

# TENDER DOCUMENTS

# **Computer Lab Equipment**

# NUTECH / SCM /Computer Lab Eqpt II - PSDP 2021 / TD-188

# NATIONAL UNIVERSITY OF TECHNOLOGY

### TENDER NOTICE

## National University of Technology (NUTECH)

### NUTECH / SCM / RFID Solutions - PSDP 2021 / TD-187,

### NUTECH / SCM / Electrical Lab Eqpt - PSDP 2021 / TD-183,

### NUTECH / SCM / Civil Lab Eqpt - PSDP 2021 / TD-184 &

### NUTECH / SCM /Computer Lab Eqpt II - PSDP 2021 / TD-188

1. Sealed bids are invited from Government / FBR Registered Firms for the procurement of Lab Equipment for NUTECH on **FOR Basis**.

2. Tender documents containing terms, conditions and detailed specifications of items (including draft contract) can be downloaded from NUTECH website "<u>https://nutech.edu.pk/downloads/procurement/scm-tenders/</u> w.e.f **05 January 2021.** 

3. Quotations shall be submitted as per requirement of the tender documents.

4. Bidders will be required to submit **Bank Draft / CDR** equal to **5%** of quoted value as Bid Bond in favor of National University of Technology (NUTECH).

5. <u>Submit Rs 1500/- as Tender fee in favor of NUTECH NBP Account Main Branch, Civic</u> <u>Center G-6, Islamabad (Development Project Security A/c No. 0341-00316702674-7).</u> Please <u>attach bank receipt with technical offer. Offers will not be entertained without payment of</u> <u>processing fee.</u>

6.	Details for Submission & Opening of bids for tender are as under:-

Ser	Description	Submission	Tender Opening	Completion Days
a.	RFID Solutions - PSDP 2021 / TD-187	1130 hrs on 22 Jan 2021	1200 hrs on 22 Jan 2021	90 Days
b.	Electrical Lab Eqpt- PSDP 2021 / TD-183	1030 hrs on 25 Jan 2021	1100 hrs on 25 Jan 2021	120 Days
C.	Civil Lab Eqpt- PSDP 2021 / TD-184	1130 hrs on 25 Jan 2021	1200 hrs on 25 Jan 2021	120 Days
d.	Computer Lab Eqpt II - PSDP 2021 / TD-188	1230 hrs on 25 Jan 2021	1300 hrs on 25 Jan 2021	90 Days

# Deputy Director (Supply Chain Management) NATIONAL UNIVERSITY OF TECHNOLOGY, UPROAD, 1-12, ISLAMABAD Tel: 0092-51-5476768, Ext: 227

## NATIONAL UNIVERSITY OF TECHNOLOGY SUPPLY CHAIN MANAGEMENT

#### **INVITATION TO TENDER**

#### Tender submission time: 1230 hours, 25 January 2021

 NUTECH desires to procure the list of item(s) / Store(s) on <u>FOR Basis</u> as per Annexure-A. Interested bidders are requested to send their bids through courier or deliver at NUTECH under "<u>Single Stage – Two Envelopes</u>" (two envelopes placed together in third envelope), marked clearly as "Technical <u>Offer</u>" and "Commercial <u>Offer</u>" respectively to the undersigned, latest by or before above mentioned due date.

2 <u>**Conditions Governing Contracts.</u>** The contract made as result of this IT will be in accordance with the draft contract published on NUTECH University website and other special conditions (Mentioned in this document) that may be added to given contract for the supply of Lab Equipment.</u>

- 3. **Delivery of Tender.** The offer is to be submitted as under:-
  - a. <u>Technical Offer.</u> Technical Offer should contain only Annexure-A, Annexure-A-1 & Annexure B duly filled in (supported with relevant technical literature / details / catalogues etc) and receipt of tender processing fee. Copy of bid bond WITHOUT MENTIONING PRICE should be attached with technical offer. Only relevant technical details

i.e literature/brochures) without mentioning the financial aspect of the offer should be enclosed in an envelope. In technical proposal, all items must have the brand names, model number, manufacturer's name, country of origin, manufacturer's warranty including parts with complete specs and brochures. Re-conditioned and re-furbished equipment shall not be acceptable. Following information will be clearly marked on the envelope:

- (1) Technical Offer
- (2) Original Performa Invoice (without price)
- (3) Tender number
- (4) Date/ time of opening
- b. <u>Commercial Offer.</u> Commercial Offer will contain Annexure-C and bid bond (Dully mentioned and placed in separate envelope. The offer indicating the quoted price FE/Local Currency (in Local Currency for FOR

cases & in FE for FOB cases) in figures as well as in words would be enclosed in an envelope. Following information will be clearly marked on the envelope;

- (1) Commercial Offer
- (2) Original Performa invoice with price
- (3) Tender number
- c. Both the envelopes i.e. commercial offer and technical offer would be enclosed in yet another properly sealed envelope that will be marked with address of this office only. There should be clear indication that this envelope contains tender documents.
- d. The tender duly sealed will be addressed to the following:-

Deputy Director (Supply Chain Management Office) NATIONAL UNIVERSITY OF TECHNOLOGY (NUTECH) IJ P ROAD, H12, ISLAMABAD Tel: 0092-51-5476768, Ext: 227

4. **Date and Time for Receipt of Tender.** Sealed bids with detailed specifications should reach SCM office latest by **1230 hours on 25 January 2021.** Delay occurring in post shall not be accepted. Tenders received after the appointed / fixed time will NOT be entertained. The appointed time will, however, fall on next working day in case of closed / forced holiday.

