:**

Input voltage: 230 V AC,  $\pm 10\%$ , 50 Hz

Beam Supply: Voltage: 240-400 Vdc, Variable Current: 50 mA

Regulation: 0.5% for 10% I/P variation Ripple: < 5 mv RMS

Repeller supply: 10-270 Vdc, Variable regulation: 0.25% for 10% I/P variation

Filament supply: 6.3 V

Overload trip current: 65 mA

Modulation: AM (square) 500-2500 Hz, 0-110 V

FM (SAW-tooth) 150-300 Hz, 0.65 V

Display: beam voltage, beam current, repeller voltage

**Slotted section:**

VSWR: less than or equal to 1.01

Waveguide type: WR-187

**Tunable probe:** o/p connector: BNC (F)

**Waveguide Detector mount:** Waveguide type: WR-187 ; o/p connector: BNC (F)

**Movable short:** Waveguide type: WR-187

**Waveguide Stand:** adjustable height with locking screw – C band (3.95-5.85 GHz)

4.

S. No.	Description	Qty.	Technical Compliance (Y/N)
1.	<b>Horn Antenna</b>	<b>02 Nos.</b>	
2.	<b>Tripod</b>	<b>02 Nos.</b>	
3.	<b>Microwave Source</b>	<b>01 Nos.</b>	
4.	<b>Adapter</b>	<b>02 Nos.</b>	

**Specification:** S band (2.6-3.95 GHz)

**Horn Antenna:**

Pyramidal Waveguide Horn made of brass sheet (WR-284)

**Gain:** 16 dB and above

**VSWR:** below 1.2

**Microwave Source:**

**1. Frequency**

Range : 2.0 GHz to 3.0 GHz

Accuracy : +/- 50 MHz (at standard room temp)

**2. Power output**

RF power output : 10mw (min)

RF level control : 15 db min. adjustable

**3. Operating modes**

Sweep mode : Internal sweep, rate adjustable from 10 Hz to 500 Hz,  
: sweeps 2 GHz to 3 GHz in one sweep.

CW mode : power output controllable.

Internal AM : square wave modulation (near 100% modulation index),  
: Modulation frequency controllable from 100 Hz to 5 KHz.

Internal FM : Triangular wave FM modulation frequency 100Hz  
: to 5KHz adjustable with a frequency deviation of approximately 1MHz

External AM/FM : input available for external modulation signals ( $\pm 5V$  max. input)

**4. General**

Operating temperature : 0° to 45°

Humidity : 0 to 90% (no condensation)

Power requirements : AC input 230 VAC  $\pm$  10V max, 20 Watts (max)

Signal connectors : RF output-N(F)

: AM/FM-BNC, sweep out -BNC

: power - 3pin socket

5.

S. No.	Description	Qty.	Technical Compliance (Y/N)
1.	Horn Antenna with adaptor	02 Nos.	
2.	MW Power Meter	01 Nos.	

**Specification:** L band (1.7-2.6 GHz)

**Horn Antenna:**

Pyramidal Waveguide Horn made of brass sheet (WR-430)

**Gain:** 16 dB and above

**VSWR:** below 1.2

**Microwave Power meter:**

**Power range:** 1mW

**Accuracy:** ±1% of fullscale on milliwatt range and ±2.5% on microwatt range

**Zero Carryover:** less than 0.5% of fullscale

**Power supply:** 230 V ±10% AC, 50 Hz, 10 W

6. **Singe Stub Tuner** - X Band (8.2-12.4 GHz) - 02 Nos. Waveguide type: WR-90

7. **Double Stub Tuner**- X Band (8.2-12.4 GHz) - 02 Nos. Waveguide type: WR-90

8. **Inductive coupling window based load**- X Band (8.2-12.4 GHz) - 01 Nos. Waveguide type: WR-90

9. **Capacitive coupling window based load**- X Band (8.2-12.4 GHz) - 01 Nos. Waveguide type: WR-90

10. **Coupling window type Waveguide termination:** X Band (8.2-12.4 GHz) - 01 Nos. Waveguide type: WR-90

11. **Horn Antenna with adapter** - X Band (8.2-12.4 GHz) - 02 Nos.

**Specification:**

Pyramidal Waveguide Horn made of brass sheet

**Gain:** 16 dB and above

**VSWR:** below 1.2

12. **Horn Antenna with adapter** - C Band (3.95-5.85 GHz) - 02 Nos.

**Specification:**

Pyramidal Waveguide Horn made of brass sheet

**Gain:** 16 dB and above

**VSWR:** below 1.2

13.

