

रजिस्ट्री पोस्ट द्वारा

फोन : 25086040 / 41, 25273351-54

फैक्स : (080) 25269611, 25270670, 25260862

E-mail : purchasek@nal.res.inसभी पत्राचार निदेशक, एनएएल के नाम पर
ही लिखे जाएं किसी अधिकारी के नाम पर नहीं।**राष्ट्रीय वांतरिक्ष प्रयोगशालाएँ**

कोडिहल्ली, एयर पोर्ट रोड, बेंगलूर-560 017, भारत

National Aerospace Laboratories

KODIHALLI, AIR PORT ROAD, BANGALORE - 560 017, INDIA

By Registered Post

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E-mail : purchasek@nal.res.inAll communications to be addressed to the
Director, NAL and not in the name of any officer**कोटेशन हेतु निवेदन / REQUEST FOR QUOTATION****INVITATION FOR BIDS/NIT****Tender No: CAD/PUR/2K21/089**

CSIR- National Aerospace Laboratories (NAL), Bengaluru, India is one of the premier laboratories under Council of Scientific and Industrial Research (CSIR), an autonomous body under Department of Scientific and Industrial Research, Government of India, New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organization. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

The Director, CSIR-NAL invites online quotation for procurement of the following item(s) for day to day research work.

Sl.No.	Description of Items	Unit	Qty
1	L-band transmitter with pre-mod Filter (1400-1600) MHz (Details as per Annexure)	Nos	02

Tender Type	Open Tender
Single / Double Bid	Single
Bid Security (EMD) (in INR)	Bid Securing Declaration Form to be submitted.
Performance Security	3% of the Purchase Order Value
Bid submission end date	21 st Feb 2022 1000Hrs
Bid opening date	22 nd Feb 2022 1100Hrs

01.Tender Documents May be downloaded from Central Public Procurement Portal <https://www.etenders.gov.in>. Aspiring Bidders who have not enrolled/ registered in e- procurement should enroll/ register before participating through the website <https://www.etenders.gov.in>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.

02.Tenderers can access tender documents on the website (For searching in the NIC site <https://www.etenders.gov.in>, kindly go to Tender Search option, select tender type and select ' Council of Scientific and Industrial Research' in organization tab and select 'NAL-Bengaluru-CSIR' in department type. Thereafter, Click on "Search" button to view all CSIR-NAL, Bengaluru tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://www.etenders.gov.in> as per the schedule given in the next page.

03.Either the Indian Agent on behalf of the Foreign principal or the Foreign principal can bid directly in a tender but not both. However, the offer of the Indian Agent should also accompany the authorization letter from their principal. To maintain sanctity of tendering system, one Indian Agent cannot represent two different foreign principals in one tender.

04.Unsolicited / conditional / unsigned tenders (Quotations) **shall not** be considered. Quotations received after the due date and time **shall be summarily rejected**.

05.The Bidder shall comply the terms and conditions of the tender, failing which; the offer shall be liable for rejection.



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06. Self-certification that the item offered meets the minimum local content in terms of percentage and shall give details of the location(s) at which the local value addition is made in case the bidder wishes to avail the benefits under the make in India policy. (if applicable)

07. The prospective bidders are requested to refer to the Standard Terms and Conditions available on NAL Website(www.nal.res.in) under the icon Tender- Purchase before formulating and submitting their bids.

08. The Bidders proposing to supply finished products directly/indirectly from vendors of countries sharing the land border with India should submit copy of registration done with the Ministry of Home Affairs and Ministry of External Affairs.

09. If the products supplied are not from vendors of countries sharing land border with India, the Bidders have to enclose a declaration to that effect.

The bids of those Bidders failing to comply with the clauses under para 8 & 9 will be summarily rejected.

10. The Director, CSIR- National Aerospace Laboratories, Bengaluru reserves the right to accept any or all the tenders either in part or in full or to split the order without assigning any reasons there for.