5. <u>Tender opening.</u> The offers shall be opened **30 minutes** after submission time. Commercial offers will be opened at later stage if Technical Offer is found acceptable on examination by technical authorities. Date and time for opening of commercial offer shall intimate later. Only legitimate / registered representatives of firm will be allowed to attend tender opening.

<u>Validity of Offer.</u> The validity period of quotations must be indicated and should be
 90 days from the date of opening of financial offer.

7. <u>Withdrawal of offer</u> If the firm withdraws its offer within validity period the competent authority may place such firm under <u>embargo for a period</u>, which may be <u>extended up to one year</u>. Moreover, the Earnest Money of the firm will be confiscated.

8. **Documents.** Following information / copy of documents must be provided / attached with offer:-

- a. A copy of letter showing firm's financial capability.
- b. NTN/GST number be mentioned on the offer and copy of registration Certificate issued by Sales Tax Department, attached.
- c. Foreign supplier to provide its Registration Number issued by respective Department of Commerce authorizing export of subject stores (in FOB cases).
- d. Annexes A, A-1, B and C and special conditions must be signed and stamped. ATTACH ONLY RELEVANT DOCUMENTS.
- e. Complete all Annexes as per given format. Do not use your format or letter head. Offer may be rejected if given format is not followed.
- f. OEM/principal agency agreement must be provided.

### 9. **Disqualification.** Offers are liable to be rejected if:-

- a. Validity of offer is not quoted as required in IT documents.
- b. Any deviation from the General/ Special / Technical Instructions.
- c. Offers are found conditional or incomplete in any respect.
- Copy of EM/Bid Bond & Tender processing fee (with tech offer) and original
   EM/Bid Bond (with fin offer) are NOT attached.
- e. Manufacturer's relevant brochures and technical details on major equipment assemblies are not attached in support of specifications.
- f. Offer received later than appointed / fixed date and time.
- g. Subject to restriction of export license.
- h. Offers (Commercial / technical) containing non-initialed / unauthenticated amendments / corrections / overwriting. If the validity of the agency agreement has expired. The commercial offer against FOB / CIF / C&F tender quoted in local currency.
- i. If the offer is found to be based on cartel action in connivance with other sources/participants of the tender.

10. **Earnest Money / Bid Bond.** Commercial Offer must be accompanied with a Bid Bond (CDR/Pay Order/Bank Draft) in agreement of faithful compliance of the conditions of Contract. This amount will be equivalent to 5% of the total quoted value. The Bid Bond amount submitted by the successful bidder will however be refunded on effective termination of Contract. (The Bid Bond will be forfeited in case of default by the bidder from his commitments made through his offer). Submission of Bid Bond is mandatory; otherwise

your offer will be rejected. Bid Bond will be used as performance guarantee till the delivery of stores, otherwise separate performance guarantee valued at 5 % of contract will be submitted by successful firm till stores are delivered and inspected.

#### 11. Return of Earnest Money/Bid Bond.

- a. Bid Bond to the unsuccessful bidders will be returned on finalization of the lowest evaluated bidder.
- Bid Bond of the successful bidder/bidders will be returned on submission of Bank Guarantee/Bid bond against warranty period OR Bid bond retained for the warranty period as the case may be.

#### 12 Terms of Payment/ LC Charges

#### (In FOB cases)

a. All categories payment will be made through letter of credit (LC). LC opening charges in Pakistan are to be borne by NUTECH. Payment will be made through irrevocable LC in favour of Manufacturer.

#### In FOR cases

- b. 20% advance payment will be made to the Seller on provision of unconditional Bank Guarantee/ CDR/ DD/ Pay order. Advance BG/CDR/DD/Pay order will be submitted at the time of signing the contract.
- c. 80% payment will made to the Seller after receipt and confirming the correctness of ordered specifications, installation, commissioning OR as the case may be i.e through Inland LC.

## 13. Warranty/ Bank Guarantee (BG). 1 Year against 5% Bank Guarantee/CDR/Pay

**Order/Bank Draft** of the store value will be required from the successful bidders from the date of commissioning as performance bond. BG submitted shall remain valid for up to 60 days beyond completion of warranty period.

14. <u>Taxes/ Duties/ Custom clearance</u> All taxes /duties /import Licenses Fee as applicable under government laws in Pakistan as well as country of supplier shall be on Seller (in FOR Case). NUTECH will provide applicable exemption certificates and documents (In FOB Cases only).

15. <u>Insurance: -</u> Insurance will be NUTECH's responsibility through NICL (in FOB Cases).

16. <u>Freight charges /Misc charges:</u> All charges such as packing, forwarding, local freight, loading and unloading, installation and commissioning, custom clearance, orientations, on job training or any other will be part of quoted price. Delivery till NUTECH will be seller's responsibility and all associated costs will be part of quotation as well.

17. **Delivery Schedule.** Store will be delivered within **90 days** from contract signing date.

18. **Force Majeure.** If non-compliance with the period of delivery or services can be proved to be due to Force Majeure, such as but not limited to mobilization, war, riot, strike, lockout, pandemics/epidemics or the occurrence of unforeseen events, the period shall be reasonably extended.

