



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



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

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TENDER NO. 04/2022-23/NIE
MISC. PARTS, COMPONENTS AND ACCESSORIES FOR DESIGN AND DEVELOPMENT
OF MULTI-PURPOSE FMCW RADAR TRANSCEIVER”

S. #	Name of item	Qty	Unit Price	Total Price
1	Voltage Control Oscillator (VCO) with following detail/ specifications:- Make: Mini Circuits/equivalent Part # ROS-3050-819+ (IC)/equivalent <u>Specifications:</u> <ul style="list-style-type: none">• 2.15-3.05 GHz• -115 dBc @ 100 KHz• +7 dBm Output Power	02		
2	Low Noise Amplifier with following detail/ specifications:- Make: Mini Circuits/equivalent Part # PGA-105+ (IC)/ equivalent <u>Specifications:</u> <ul style="list-style-type: none">• 0.04-2.6 GHz• 1.9 dB N.F• 15 dB Gain	08		
3	RF Amplifier with following detail/ specifications:- Make: Mini Circuits/equivalent Part # PHA-202+ (IC)/ equivalent <u>Specifications:</u> <ul style="list-style-type: none">• 6-17 GHz• 46.1 dBm IP3	02		
4	Frequency Mixer with following detail/ specifications:- Make: Mini Circuits/equivalent Part # MCA1-42MH+ (IC)/ equivalent <u>Specifications:</u> <ul style="list-style-type: none">• Covering 1-4.2 GHz RF and LO• DC to 1.5 GHz IF• LO drive +13 dBm• Conversion Loss 6.2 dB	02		

5	Power Divider with following detail/ specifications:- Make: Mini Circuits /equivalent Part # BP2U+ / equivalent <u>Specifications:</u> <ul style="list-style-type: none"> • 2.1-2.5 GHz • 0.5 dB insertion loss 	03		
6	RF Attenuator with following detail/ specifications:- Make: Mini Circuits /equivalent Part # PAT3+ / equivalent <u>Specifications:</u> <ul style="list-style-type: none"> • DC-7GHz • 3 dB attenuation 	08		
7	SMA Connectors Female with following detail/ specifications:- Make: Local/Imported Part # Any <u>Specifications</u> <ul style="list-style-type: none"> • 1-18 GHz • PCB mount 	30		
8	Band Pass Filter with following detail/ specifications:- Make: Imported Part # SiMF2R5/1-9D2/equivalent <u>Specifications</u> <ul style="list-style-type: none"> • 2.2-2.4 GHz • Low Insertion Loss 	02		
9	Low Pass Filter with following detail/ specifications:- Make: Mini Circuits /equivalent Part # SXLP-3+ / equivalent <u>Specifications</u> <ul style="list-style-type: none"> • DC-3 MHz 	03		
10	Substrate with following detail/ specifications:- Make: Rogers / equivalent Part # RO4350B / equivalent <u>Specifications</u> <ul style="list-style-type: none"> • Thickness 40mils • $\epsilon_r = 3.48$ • Minimum 80x60 mm 	01		

11	<p>Voltage Control Oscillator (VCO) with following detail/ specifications:-</p> <p>Make: Analog Devices /equivalent Model: HMC733(IC)/equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 10-20 GHz • -90 dBc @ 100 KHz • +3 dBm Output Power 	02		
12	<p>Low Noise Amplifier with following detail/ specifications:-</p> <p>Make: METDA Semiconductors /equivalent Part # BW268(IC)/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 8-12 GHz • 1 dB N.F • 20 dB Gain 	02		
13	<p>Low Noise Amplifier with following detail/ specifications:-</p> <p>Make: METDA Semiconductors/equivalent Part # NC10191C-812 (IC)/ equivalent</p> <p><u>Specifications</u></p> <ul style="list-style-type: none"> • 8-12 GHz • 1.7 dB N.F • 15.5 dB Gain 	02		
14	<p>Driver Amplifier with following detail/ specifications:-</p> <p>Make: METDA Semiconductors /equivalent Part # BW1752(IC)/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 6-13 GHz • 19.5 dB Gain • +20 dBm P1dB 	02		
15	<p>Power Amplifier with following detail/ specifications:-</p> <p>Make: Analog Devices /equivalent Part # HMC907A(IC)/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 0.2-22 GHz <p>+28 dBm P1dB</p>	02		
16	<p>Frequency Mixer with following detail/ specifications:-</p> <p>Make: Analog Devices /equivalent Part # HMC553ALC3B(IC)/ equivalent</p>	02		

