



**NATIONAL INSTITUTE OF ELECTRONICS**  
**Ministry of Science & Technology**  
**Government of Pakistan**  
**17, H-9, Islamabad**



**Tel: 051-9265009-13 (Ext: 217)**

**Fax: 051-9265027**

**TENDER NO. 04/2019-NIE**  
**MISC. EQUIPMENT, PARTS AND ACCESSORIES FOR DEVELOPMENT OF**  
**FREQUENCY MODULATED CONTINUOUS WAVE (FMCW) RADAR-**  
**COMMUNICATION LAB**

<b>S. #</b>	<b>Name of Item</b>	<b>Make</b>	<b>Qty</b>	<b>Unit Price</b>	<b>Total Price</b>
1	<b>Power Divider with following specifications:</b>  <b><u>Specifications:</u></b> <ul style="list-style-type: none"><li>• Can cover 8-13 GHz</li><li>• Low Insertion Loss</li><li>• High Isolation</li></ul>	Any Reputed Firm	<b>04</b>		
2	<b>Antenna with following specifications:</b>  <b><u>Specifications:</u></b> <ul style="list-style-type: none"><li>• Can cover 8-13 GHz</li><li>• Low VSWR</li><li>• Minimum gain of 12dBi at given in X band</li></ul>	Any Reputed Firm	<b>02</b>		
3	<b>VCO with following specifications</b>  <b><u>Specifications:</u></b> <ul style="list-style-type: none"><li>• 8-16 GHz</li><li>• -92 dBc @ 100 KHz</li><li>• +6 dBm Output Power</li><li>• Complete evaluation board</li><li>• Part No. HMC 6380 (Evaluation kit)/ equivalent</li></ul>	Analog Devices/ equivalent	<b>01</b>		
4	<b>VCO with following specifications:</b>  <b><u>Specifications:</u></b> <ul style="list-style-type: none"><li>• 8-16 GHz</li><li>• -92 dBc @ 100 KHz</li><li>• +6 dBm Output Power</li><li>• IC form</li><li>• Part No. HMC 6380 (IC)/equivalent</li></ul>	Analog Devices/ equivalent	<b>02</b>		
5	<b>Low Noise Amplifier with following specifications:</b>  <b><u>Specifications:</u></b> <ul style="list-style-type: none"><li>• 6-17 GHz</li><li>• 1.7 dB N.F</li><li>• 18.5 dB Gain</li><li>• Complete Evaluation Board</li><li>• Part No. HMC903lp3e (evaluation kit)/ equivalent</li></ul>	Analog Devices/ equivalent	<b>01</b>		

6	<p><b>Low Noise Amplifier with following specifications</b></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• 6-17 GHz</li> <li>• 1.7 dB N.F</li> <li>• 18.5 dB Gain</li> <li>• IC form</li> <li>• Part No. HMC903lp3e (IC)/ equivalent</li> </ul>	Analog Devices/ equivalent	02		
7	<p><b>Variable Gain Amplifier with following specifications:</b></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• 6-17 GHz</li> <li>• 0 to -2V Control Voltage</li> <li>• 22 dB Gain Control range</li> <li>• IC form</li> <li>• Part No. HMC694 (IC)/ equivalent</li> </ul>	Analog Devices/ equivalent	02		
8	<p><b>Variable Gain Amplifier with following specifications:</b></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• 6-17 GHz</li> <li>• 0 to -2V Control Voltage</li> <li>• 22 dB Gain Control range</li> <li>• Evaluation board</li> <li>• Part No. HMC694 (Evaluation board)/ equivalent</li> </ul>	Analog Devices/ equivalent	01		
9	<p><b>IF Amplifier with following specifications:</b></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Voltage Noise: 2.4nV/<math>\sqrt{\text{Hz}}</math> (max) @ 1KHz</li> <li>• Current Noise: 1.2pA/<math>\sqrt{\text{Hz}}</math> (max) @ 1KHz</li> <li>• 28 MHz Bandwidth</li> <li>• Input Bias Current 80nA</li> <li>• Large Signal Gain 120 dB</li> <li>• Evaluation kit</li> <li>• Part No. MAX 414 (Evaluation kit)/ equivalent</li> </ul>	Maxim/ equivalent	02		
10	<p><b>IF Amplifier with following specifications:</b></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Voltage Noise: 2.4nV/<math>\sqrt{\text{Hz}}</math> (max) @ 1KHz</li> <li>• Current Noise: 1.2pA/<math>\sqrt{\text{Hz}}</math> (max) @ 1KHz</li> <li>• 28 MHz Bandwidth</li> <li>• Input Bias Current 80nA</li> <li>• Large Signal Gain 120 dB</li> <li>• IC form</li> <li>• Part No. MAX 414 (IC)/ equivalent</li> </ul>	Maxim/ equivalent	02		