19. **Subletting** Suppliers are not allowed to sublet wholly or part of the contract to any other firm /company without prior permission by NUTECH. Firm found in breach of the clause will be dealt with as per purchaser's right and discretion.

### 20. Arbitration. Will be as under:-

"All Claims ,disputes ,controversies, differences arising out of or in connection with this contract ,including any question regarding its existence, validity, interpretation performance, breach or termination ,shall be referred to and shall finally be solved by binding arbitration. An Arbitration Committee Shall be constituted comprising Rector NUTECH and two Arbitration to be nominated on mutual agreement by each party. The venue of the Arbitration shall be the place of issuance of this contract or as Rector NUTECH may determine. In case of any difference, the clauses of Arbitration Act 1940, Rules and Regulation made thereof for time being enforce shall prevail. The award shall be final and binding on both parties.

- a. Provided that written record of any such arbitration and its award shall be arranged properly. An award of such arbitration may be confirmed in a court of competent jurisdiction at Islamabad.
- b. Provided further that incase of any other question /dispute not covered under this clause, the decision of Rector NUTECH shall be final."

21. **<u>Redress Of Grievance.</u>** In case of dispute, case shall be reviewed by 'NUTECH Redress of grievance committee and decision of NUTECH shall be final and binding on both parties.

22 Export License/Permit /End User Cert. It shall be the responsibility of the

Supplier to obtain from the Government concerned all permits and export licenses, etc required to enable each consignment to be shipped immediately as per the delivery schedule. In case the supplier fails to arrange export license within 30 days of signing the contract the purchaser reserves the right to cancel the contract on the risk and expense of the supplier without prior notice. The purchaser will provide End User Certificate for acquisition of export license to the supplier (format to be provided by the supplier for respective country within 10 day of signing of the contract).

23. <u>Technical Specification:</u> The supplier will provide OEM certificate, quality certificate /inspection document to the purchaser confirming the quality of the product being supplied under this contract .Store must bear the manufacturer's identification marking /monogram.

24. **Inspection /Testing of Store**: Inspection testing will be carried out at NUTECH by the concerned inspection team as detailed by the respective department in accordance with the laid down Acceptance Criteria. (Acceptance Test Procedure (ATPs)/Drawing /Test standard and specification). The supplier will provide ATPs with technical offer. Mutually agreed/approved ATPs will form part of contract to govern the inspection of store subsequently.

25. **Change In Specification /Mfr /Model.** No alternation marked/brand and quality of store will be entertained after the tender have been opened.

26. Checking of Store at Consignee/User End. All stores will be checked at Consignee's end in the presence of the supplier's representative. If for some reason, the supplier decides not to nominate his representative for such checking, an advance written notice to this effect will be given by the supplier to the consignee prior to immediately on shipment of store. In such an event the supplier will clearly undertake that decision of consignee with regard to quantities and description of consignment will be taken as final and discrepancy found will be accordingly made up by supplier. In all other cases the consignee will inform the supplier about arrival of consignment immediately on receipt of store through registered email/letter and telephone. If no response from the supplier is received within 15 days from initiation letter the consignee will have the right to proceed with the checking without supplier's representative. User/Consignee's report on checking of the stores will be binding on the seller in such cases.

27. Packing /Marking. The supplier shall be responsible for proper packing of the

Store in standard export packing worthy of transportation by sea /air /road rail so as to ensure their content being free from lose or damages due to faulty packing on arrival at the ultimate destination. Packing of stores will be done at the expenses of the supplier. All packing cases, containers and other packing material shall become the property of the NUTECH on receipt. Any loss occurred /demurrage paid due to wrong marking will be made good by the supplier.

28. **<u>Original Performa Invoice</u>**: Original Performa invoice must have following components incorporated:-

- a. HS Code
- b. Incoterm
- c. Payment Terms
- d. Origin of good
- e. Port of shipment
- f. Address of OEM
- g. Seller acceptance (on Performa Invoice)
- h. Invoice Date
- i. Latest date of shipment
- j. Seller complete bank detail

**Note:** Performa Invoice in the name of NUTECH in case of FOB cases & in the name of local partner in case of FOR cases.

#### 29. General Instructions: Following must be noted:-

- a. The firm should provide point to point acceptance of each clause of IT and special instructions attached with IT.
- b. Firm will render a certificate with technical offer that firm is neither defaulter nor blacklisted by any Government / semi Government organization directly or indirectly. (On Judicial Paper)
- c. Rates should be quoted on Free Delivery basis at NUTECH Islamabad.
- d. The stipulated delivery period should be strictly adhered to. Any anticipated delay that is beyond the control of Seller will be informed (in writing) well in advance of the expiry of the due date of the activity along with reasons thereof, requesting for the grant of extension in delivery period. If the Seller fails to do so, or the Buyer is not convinced with the

rationale provided by the Seller, Liquidated Damages up to/at 2% per month or part thereof, will be imposed. However, the maximum limit of the Liquidated Damages will not exceed 10% of the delayed store value.

