



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

INDIAN INSTITUTE OF TECHNOLOGY JODHPUR

Request For Technical Information and Pro Forma Quotations

For Procurement of 5 MHz Impedance Analyzer with Lock-In Amplifier

1. Introduction

The Indian Institute of Technology Jodhpur (IIT Jodhpur) intends to procure **5 MHz Impedance Analyzer with Lock-In Amplifier** for academic and research purposes.

Before initiating the formal procurement process, the Institute invites **Technical Information And Indicative Pro Forma Quotations** from eligible Original Equipment Manufacturers (OEMs) or their authorized representatives.

2. Purpose

The objectives are to:

- Obtain technical information from prospective OEMs/authorized representatives.
- Obtain indicative Pro forma quotations for estimating the procurement cost.

3. Disclaimer

This document is issued **only for obtaining technical information and indicative Pro Forma quotations**.

Submission of information under this proposal:

- shall **not** be treated as a financial bid;
- shall **not** constitute any commitment on the part of IIT Jodhpur to procure the equipment;
- shall **not** confer any right upon the participating firm for award of any future contract;
- shall **not** automatically qualify the responding firm for participation in any future tender.

The Institute reserves the right to modify the technical specifications, estimated cost, procurement methodology, or procurement timeline based on its requirements.

4. Equipment Details

- Name of Equipment: **5 MHz Impedance Analyzer with Lock-In Amplifier**
- Quantity: 01



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

- Broad Functional Requirements (The essential functions or capabilities that the equipment should have, without mentioning a specific make, model, or brand):

(The above requirements are indicative and may be revised after evaluation of the responses.)

Technical Specifications for 5 MHz Impedance Analyzer with Lock-In Amplifier

Parameter	Minimum Technical Specification Required
Instrument Type	Computer-controlled Precision 5 MHz Impedance Analyzer with Integrated Digital Lock-in Amplifier
Applications	Suitable for impedance spectroscopy, dielectric spectroscopy
Frequency Range	1 mHz to 5 MHz or better
Number of channels	2
Frequency Resolution	1 μ Hz or better
Sweep Modes	Linear, Logarithmic, User-defined frequency sweep
Number of Sweep Points	Minimum 65,000 points or higher
Impedance Measurement Range	1 m Ω to 1 T Ω or wider
Basic Impedance Accuracy	± 0.05 % or better
Phase Accuracy	$\pm 0.05^\circ$ or better



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

Measured Parameters	Z, Z'' Should be able to calculate Capacitance, Inductance, Resistance, Conductance, Susceptance, Dissipation Factor / Loss Tangent, Quality Factor Capacitance: 1 fF or lower Leakage current measurement facility with minimum 1 pA or better.
Lock-in Amplifier Frequency Range	DC to 5 MHz
Harmonic Detection	Up to 1023 harmonics or better
Lock-in Outputs	X, Y, R, θ simultaneously
Dynamic Reserve	≥ 120 dB
Time Constant	300 ns to 80 s or wider
Filter Slopes	Selectable from 6 to 48 dB/octave or better
Reference Source	Internal and External reference input
Excitation Voltage	0 to 2 Vrms or higher Minimum AC excitation voltage: 1 mVrms or lower
Voltage Resolution	1 mV or better
Excitation Modes	Constant Voltage and Constant Current
Current Measurement	Auto-ranging with high sensitivity



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

Built-in DC Bias	± 10 V or better with resolution of 1 mV or better
AC + DC Measurement	Simultaneous AC and DC bias measurements
Measurement Speed	≤ 20 ms per data point or faster
Averaging	Automatic and user-selectable averaging
Compensation Methods	Open, Short, Load, Open-Short-Load (OSL), Cable and Fixture Compensation
Test Fixture	Four-terminal pair (4TP) Kelvin fixture with shielded connections
Input/Output Connectors	BNC or equivalent high-quality shielded connectors
Communication Interfaces	USB, Gigabit Ethernet (LAN), Trigger I/O, Auxiliary Analog Inputs/Outputs
Operating Modes	Impedance Analyzer, LCR Meter, Frequency Response Analyzer (FRA), Lock-in Amplifier, Gain/Phase Analyzer
Display Software	Real-time graphical display with multiple windows
Plot Types	Bode, Nyquist, Cole-Cole, Smith Chart, Polar Plot, Time-domain waveform
Sweep Functions	Frequency sweep, Voltage sweep, DC bias sweep
Oscilloscope Function	Integrated digital oscilloscope



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

Spectrum Analyzer	Integrated FFT spectrum analyzer
Data Export Formats	CSV, TXT, Excel, MATLAB, Python, LabVIEW, Origin-compatible formats
Software Compatibility	Windows 10/11 (64-bit)
Programming Support	Python, MATLAB, LabVIEW, C/C++, .NET APIs
Remote Operation	Complete remote control through LAN/USB
Calibration	Factory calibrated with traceable calibration certificate
Power Supply	100–240 VAC, 50/60 Hz
Accessories	Kelvin test fixture, shielded cables, USB cable, LAN cable, power cord, software, user manual, calibration certificate
Software License	Perpetual license with free updates during warranty
Installation	Complete installation, commissioning, and demonstration at user site
Training	Minimum one-day onsite training by OEM/application engineer
Warranty	Minimum 03 years comprehensive onsite warranty
Service Support	Availability of local service support in India with application assistance
Compliance	CE/FCC certified and RoHS compliant