11	<b>Mixer with following specifications:</b> <u>Specifications:</u> <ul style="list-style-type: none"> <li>• Covering 8-13 GHz RF and LO</li> <li>• DC to 5 GHz IF</li> <li>• Double Balanced mixer</li> <li>• LO drive +13 dBm</li> <li>• Conversion Loss 8 dB</li> <li>• Chip form</li> <li>• Part No. HMC553 (chip)/ equivalent</li> </ul>	Analog Devices / equivalent	02		
12	<b>Mixer with following specifications:</b> <u>Specifications:</u> <ul style="list-style-type: none"> <li>• Covering 8-13 GHz RF and LO</li> <li>• DC to 5 GHz IF</li> <li>• Double Balanced mixer</li> <li>• Low drive +13 dBm</li> <li>• Conversion Loss 8 dB</li> <li>• Evaluation board</li> <li>• Part No. HMC553 (Evaluation board)/ equivalent</li> </ul>	Analog Devices / equivalent	01		
13	<b>Inductor with following specifications:</b> <u>Specifications:</u> <ul style="list-style-type: none"> <li>• Close to 0.26 mH</li> <li>• SMT 0402 package</li> </ul>	Any Reputed Firm	4		
14	<b>Capacitor with following specifications:</b> <u>Specifications:</u> <ul style="list-style-type: none"> <li>• Close to 112.6 nF</li> <li>• SMT 0402 package</li> </ul>	Any Reputed Firm	8		
15	<b>Capacitor with following specifications:</b> <u>Specifications:</u> <ul style="list-style-type: none"> <li>• Close to 178.4 nF</li> <li>• SMT 0402 package</li> </ul>	Any Reputed Firm	8		
16	<b>Capacitor with following specifications:</b> <u>Specifications:</u> <ul style="list-style-type: none"> <li>• 0.1 uf</li> <li>• SMT 0402 package</li> </ul>	Any Reputed Firm	10		
17	<b>Resistor with following specifications:</b> <u>Specifications:</u> <ul style="list-style-type: none"> <li>• 100 <math>\Omega</math></li> <li>• SMT 0402 package</li> </ul>	Any Reputed Firm	10		
18	<b>Resistor with following specifications:</b> <u>Specifications:</u> <ul style="list-style-type: none"> <li>• 100K<math>\Omega</math></li> <li>• SMT 0402 package</li> </ul>	Any Reputed Firm	10		
19	<b>3.5mm audio jack for Audio Card Input</b>	Any Reputed Firm	02		
20	<b>Connector 50 Ohm Sma</b>	Any Reputed Firm	20		

21	<b>PIC Controller PIC 16F877a</b>	Any Reputed Firm	<b>02</b>		
22	<b>Crystal Oscillator 16 MHz for PIC</b>	Any Reputed Firm	<b>02</b>		
23	<b>Capacitor with following specifications:</b> <b><u>Specifications:</u></b> • 100 pf • SMT 0402 package	Any Reputed Firm	<b>25</b>		
24	<b>Capacitor with following specifications:</b> <b><u>Specifications:</u></b> • 0.01 uf • SMT 0402 package	Any Reputed Firm	<b>10</b>		
25	<b>Capacitor with following specifications:</b> <b><u>Specifications:</u></b> • 4.7 uf • Tantulum 0402 package	Any Reputed Firm	<b>14</b>		
26	<b>Capacitor with following specifications:</b> <b><u>Specifications:</u></b> • 1 uf • SMT 0402 package	Any Reputed Firm	<b>20</b>		
27	<b>Capacitor with following specifications:</b> <b><u>Specifications:</u></b> • 2.2 uf • SMT 0402 package	Any Reputed Firm	<b>20</b>		
28	<b>Capacitor 22pF</b>	Any Reputed Firm	<b>04</b>		
29	<b>Resistor 10k Ohm</b>	Any Reputed Firm	<b>04</b>		