Stores and Purchase Officer
For and on behalf of CSIR - NAL



SCHEDULE CUM CRITICAL DATE SHEET

1	Name of Organization	CSIR-National Aerospace Laboratories, Bengaluru	
2	Tender Reference No	CAD/PUR/2K21/089	
3	Tender Type (Open/Limited/EOI/Auction/Single)	Open Tender	
4	Type/Form of Contract (Work / Supply / Auction / Service / Buy / Empanelment / Sell)	Supply	
5	No of Covers (One/Two/Three/Four)	One	
6	Tender Category (Services/Good/Works)	Good	
7	Allow Resubmission (Only in online mode within scheduled period)	Yes	
8	Allow Withdrawal (Only in online mode within scheduled period)	Yes	
9	Allow Offline Submission	No	
10	Work Item Title	L-band transmitter with pre-mod Filter(1400-1600)MHz	
11	Work Description	L-band transmitter with pre-mod Filter(1400-1600)MHz (Details as per Annexure)	
12	Delivery Schedule	60 days from the date of Purchase Order	
13	Product Category (Civil Works / Electrical Works / Fleet Management / Computer Systems)	R & D Equipment	
14	Is Multi Currency Allowed	No	
15	a) Tender Publishing Date -	31 Jan 2022	1800 Hrs
	b) Document download start Date:	31 Jan 2022	1800 Hrs
	c) Bid Submission Start Date	31 Jan 2022	1800 Hrs
	d) Bid Submission End Date-	21 Feb 2022	1000 Hrs
	e) Bid Opening Date-	22 Feb 2022	1100 Hrs
16	Bid Validity Days	90 days	
17	Address for communication	Stores and Purchase Officer CSIR-National Aerospace Laboratories, HAL Airport Road, Kodihalli, Bengaluru - 560017	
18	Inviting Officer	The Director, CSIR-NAL	
19	Contact No	080 2508 6097, 2508 6710	
20	E-mail Address	purchaseccadd@nal.res.in	
21	Detailed specification of item	Invitation for bids / NIT	
22	Tender Terms & Conditions & Instruction for online bid submission	The prospective bidders are requested to refer to the Standard Terms & conditions available on NAL website (www.nal.res.in) under the icon Tender-Purchase before formulating and submitting their bids.	

Annexure -I

Transmitter Specifications

Electrical characteristics:

Specification	Description
Frequency	≤ 1435 to ≥ 1540 MHz Tunable ;
Step size	100 kHz
Programming	Hand held programming module/ through Laptop
Frequency stability	0.003% or better
Power	10 W (Continuous) fixed
Output Impedance	50 Ohm nominal
VSWR	$\leq 1.5:1$
Harmonics, spurious	$< -50\text{dBc}$
Spectral occupancy	As per IRIG-106 PSD Mask
Modulation type	User selectable analog modulation (True FM)/PCM-FM/SOQPSK with in-built pre-modulation filter for digital modulations as per IRIG 106 norms. Appropriate Pre-mod filter should be selected automatically based on data rate entry by the user.
RF open/short circuit protection	Required
Analog Mod input impedance	50/75 Ohm or $1\text{k}\Omega$ selectable and AC/DC programmable
Analog Input Bandwidth	10 MHz
Analog frequency response	1 kHz to 10 MHz (for AC coupling) and DC to 10 MHz (for DC coupling)
Analog input level	0.25, 0.5, 1, 2, 5, 10Vpp programmable
Clock and Data bit rate range for PCM/FM and SOQPSK Mod	Up to 20 Mbps(RS 422) Electrical interface
Deviation sensitivity	0.5, 1, 2, 5MHz per volt programmable or deviation adjust resistor trimmer
Deviation linearity	2% max
Modulation distortion	$\leq 2\%$
Connectors	SMA (F) for RF output; SMA (M)/ standard D-type connector for modulation input; MIL-Grade circular connector/ D-type connector for power supply
Cooling/ Heat dissipation	A compatible heat sink with proper mounting arrangement / fan cooled arrangement to be

	provided.
Weight	Should not exceed 2 ±1Kg
Mechanical Installation	It is desirable that there should be no restriction on mounting axis. It should be mountable on any axis. All the mounting accessories should be studied and provided.

Power supply

Specification	Description
Input Power supply	The equipment should operate as per MIL STD-704 D from 18V to 32V DC (Reverse polarity protected)
Current Consumption	3 A max

Environment Specification

Operating Temperature	-20 deg.C to +70 deg.C or Better
Altitude	-1000 to 35,000 feet
Humidity	90 % and above condensing
Vibration	6g RMS random, 20 Hz to 20KHz
Acceleration	linear acceleration 6g min in all 3axes
Shock	Half sine, 18g pk, 11 ms, 3 axes
EMI/EMC	As per MIL-STD-461
Non Combustibility	The equipment should not promote, sustain or support combustion.

Terms and Conditions:

- 1 year warranty should be provided
- COC has to provided.
- Factory acceptance test documents to be shared.
- Mounting screws/bracket along with the spare connectors (2sets) needs to be provided.
- Post warranty, the bidder should provide technical support for minimum five years for service and repair. The bidder has to manage the obsolescence of the components installed inside the transmitter for the said period.
- Training to be given at CSIR-NAL premises, to 5 persons for 4 days.