- e. If even after applicability of 10% LD, the Seller fails to deliver the required stores, the Buyer will be at liberty to Cancel the contract, and /or procure the stores from an alternate source, on the Seller's "Risk & Cost/Expense". In that case, the Seller will be bound to make payment to the new source through NUTECH. The purchaser's decision under this clause shall NOT be subjected to arbitration.
- f. NUTECH reserves the right to cancel the Contract without assigning any reason whatsoever during its currency / execution / after placement, if the firm is found to be involved in any dubious activity, litigation, lacking to meet contractual obligations with the purchaser or is blacklisted with any other Public procurement agency. No claims / loss /damage of whatsoever nature shall be entertained and NUTECH's decision in this regard will be final / binding on the Seller.
- g. An appropriate amount may be paid for mobilization against Bank Guarantee/CDR/Demand Draft/Pay Order.
- Firms with previous pending/outstanding projects/business and unsatisfactory performance with NUTECH may not be considered for award of any further business.

Deputy Director Supply Chain Management Office

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### <u>Annex-A</u>

## **Technical Specifications**

# NUTECH / SCM / Computer Lab Eqpt II - PSDP 2021 / TD-188

Ser	Items	Description	A/U	Country of	Qty	Bidder Compliance	
				Origin		Yes	No
1.	Firewall	<ul> <li>SRX300 Services Gateway: This device consolidates security, routing, Switching, and WAN connectivity up to 50 users.</li> <li>Includes hardware (8GE, 4G RAM, 8G Flash, power adapter and cable)</li> <li>Junos Software Base (Firewall, NAT, IPSec, Routing, MPLS and Switching).</li> <li>3 year subscription for Application Security,</li> <li>IPS, AV, URL filtering and Anti-Spam</li> <li>PSS Next Day Support for SRX300-SYS-JB</li> <li>SRX300 rack mount kit without adaptor tray</li> <li>Junos OS 20.1R1 or advanced version</li> <li>Maximum concurrent sessions: 64,000</li> <li>New sessions/second (sustained, TCP, 3- way): 5000</li> <li>Maximum security policies: 1000</li> <li>Power adapter for SRX300</li> <li>4 x IG SFP transceiver modules compatible</li> <li>with SRX300</li> <li>4x full duplex LC -LC connector with 3m cable</li> <li>(compatible with SFP module)</li> <li>2x full duplex LC -LC connector with 5m cable</li> <li>(compatible with SFP module)</li> <li>4 x Ethernet ports of 5m to connect SRX300</li> <li>with a network switch</li> <li>Documentation and all accessories included</li> </ul>	Nos	Any	1		
2.	Router-Switch	Catalyst 2960L-24PS rack mountable switch that provides switching for branch, out-of-the-wiring-closet applications,	Nos	Any	2		

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	1	· · · · · · · · · · · · · · · · · · ·				1 45	
		<ul> <li>and critical Internet of Things (IoT) deployments.</li> <li>2960L-24PS with POE+, 4x1G SFP, LAN Base</li> <li>CONT-SNT-WSC2964 NTC 8X5XNBD (2 years)</li> <li>24 x 10/100/1000 PoE+ ports with line-rate forwarding</li> <li>4 fixed 10 Gigabit Ethernet SFP+ uplinks</li> <li>Perpetual PoE+ support with a power budget</li> <li>Switching bandwidth: 56 Gbps ¦ Forwarding bandwidth: 28 Gbps ¦ Forwarding performance (64-byte packet size): 41.67 Mpps</li> <li>Enhanced version of Cisco IOS LAN Lite software</li> <li>CLI and/or intuitive Web-UI manageability options</li> <li>Device management support with: Over-the-air access via Bluetooth, Simple Network Management Protocol (SNMP), RJ-45 or USB console access, Network management with Cisco Prime®, Cisco Network Plug and Play, and Cisco DNA Center</li> <li>Security with 802.1X support for connected devices, Switched Port Analyzer (SPAN), and Bridge Protocol Data Unit (BPDU) Guard</li> <li>Basic Layer 3 features with Static routing and Routing Information Protocol (RIP)</li> <li>Accessories including:</li> <li>3 x IG SFP transceiver modules for each 2960L-24PS switch</li> <li>2x full duplex LC -SC connector with 5m cable (compatible with SFP module)</li> <li>2x full duplex LC -ST connector with 5m cable (compatible with SFP module)</li> <li>2260L-24PS-LL rack mount kit.</li> <li>Power adapter</li> <li>Documentation included</li> <li>or Equivalent (with Cisco IOS LAN Lite software)</li> </ul>					
3.	Digital Handheld Multimeter (2 in one)	Digital Handheld Oscilloscope Multimeter two in one:• Display 3.5" color TFT-LCD• Bandwidth 20 MHz• Channels Single• Maximum real-time sample rate 100 MS/s• Record length 6,000 points	Nos	Any	8		

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	1			1	1	1 49 6 1	3 01 30
		Maximum AC and DC voltage measured400V					
		Maximum AC and DC current measured 20 amp					
		Maximum resistance measured 40 MΩ					
		Maximum capacitance measured100µF					
		Power source Rechargeable lithium ion battery or					
		AC adapter for 100 to 240V, 50/60Hz					
		Package includes:					
		OwonHDS1021M digital oscilloscope and multimeter					
		Oscilloscope voltage probe					
		Set of test leads					
		Extension module for large current measurement					
		• Extension module for small capacitance measurement					
		Output terminal for testing of 1 kHz/5V square-wave					
		signal					
		<ul><li>Probe adjustment tools</li><li>USB interface cable</li></ul>					
		<ul> <li>Rechargeable lithium ion battery</li> <li>Battery charger/AC adapter</li> </ul>					
		<ul> <li>Instructions</li> </ul>					
		Or Equivalent					
		Power Supply Variable with Soldering Station					
		5 in 1 Comprehensive Desoldering Station SMD					
		Maintenance Station Soldering Iron Heat Gun with					
		Variable power supply DES95.					
		Item specifics:					
4.	Power Supply	Rated Voltage:220V	Nos	Any	6		
	Variable (5 in one)	Air Volume:250L	1100	,,	Ũ		
		Feature: Temperature Adjustable					
		Feature:Temperature Digital Display					
		Feature:Cool / Hot Air Is customized:Yes					
		Rated Output Power:1600W					
		Weight:400*300*250					
		No-Load Speed:1200rpm					