	<p><u>Specifications:</u></p> <ul style="list-style-type: none"> • Covering 8-13 GHz RF and LO • DC to 5 GHz IF • Double Balanced mixer • LO drive +13 dBm • Conversion Loss 8 dB 			
17	<p>Power Divider with following detail/ specifications:-</p> <p>Make: METDA Semiconductors /equivalent Part # BW1608/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 8-12 GHz • Insertion Loss 0.4 dB • Return Loss 15 dB 	02		
18	<p>Limiter with following detail/ specifications:-</p> <p>Make: METDA Semiconductors /equivalent Part # BW481/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 0.1-18 GHz • Insertion Loss 0.3 dB • Limiting Level +16dBm 	02		
19	<p>Band Pass Filter with following detail/ specifications:-</p> <p>Make: Imported Part # SiMF10R55/3R9-8D2/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 10-10.25 GHz • Low Insertion Loss 	02		
20	<p>IF Amplifier with following detail/ specifications:-</p> <p>Make: Mini Circuits /equivalent Part # GALI-39+/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • DC-7 GHz • Output power 10.5dBm 	03		
21	<p>Attenuators with following detail/ specifications:-</p> <p>Make: Sainty-Tech Communications/ equivalent Part # BW-101/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 0.1-40 GHz • Attenuation 1 dB 	01		

22	<p>Attenuators with following detail/ specifications:-</p> <p>Make: Sainty-Tech Communications/ equivalent Part # BW-102/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 0.1-40 GHz • Attenuation 2 dB 	01		
23	<p>Attenuators with following detail/ specifications:-</p> <p>Make: Sainty-Tech Communications/ equivalent Part # BW-105/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • 0.1-40 GHz • Attenuation 6 dB 	01		
24	<p>Substrate with following detail/ specifications:-</p> <p>Make: Rogers/ equivalent Part # RO5880/ equivalent</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • Thickness 0.5mm • $\epsilon_r = 2.2$ • Total Size: 80 x 60 mm 	01		
25	<p>Aluminium Cavity with following detail/ specifications:-</p> <p>Make: Local/Imported Part # Any</p> <p><u>Specifications:</u></p> <ul style="list-style-type: none"> • CNC Milled • Minimum 80 x 60 mm 	01		



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TERM & CONDITIONS:

1. **Price to be quoted in Pak Rupees on (FOR) free home delivery basis.**
2. The bid must be supported with necessary catalogue/ brochure indicating make, model detailed specification.
3. **The components are interdependent on each other therefore part supply is not acceptable.**
4. The bid should reflect at sight the following costs separately for fair comparison purpose.
 - i. Unit Price of equipment.
 - ii. GST, if applicable.
5. Conditional/ ambiguous bids will not be entertained.
6. **Earnest money @ 2% of quoted prices (Refundable) must accompany the tender in shape of a crossed bank draft/ pay order in favour of the Director General NIE. Earnest Money of the successful bidder will be refunded after satisfactory completion of supply order.**
7. The bids of the firm operating from P.O. Box number will not be considered.
8. Tender number must be specified on the left corner of the tender envelope.
9. The rates should be valid for at least “90” days from the tender opening date.
10. The offered equipment/ items/ parts must be brand new of the original manufacturer and covered under normal warranty/guarantee.
11. The estimated delivery date must be specified in the quotation.
12. In case of late delivery, a penalty @ 2% per month of the total order value will be charged from the successful bidder without any notice.
13. The bid found to be lowest evaluated bid shall be accepted on the basis of cost comparison, tender specifications and fulfilling the requirement of the end-user.
14. Tender of all works 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.
15. The earnest money of the rejected firms shall be returned in due course of time.
16. **Quantity of the order items can be increased or decreased.**

17. NIE, if required may ask the successful bidder to provide 5% Bank Guarantee for satisfactory execution of the supply order.
18. **No advance payment is allowed.**
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 after satisfactory completion of supply order and our acceptance thereof. 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 **May 02, 2023 up to 11:00 hours**. Tenders will 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.

Gul Hayat Khan
Dy. Director Procurement
NIE, Islamabad
Ph: 051-9265009 (Ext: 217)