S. No.	Description	Qty.	Technical Compliance (Y/N)
1.	LPF	01 Nos.	
2.	BPF	01 Nos.	
3.	BSF	01 Nos.	

4.	<b>Branch Line Coupler</b>	<b>01 Nos.</b>	
5.	<b>Rat Race Coupler</b>	<b>01 Nos.</b>	
6.	<b>Amplifier circuit</b>	<b>01 Nos.</b>	

**Specification:** Operating frequency : X band (8.2-12.4 GHz)

**LPF:** Assymetrical Stub line low-pass filter cutoff frequency: 10.2 GHz

**BPF:** three resonator BPF center frequency: 10.2 GHz Bandwidth: 2 GHz

**BSF:** Five-stub BSF center frequency: 10.2 GHz Bandwidth: 2 GHz

**Branch line Coupler:** operating frequency: 10.2 GHz

**Rat-race Coupler:** operating frequency: 10.2 GHz

**Amplifier Circuit: Gain: 10 dB**

**Frequency:** 9-11 GHz

**Max. i/p power:** 10 dBm

14.

S. No.	Description	Qty.	Technical Compliance (Y/N)
1.	<b>LPF</b>	<b>01 Nos.</b>	
2.	<b>BPF</b>	<b>01 Nos.</b>	
3.	<b>BSF</b>	<b>01 Nos.</b>	
4.	<b>Amplifier circuit</b>	<b>01 Nos.</b>	

**Specification:** Operating frequency: C band (3.95-5.85 GHz)

**LPF:** low- impedance high impedance low-pass filter cutoff frequency: 5 GHz

**BPF:** four resonator BPF center frequency: 5 GHz Bandwidth: 2 GHz

**BSF:** three stub BSF center frequency: 5 GHz Bandwidth: 2 GHz

**Amplifier Circuit: Gain: 10 dB**

**Frequency:** 4-6 GHz

**Max. i/p power:** 10 dBm

**N.B.:**

**1. The operating frequency of Item No. 1 and 2 should be exactly same.**

**2. Calibration chart of each component tested in network analyzer should be provided.**



**FORMAT FOR MANUFACTURER’S AUTHORISATION LETTER TO AGENT (on letter head)**

Ref. No.

Date:

To,  
The Director  
Indian Institute of Technology Jodhpur  
Old Residency Road, Ratanada, Jodhpur - 342011.

**Sub.: Authorization Letter.**

Dear Sir,

We, \_\_\_\_\_, who are established and reputed manufacturers of \_\_\_\_\_, having factory at \_\_\_\_\_, hereby authorize M/s. \_\_\_\_\_ (name & address of Indian distributor /agent) to bid, negotiate and conclude the order with you for the above goods manufactured by us.

We shall remain responsible for the tender / contract / agreement negotiated by the said M/s. \_\_\_\_\_, jointly and severally.

We ensure that we would also support / facilitate the M/s \_\_\_\_\_ on regular basis with technology / product updates for up-gradation / maintains / repairing / servicing of the supplied goods manufactured by us, during the warranty period.

In case duties of the Indian agent / distributor are changed or agent / distributor is changed it shall be obligatory on us to automatically transfer all the duties and obligations to the new Indian Agent failing which we will ipso-facto become liable for all acts of commission or omission on the part of new Indian Agent / distributor.

Yours faithfully,

[Name & Signature]

for and on behalf of M/s. \_\_\_\_\_ [Name of manufacturer]

**Note:** This letter of authorisation should be on the letterhead of the manufacturing concern and should be signed by a person competent and having the power of attorney to bind the manufacturer. A copy of notarised power of attorney should also be furnished.

**BANK GUARANTEE FORM FOR PERFORMANCE SECURITY**

The Director  
Indian Institute of Technology Jodhpur,  
Jodhpur (India) 342011.

WHEREAS..... (Name and address of the Supplier) (herein after called “the Supplier”) has undertaken, in pursuance of contract no..... dated ..... (herein after called “the contract”) to supply

.....  
.....

AND WHEREAS it has been stipulated by you in the said contract that the Supplier shall furnish you with a bank guarantee by a scheduled/nationalized bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with and due performance of the contract;

AND WHEREAS we have agreed to give the Supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the Supplier, up to a total of .....

.....(amount of the guarantee in words and figures), and we hereby irrevocably and absolutely undertake to pay you immediately, upon your first written demand declaring the Supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of(amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the Supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

The Bank guarantee shall be interpreted in accordance with the laws of India. The Guarantor Bank represents that this Bank Guarantee has been established in such form and with such content that is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

The Bank Guarantee shall not be affected in any manner by reason of merger, amalgamation, restructuring or any other change in the constitution of the Guarantor Bank or the Supplier. The Bank further undertakes not to revoke this Guarantee during its currency except with the previous express consent of the Buyer in writing.

The Bank declares that it has power to issue this Guarantee and discharge the obligations contemplated herein, the undersigned is duly authorized and has full power to execute this Guarantee for an on behalf of the Bank.

This guarantee shall be valid up to and including the ..... day of ....., 20.....