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						1 49	
		USB ports interface Includes: Power supply plug cables with alligator clips.					
		7PCSESD Safe Anti Static Stainless Steel Tweezers Set					
		with Carrying Bag.					
		Or Equivalent					
		Package Contains: 1. NanoStation2 (x3) 2. Wireless Access Point 450Mbps TL-WA901ND (x2)					
5.	Ubiquity Network Nano Stations	<ul> <li>NanoStation 2 (x3)</li> <li>CPU: Atheros 180MHz MIPS</li> <li>RAM: 16MB RAM</li> <li>Flash: 4MB FLASH</li> <li>Wireless: 2.4GHz, 802.11b/g</li> <li>Channel width: 5/10/20MHz</li> <li>Antenna Gain: 10dBi x2</li> <li>Polarity: Adaptive Vertical/Horizontal</li> <li>Ext. Ant. Option: Yes, RP-SMA Connector</li> <li>Range: 15km+ (100km using ext ant.)</li> <li>Throughput: 25Mbps+ TCP/IP</li> <li>Mounting: Pole Mount (straps included)</li> <li>Accessories: Ubiquiti Window/Wall Mount,</li> <li>Power Supply: 12V,</li> <li>PoE-24-24W-G (included)</li> <li>Approvals: FCC 15.247, IC</li> <li>Wireless Access Point 450Mbps TL-WA901ND (x2)</li> <li>450Mbps wireless transmission rate Supports multiple operating modes</li> <li>Easily setup a WPA-PSK/WPA2-PSK connection Up to 30 meters (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul>	Nos	Any	3+2		

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	1				1	 E 13 01 30
		<ul> <li>802.11b</li> <li>Antenna Type 3*5dBi Detachable Omni Directional (RP-SMA)</li> <li>Frequency 2.4-2.4835GHz Accessories included: Wires/cables and power adapters.</li> <li>Or Equivalent compatible with existing nanostations2 in lab</li> </ul>				
6.	Stand Drilling Machine	<ul> <li>Mini Drill with Hobby Stand Machine Adjustable Height <ul> <li>3 Level Adjustable Position</li> <li>2 Different Size Drill Holder Adaptor (3, 3.5Cm)</li> <li>Built-In Accessories Holder</li> <li>Made of Durable, Impact-Resistant Plastic</li> <li>Nonskid Rubber Pad Base</li> <li>Mini Drill with Hobby Drill Stand &amp; Adaptor 12Vdc</li> </ul> </li> <li>Stabs for Drilling Machine, Adjustable <ul> <li>Height Applicable for N-Drill-2000 As Well as for N-Drill-3000.</li> <li>Made of Durable Plastics</li> <li>Slip-Proof Base</li> <li>Adjustable Height - 3 Ste</li> </ul> </li> <li>1 x Mini Drill + Hobby Drill Stand Drilling Machine Adjustable Height</li> </ul>	Nos	Any	2	
7a.	Jumper Wires	Jumper wires (18 Ea) <ul> <li>12 inch Solid tip Multicolor male-male</li> <li>12 inch Solid tip Multicolor female-female</li> <li>12 inch Solid tip Multicolor female-male</li> <li>UEI AJW1 18 AWG (Alligator clip both ends)</li> <li>Male Pin to Alligator Clip</li> </ul>	Nos	Any	90	
7b.	Jumper Wires	Jumper wire spool 25ft (2 Ea) • Red • White • Blue • Black • Yellow	Nos	Any	10	

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8.	Laser Printer	HP Color Lase jet Pro M254NW (with color tonner)     OR Equivalent		Any	1	
9.	Sensors	<ul> <li>Wireless multi sensor development kit with app for IoT and wearable sensor applicationsSTEVAL- MKSBOX1V1</li> <li>Compact board with the following high precision (embedded) sensors:         <ol> <li>Digital temperature sensor (STTS751)</li> <li><u>6</u>-axis inertial measurement unit (LSM6DSOX)</li> <li><u>3</u>-axis accelerometers (LIS2DW12 and LIS3DHH)</li> <li><u>3</u>-axis magnetometer (LIS2MDL)</li> <li>Altimeter / pressure sensor (MP23ABS1)</li> <li><u>Humidity sensor (HTS221)</u></li> </ol> </li> <li>Expert Mode with additional sensor app parameter settings</li> <li>Ultra-low-power ARM Cortex-M4 microcontroller with DSP and FPU (STM32L4R9)</li> <li>Bluetooth Smart connectivity v4.2 (SPBTLE-1S)</li> </ul>	Nos	Any	15	
10.	Quad Copter	<ul> <li>Programmable and educational codrone pro. Kit with all the parts to build a programmable controller and drone (latest version)</li> <li>1 CoDrone</li> <li>Controller Set (Joystick, Various Frames, Wires, Battery Pack)</li> <li>Smart Inventor board</li> <li>1 Lipo Battery</li> <li>USB Cable &amp; Battery Charger</li> <li>Bluetooth Module</li> <li>Main Features:</li> <li>Arduino-compatible circuit board</li> <li>Easily removable/replaceable motors</li> <li>lightweight 1.66 lbs</li> <li>Dimensions 9 × 9 × 2.5 in</li> </ul>	Nos	Any	2	