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**TERM & CONDITIONS:**

1. Price to be quoted in Pak Rupees on (FOR) free home delivery basis.
2. As the equipment/ items to be procured are based on high tech technology therefore for competitive bidding single stage-two envelopes bidding procedure shall be adopted.
  - (i). the bid shall be comprised a single package containing two separate envelopes, containing separately **“TECHNICAL PROPOSAL”** and **“FINANCIAL PROPOSAL”**.
  - (ii). the envelope shall be marked as **“TECHNICAL PROPOSAL”** and **“FINANCIAL PROPOSAL”** in the **bold, properly sealed and with legible letters** to avoid any confusion.
  - (iii). initially the envelope marked with **“TECHNICAL PROPOSAL”** shall be opened.
  - (iv). the envelope marked with **“FINANCIAL PROPOSAL”** shall be retained in the custody of NIE without being opened.
  - (v). upon evaluation of technical proposals, NIE shall publically open the financial proposal of the technically accepted bids only. The financial proposal of the bids found technically rejected shall be returned un-opened to the respective firms.
3. The bids of the firm operating from their residential address and P.O. Box number will not be considered.
4. Tender number must be specified on the left corner of the bidding envelope.
5. The rates should be valid for at least **“90”** days from the date of tender opening.
6. The offered equipment/ items must be brand new of the original manufacturer and covered under normal warranty/guarantee with necessary back-up support.
7. The bid must be supported with necessary catalogue/ brochure indicating make, model detailed specification and country of origin of the offered equipment.
8. The scope of supplies includes supply of equipment, installation, testing and commissioning of equipment and if necessary training to NIE Personnel's.

9. The financial bid should reflect at sight the following costs separately for fair comparison purpose.
  - i. Unit Price of equipment.
  - ii. GST, if applicable.
10. Conditional/ ambiguous bids will not be entertained.
11. Earnest money @ 2% of quoted prices (Refundable) must be accompanied with tender in shape of a crossed bank draft/ pay order in favour of the Director General NIE.
12. E/M of the successful bidder will be refunded upon submission of prescribe performance/ bank guarantee to NIE and the same shall be released after satisfactory completion of warranty/ guarantee period of the supplied goods.
13. The successful bidder shall provide 5% performance/ bank Guarantee of the total order value of the order to NIE for satisfactory execution of the supply order.
14. The bid found to be lowest evaluated bid shall be accepted only either overall whole tender/items base or each item wise.
15. The estimated delivery/ completion period of supplies/ work must be specified in the quotation.
16. In case of any delay in supplies of ordered items, the successful bidder shall bound to inform NIE to prior to "15" days of the ending of last date of delivery, so that necessary approval regarding extension in delivery period may be obtained from Director General NIE otherwise at the time of payment to firm a penalty @ 2% per month of the total order value will be charged from the successful bidder without any notice.
17. Tender of all items may be awarded either to a single party or can be divided among different parties depending upon their professional capabilities and competitiveness in prices individually.
- 18. No advance payment will be made.**
19. NTN and GST number must be mentioned on the quotation along with providing copy of its documentary evidence, failing which bid will not be considered.
20. Payment will be made on submission of the prescribed bill in duplicate through crossed cheque OR through Inland L/C after satisfactory completion of supply order and our acceptance thereof, which includes installation, testing, commissioning of the equipment and training etc. The bill presented on the letterhead of the firm will not be accepted for payment purpose.
21. As per Government Policy payment to the firm is subject to the registration of firm name in **Active Tax Payer List of FBR**, otherwise payment will be stopped till the appearance of vendor name in ATL of FBR.
22. Income Tax/ Sales Tax etc. will be deducted from bill as per Govt. Rules.

23. Last date for receipt of the tender in the Procurement Section of NIE is **February 13, 2019 up to 11:00 hours**. Technical proposals of the received firms shall be opened on the same day at **11:30 hours** in the presence of those who wish to be present. Tenders received late will not be considered in any case.
24. The Director General NIE reserves the right to accept or reject any or all tenders in part or whole, or change the quantity of tendered items as per provision of PPRA Rules.

**SUHAIL AHMED SHAMI**  
**Dy. Director Procurement**  
**NIE, Islamabad**  
**Ph: 051-9265009-13 (Ext: 131)**