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

Preferred Equivalent Models	Equivalent or superior to Zurich Instruments MFIA 5 MHz Impedance Analyzer with integrated Lock-in Amplifier or equivalent research-grade system
Additional Desired Features (Optional but Preferred)	
Preferred Feature	Specification
Multifrequency Measurement	Simultaneous multifrequency impedance measurement
Temperature Interface	Compatibility with external temperature controllers/cryostats
External DC Source Control	Synchronization with external source meter or power supply
Digital I/O	Trigger synchronization with external instruments
Automation	Batch measurement and scripting support
Live Equivalent Circuit Fitting	Built-in equivalent circuit modeling and fitting software
Electrochemical Analysis	Native support for Electrochemical Impedance Spectroscopy (EIS) and equivalent circuit analysis
Data Analysis	Real-time fitting, peak analysis, and impedance modeling
Software Updates	Free software and firmware updates during warranty period
Future Upgrade	Provision for future hardware/software upgrades without replacing the main instrument



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

5. Eligibility Criteria

Interested firms should:

- Be an Original Equipment Manufacturer (OEM) or an authorized distributor/dealer.
- Have experience in supplying similar equipment.
- Have adequate installation and after-sales service support in India.

6. Information/Documents to be Submitted

The interested firms shall submit the following (*Annexure-I*):

1. Company Profile.
2. Details of the OEM.
3. Product Brochure/Catalogue.
4. Detailed Technical Specifications.
5. Compliance with the Broad Functional Requirements.
6. List of previous users/clients with installation reports
7. Details of Warranty.
8. Details of After-Sales Service Support.
9. Authorization Letter from OEM (where applicable).
10. Any additional technical information relevant to the offered equipment.

7. Pro forma Quotation

- Interested firms are requested to submit a Pro forma Quotation (*Annexure-II*) along with their Request For Technical Information and Pro Forma Quotations response. Indicative **Pro Forma** quotation in Indian Rupees (INR), including the cost of the equipment, essential accessories, taxes, duties, freight, insurance, installation, commissioning, training, and any other associated charges. Wherever applicable, the Annual Maintenance Contract (AMC) and/or Comprehensive Maintenance Contract (CMC) charges and spare parts shall be quoted separately as additional charges.
- Expected delivery schedule and other relevant technical and commercial information.

Important Note:

- The **Pro Forma** quotation is required only for cost estimation and budget planning purposes.
- The prices quoted shall be indicative/non-binding.
- The Pro Forma quotation shall not be treated as a financial bid.
- Submission of a **Pro Forma** quotation shall not confer any right or preference in the subsequent procurement process.

8. Presentation/Demonstration



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

The Institute may invite for a technical presentation or product demonstration. The date and venue shall be communicated separately.

9. Submission:

Interested firms may submit their Proforma Quotations on or before the due date in sealed cover or through email (as applicable).

The envelope/email should be superscribed as:

"Request For Technical Information and Pro forma Quotations for Procurement of 5 MHz Impedance Analyzer with Lock-In Amplifier"

8. Important Dates

Activity	Date
Publication	4 th August 2026
Last Date for Submission	12 th August 2026
Technical Presentation (if required)	To be informed
Clarification Meeting (if required)	To be informed

10. General Terms & Conditions

1. This **Request For Technical Information and Pro forma Quotations** is issued only for obtaining technical information and **Pro Forma** estimates.
2. The Institute reserves the right to accept or reject any or all responses without assigning any reason.
3. Submission of an **Request For Technical Information and Pro forma Quotations** does not create any contractual obligation.
4. The Institute may seek additional information, technical clarifications, demonstrations, or presentations from any participant.
5. The Institute may modify the technical requirements based on the responses received.
6. The final technical specifications may be prepared by the User Committee after evaluating all **Request For Technical Information and Pro forma Quotations** responses.
7. The subsequent procurement, if any, shall be carried out through an appropriate procurement method in accordance with the GFR 2017 and applicable procurement rules.
8. Participation in this **Request For Technical Information and Pro forma Quotations** does not automatically entitle any firm to participate in or receive any preference during the subsequent tender process.



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

11. Contact Details

Name: Dr. Lavi Tyagi

Designation: Assistant Professor

Department: Electrical Engineering

Email: lavityagi@iitj.ac.in



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

Annexure-I

Request For Technical Information and Pro forma Quotations Response Format

1. Name of the Firm:
2. Registered Address:
3. Name of OEM (if applicable):
4. Contact Person:
5. Email:
6. Phone:
7. Product Name and Model:
8. Brief Technical Description:
9. Compliance with Broad Functional Requirements:
10. List of previous users/clients with installation reports:
11. After-Sales Service Details:
12. Any Additional Features:
13. Remarks (if any).



Indian Institute of Technology Jodhpur

N.H. 62, Nagaur Road, Karwar, Jodhpur - 342030, Rajasthan (India)

☎ 0291-2801352 | ✉ office_ee@iitj.ac.in

Website Department: <https://iitj.ac.in/electrical-engineering/> | IITJ: www.iitj.ac.in

Annexure-II

Format for Pro forma Quotation

Sl. No.	Description	Amount (INR)
1	Indicative Pro forma quotation in Indian Rupees (INR), including the cost of the equipment, essential accessories, taxes, duties, freight, insurance, installation, commissioning, training, and any other associated charges.	

Warranty Period: _____

AMC/CMC Charges (after warranty): _____

Delivery Period: _____

Authorized Signatory

Name: _____

Designation: _____

Company Seal & Signature