	1					
		Or Equivalent compatible with Codrone Pro FPV and drive kit				
11.	Function Generator	<ul> <li>Dual-channel, with bandwidth up to 60-80 MHz, and amplitude up to 20 Vpp.</li> <li>150 MSa/s sampling rate, 14-bit vertical resolution, and 16 kpts waveform length</li> <li>Innovative EasyPulse technology, capable of generating lower-jitter Pulse waveforms, brings a wide range and extremely high precision in pulse width and rise/fall times adjustment.</li> <li>Special circuit for Square wave function, can generate Square waves up to 60 MHz with jitter less than 300 ps+0.05 ppm of period.</li> <li>Plenty of analog and digital modulation types: AM, DSB-AM, FM, PM, FSK, ASK, PSK and PWM.</li> <li>Sweep and Burst functions.</li> <li>Harmonics Generator function.</li> <li>Waveform Combining function.</li> <li>High precision Frequency Counter.</li> <li>Standard interfaces: USB Host, USB Device (USBTMC), LAN (VXI-11).</li> <li>Optional interface: GPIB.</li> <li>Waveform combining function.</li> <li>4.3" TFT-LCD display</li> <li>Same as per exiting function generator in lab</li> </ul>	Nos	Any	3	
12.	3D Printer	<ul> <li>Desktop 3D Printer</li> <li>-digitizer package to create 3D models designed with</li> <li>both educators and students in mind.</li> <li>Printer properties: <ul> <li>3D printer- FusedDepositionModelingFDM</li> <li>Min Build Size :11.61 in x 7.68 in x 6.5 in</li> <li>Max Layer Thickness :2.54 mil</li> <li>Nozzle Diameter :0.02 in</li> <li>Interface :USB, LAN, WiFi(n), USB host</li> <li>Build Materials Supported : Polylactide (PLA)</li> <li>Printer Features :Built-in camera, flex build plate,</li> <li>Smart Extruder+</li> </ul> </li> </ul>	Nos	Any	1	

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	1	1				 e 10 01 30
		<ul> <li>Builtin Devices :Status LCD</li> <li>Connectivity Technology :Wireless</li> <li>Interface: USB, LAN, Wi-Fi(n), USB host</li> <li>Input File Formats Supported :STL, OBJ, Thing,MakerBot, WRL, SLDPRT, SLDASM, IPT,</li> </ul>				
		IAM,IGES, IGS, STEP, STP, CATPart, CATProduct,PRT, PAR, ASM, X_T, X_B				
		<ul> <li>Digitizer properties:</li> <li>Scan volume: Up to 20.3 cm (Diameter) x 20.3 cm (Height) [8 x 8 in]</li> </ul>				
		<ul> <li>Dimensional Accuracy: +         <ul> <li>2.0 mm [+/-0.079 in]</li> </ul> </li> </ul>				
		<ul> <li>Detail resolution: 0.5 mm [0.0197 in]</li> <li>TRIANGLES Per 3D model: Approx. 200K</li> </ul>				
		Scan speed: Approx. 12 Minutes				
		Scan per rotation: 800 per rotation				
		Or Equivalent (compatible with makerbot cloud)				
		Precision 3640 Tower CTO BASE [Precision 3640 Tower scalable				
		<ul> <li>Intel Xeon W-1270 (8 Core, 16M cache, base 3.4GHz, up to 5.0GHz) DDR4-2933</li> </ul>				
		<ul><li>Intel Xeon CPU label</li><li>Boot drive or storage volume is 4TB</li></ul>				
		<ul> <li>Precision 3640 Tower with 550W up to 90% efficient (80 Plus Gold) PSU,Advanced Front I/O with SD card reader</li> </ul>				
13.	High Performance Workstation	<ul> <li>32GB 2X16GB DDR4 2666MHz or 2933MHz (2933MHz requires Intel Core i7or above) UDIMM Non-ECC Memory</li> </ul>	Nos	Any	1	
		• 2TB 7200rpm SATA 3.5" HDD				
		<ul> <li>120mm Fan w/ Holder, 36xx</li> <li>HEATSINK for 80W CPU</li> </ul>				
		8x DVD+/-RW 9.5mm Optical Disk Drive				
		System Power Cord (Pakistan)				
		<ul> <li>Nvidia GeForce RTX 2080 Ti, 11GB, 3DP, HDMI, USB- C (Precision 3640)</li> </ul>				
		<ul> <li>Internal speaker</li> </ul>				
		Qualcomm QCA61x4A 802.11ac Dual Band (2x2)				

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		<ul> <li>Wireless Adapter + Bluetooth4.1 LE M.2</li> <li>External Antenna for WLAN</li> <li>3.5" HDD Tray</li> <li>Dell Premier Wireless Keyboard and Mouse   KM717</li> <li>Windows 10 Pro for Workstations (4 Cores Plus) English</li> <li>Support up to 3 Graphic Cards</li> <li>Dell UltraSharp 34" Curved USB-C Monitor   U3419W, 86.5 cm (34 ") black</li> </ul>					
14.	GPU	<ul> <li>Nvidia GeForce RTX 2080 Ti, 11GB, 3DP, HDMI, USB-C (Precision 3640)</li> <li>Or Equivalent: Compatible with Serial 2 (Workstation)</li> </ul>	Nos	Any	2		