.....  
(Signature with date of the authorised officer of the Bank)

.....  
Name and designation of the officer

.....  
Seal, name & address of the Bank and address of the Branch

**FORMAT FOR THE SUBMISSION OF RATES – PRICE BID**  
(To be submitted on the letterhead of the company/firm)

Date: 22/02/2018

Name of the Equipment: **SUPPLY & INSTALLATION OF Microwave Characterization Equipment**

Name of the Manufacturer \_\_\_\_\_

Make of the Equipment \_\_\_\_\_

Model Number \_\_\_\_\_

County of Origin \_\_\_\_\_

**Subject: SUPPLY & INSTALLATION OF Microwave Characterization Equipment (Following format is used for imported items)**

S. No.	Currency	Description and Specification of the Item	Qty. in Units	Unit Price (a)	Agency Commission (If applicable) (b)	Discount (C)	Ex-works price (d=a+b-c)	Packing + Handling + DOC + Inland Freight + FCA Charges (e)	FOB/FCA Airport Price (f=d+e)	Insurance + Freight (g)	CIF Price

**Note: At any circumstances, it is the responsibility of the foreign supplier to hand over the material to our forwarder at the origin airport after completing all the inland clearing. No Ex-works consignment will be entertained.**

**For indigenous items please quote as per following format.**

S. No.	Description and Specification of the Item	Qty. in Units	Unit Price in Rs.	GST %	GST Amount	Total Price in Rs.

**Note: The above financial template should be strictly followed. Any deviation from the above template (in terms of description and specification of the item) may lead to cancellation of the tender.**

This is certified that the rates quoted above are not more than the rates charged from any other Institute/ Department/Organization.

**Signature & Seal of the Tenderer**

**FORMAT FOR NON BLACKLISTING OF SUPPLIER**

I/ We \_\_\_\_\_Manufacturer/partner/Authorized Distributor/Agent (strike out which is not applicable) of (Supplier) \_\_\_\_\_ do hereby declare and solemnly affirm that the individual/firm/company is not black-listed by the Union/State Government/Autonomous body.

Deponent

Address \_\_\_\_\_

I/ We hereby solemnly declare and affirm that the above declaration is true and correct to the best of my knowledge and belief. No part of it is false and nothing has been concealed.

Deponent

Dated: \_\_\_\_\_

(Note: To be furnished on non-judicial stamp paper duly attested by the Oath Commissioner.)

**INDIAN INSTITUTE OF TECHNOLOGY JODHPUR, KARWAD (RAJASTHAN)**  
**COMPLIANCE SHEET**

**IMPORTANTNOTE**

THIS STATEMENT SHOULD BE DULY FILLED AND ENCLOSED WITH QUOTATION. NONRECEIPT OF THIS STATEMENT OR INCOMPLETE DETAILS PROVIDED WILL LEAD TO REJECTION OF TENDER

**Tender Enquiry No:**

<b>S. No.</b>	<b>Commercial Aspects</b>	<b>IITJ Terms</b>	<b>Response of the Vendor</b>
1.	Terms of Delivery	FOR IIT Jodhpur, Karwad	
2.	Terms of Payment	Payment will be made to the supplier through following modes. i. <b>Indigenous goods:</b> NEFT/Cheque/Demand Draft: 90% payment will be made within 30 days from the date of receipt of material at IIT Jodhpur and balance 10% after successful installation of the equipment and on the submission of performance bank guarantee valid for warranty period + 2 months. ii. <b>Imported goods:</b> Letter of credit/ Telegraphic Transfer 90% payment will be made through LC/TT/SD and balance 10% after successful installation of the equipment and submission of performance bank guarantee for 10% of order value, either by the principal company or by their Indian agent valid for warranty period + 2 months. Bank charges occurred outside India will be borne by the beneficiary.	
3.	Mode of Payment	RTGS/NEFT	
4.	Bank Details for making Payment	To be closed	
5.	Validity of Quote	180 days from the date of opening of Tender	
6.	Name of Manufacturer	Name & complete address of the Manufacturer	
7.	Currency in which quoted	INR	
8.	Delivery Period	2 months from effective date of Contract	
9.	No. of Lots	01 lot	
10.	Installation/Supply	IIT Jodhpur, Karwad	
11.	Earnest Money Deposit	Rs. 30,000/- (Please see para 1 for complete details)	
12.	Liquidated damages ( <b>mandatory requirement, if not accepted quotation will not be considered</b> )	(1% of per week maximum upto 10% of the contract value excluding taxes for the delayed period)	
13.	Order to be placed on	complete address with contact details of the supplier	
14.	Customs Duty Percentage Applicable and requirement of Customs Duty Exemption	Percentage of Customs Duty Applicable to be specified even if CDEC is to be issued by DRL (under Customs notification No.51/96 wherever	

	Certificate (CDEC).	applicable). No third party CDEC will be Provided	
15.	Applicable GST as per Govt. rules	GST % should be mentioned separately	
16.	Performance cum Warranty Bond	(10 % of the order value) As per tender	
17.	Name & Address of the Firm:		
18.	Compliance(choose any one)	We hereby accept all the terms & conditions of the tender. Or We hereby accept all the terms & conditions of the tender except the one mentioned in separate sheet.(mention the non-compliance conditions in separate sheet)	
19.	Signature &Name of the authorised signatory with stamp of the firm:		