Firm Name:	
Signature:	
Name:	
Designation:	

# **Special Instructions**

Description	Bid	der	Tech Scrutiny to be done by		be done by User
	Yes	No	Accepted	Rejected	Reasons of Rejection
Environment Conditions					
(a) Temperature range: 05°C to +45°C					
(b) Relative humidity: 0-70% non-condensing					
Warranty period One year from the date of commissioning.					
Training Notes         Supplier will provide a set of handouts for					
training on operation and maintenance of the equipment					
PublicationsSupplier is to provide hard and soft copies (CD)					
of following manuals.					
(a) <b>Operational / Maintenance manual</b> : - Qty 01 with Equipment					
and additional Qty 02 for record purposes and should consist of					
following sections:-					
(1)Equipment Description /Operation:-					
(a)Specifications					
(b)Description					
(c)Operation					
(2)Servicing:-					
(a)Maintenance Schedule (b )Adjustment / test					
(c)Removal / Installation procedure					
(d)Tools Used					
(3) Trouble shooting guide					
(c) means energing galae					
(b) <b>IPB</b> should have full parts description along with detailed					
diagrams (exploded view).					
(c) Experimental manuals which must contain the list and					
procedure of the experiments that equipment can perform.					
Spares / Technical Support					
(a) Supplier to have in-country spares / technical support and					

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				1 age <b>21</b> 01 <b>30</b>
ensure s	pares and technical support / assistance for next 10 years			
	prehensive list of spares required for scheduled			
	ance of Equipment is to be provided			
	oftware provided must have its license			
. ,	are upgrade support must be provided free of cost for 10 x			
-	h renewed license at every upgrade			
· · · ·	lier must also provide calibration service for at least 5 x			
years an	er commissioning			
Additior	al Spare / Replaceable parts.			
(a)	Replaceable spare / parts during scheduled inspections			
	to be identified and provided as per requirement along with			
eq (b)	uipment sufficient to cater five years consumption. All specialized / standard tools required for inspection /			
	air / servicing must be supplied along with equipment.			
	I <b>Inspection Criteria:</b> 100% physical inspection of store will			
details:-	d out before commissioning of the equipment for following			
(2	) For physical damage, scratches and deformity.			
(b	) Accessories /components as per contractual			
s	ecifications.			
(c	) Technical Manuals (Operation manual, user guide,			
IF	Bs).			
(c	) Quality certificate and calibration certificate by the OEM			
(6	) OEM certificate and verifiable documents by the			
	supplier that store has been procured from certified			
	source and is factory new and from latest production.			
(f) B	and name and country of origin			
Commis	sioning			
(a)				
OE	M rep at his own cost and risk at designated place at			

NUTECH. (b) Any special requirement for installation, operation and commissioning must be specified the offer by the supplier.			
<b>Training:</b> 01 week OEM operational/ maintenance training at NUTECH			
<b>Improvement and Safety Measures:</b> Any improvement and safety measures suggested by NUTECH during commissioning are to be resolved by the supplier / manufacturer at no extra cost.			
<ul> <li>Liability of Supplier         <ul> <li>(a) OEM certificate of authorized dealership Supplier is to provide original OEM certificate of subject equipment bought directly from the manufacturer and being an authorized dealer.</li> <li>(b) In case the equipment supplied is not compatible with specifications, the supplier will be obliged to call his representatives at his own cost for consultation and corrective action</li> </ul> </li> </ul>			

Firm Name:	
Signature:	
Name:	
Designation:	

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#### Annex-B

#### TECHNICAL OFFER NUTECH / SCM / Computer Lab Eqpt II - PSDP 2021 / TD-188

#### Fill in following essential Parameters:-

- 1. Validity of Offer: \_\_\_\_\_ Days (Should not be less than **90 days**)
- 2. Delivery period: \_\_\_\_\_Days (After placement of order)
- 3. Country of Origin:
- 4. Warranty Period: \_\_\_\_

#### <u>General</u>

- 1. GST Number: (Enclose Copy)
- 2. NTN / CNIC: \_\_\_\_\_(if exempted, provide valid exemption certificate)

## Payment Terms (In continuation of IT Document clause 12)

In FOR Cases

20% advance payment against BG/CDR/Pay Order/DD

80% payment after delivery, installation / commissioning /user satisfaction certificate

#### **Details of Foreign Principal Information with account details)**

- 1. Name / Title:
- 2. Address:

OEM Name:	Firm Name:	Signature:
OEM Focal Person:	Firm Focal Person:	Official Seal:
OEM Phone Number:	Firm Phone Number:	Name & CNIC:
OEM Email Id:	Firm Email Id:	Designation:

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## <u>Annex C</u>

## FINANCIAL OFFER NUTECH / SCM / Computer Lab Eqpt II - PSDP 2021 / TD-188

Ser	Items	Description	A/U	Qty	Unit Price PKR (Including Tax)	Total Price PKR (Including Tax)
1.	Firewall	<ul> <li>SRX300 Services Gateway:</li> <li>This device consolidates security, routing,</li> <li>Switching, and WAN connectivity up to 50 users.</li> <li>Includes hardware (8GE, 4G RAM, 8G Flash, power adapter and cable)</li> <li>Junos Software Base (Firewall, NAT, IPSec, Routing, MPLS and Switching).</li> <li>3 year subscription for Application Security,</li> <li>IPS, AV, URL filtering and Anti-Spam</li> <li>PSS Next Day Support for SRX300-SYS-JB</li> <li>SRX300 rack mount kit without adaptor tray</li> <li>Junos OS 20.1R1 or advanced version</li> <li>Maximum concurrent sessions: 64,000</li> <li>New sessions/second (sustained, TCP, 3-</li> <li>way): 5000</li> <li>Maximum security policies: 1000</li> <li>Power adapter for SRX300</li> <li>4 x IG SFP transceiver modules compatible</li> <li>with SRX300</li> <li>4x full duplex LC -LC connector with 3m cable</li> <li>(compatible with SFP module)</li> <li>2x full duplex LC -LC connector with 5m cable</li> <li>(compatible with SFP module)</li> <li>4 x Ethernet ports of 5m to connect SRX300</li> <li>with a network switch</li> <li>Documentation and all accessories included</li> </ul>	Nos	1		
2.	Router-Switch	Catalyst 2960L-24PS rack mountable switch that provides switching for branch, out-of-the-wiring-closet applications, and	Nos	2		

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					Page 25 01 30
		<ul> <li>critical Internet of Things (IoT) deployments.</li> <li>2960L-24PS with POE+, 4x1G SFP, LAN Base</li> <li>CONT-SNT-WSC2964 NTC 8X5XNBD (2 years)</li> <li>24 x 10/100/1000 PoE+ ports with line-rate forwarding</li> <li>4 fixed 10 Gigabit Ethernet SFP+ uplinks</li> <li>Perpetual PoE+ support with a power budget</li> <li>Switching bandwidth: 56 Gbps ¦ Forwarding bandwidth: 28 Gbps ¦ Forwarding performance (64-byte packet size): 41.67 Mpps</li> <li>Enhanced version of Cisco IOS LAN Lite software</li> <li>CLI and/or intuitive Web-UI manageability options</li> <li>Device management support with: Over-the-air access via Bluetooth, Simple Network Management Protocol (SNMP), RJ-45 or USB console access, Network management with Cisco Prime®, Cisco Network Plug and Play, and Cisco DNA Center</li> <li>Security with 802.1X support for connected devices, Switched Port Analyzer (SPAN), and Bridge Protocol Data Unit (BPDU) Guard</li> <li>Basic Layer 3 features with Static routing and Routing Information Protocol (RIP)</li> <li>Accessories including:</li> <li>3 x IG SFP transceiver modules for each 2960L-24PS switch</li> <li>2x full duplex LC -SC connector with 5m cable (compatible with SFP module)</li> <li>2x full duplex LC -ST connector with 5m cable (compatible with SFP module)</li> <li>2960L-24PS-LL rack mount kit.</li> <li>Power adapter</li> <li>Documentation included</li> </ul>			
		•			
		Digital Handheld Oscilloscope Multimeter two in one:			
3.	Digital Handheld Multimeter (2 in one)	<ul> <li>Display 3.5" color TFT-LCD</li> <li>Bandwidth 20 MHz</li> <li>Channels Single</li> <li>Maximum real-time sample rate 100 MS/s</li> </ul>	Nos	8	
		Record length 6,000 points			

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					Faye 20 01 30
		<ul> <li>Maximum AC and DC voltage measured 400V</li> <li>Maximum AC and DC current measured 20 amp</li> <li>Maximum resistance measured 40 MΩ</li> <li>Maximum capacitance measured 100µF</li> <li>Power source Rechargeable lithium ion battery or AC adapter for 100 to 240V, 50/60Hz</li> <li>Package includes:</li> <li>OwonHDS1021M digital oscilloscope and multimeter</li> <li>Oscilloscope voltage probe</li> <li>Set of test leads</li> <li>Extension module for large current measurement</li> <li>Extension module for small capacitance measurement</li> <li>Output terminal for testing of 1 kHz/5V square-wave signal</li> <li>Probe adjustment tools</li> <li>USB interface cable</li> <li>CD-ROM PC software</li> <li>Rechargeable lithium ion battery</li> <li>Battery charger/AC adapter</li> <li>Instructions</li> </ul>			
4.	Power Supply Variable (5 in one)	Power Supply Variable with Soldering Station         5 in 1 Comprehensive Desoldering Station SMD         Maintenance Station Soldering Iron Heat Gun with         Variable power supply DES95.         Item specifics:         Rated Voltage:220V         Air Volume:250L         Feature:Temperature Adjustable         Feature:Temperature Digital Display         Feature:Cool / Hot Air         Is customized:Yes         Rated Output Power:1600W         Weight:400*300*250         No-Load Speed:1200rpm         USB ports interface	Nos	6	

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1       Includes: Power supply plug cables with alligator clips. 7PCSESD Safe Anti Static Stainless Steel Tweezers Set with Carrying Bag.         0       Fquivalent         9       Package Contains: 1. NenoStation2 (x3)         2. Wireless Access Point 450Mbps TL-WA901ND (x2)         NanoStation 2 (x3)         2. Wireless Access Point 450Mbps TL-WA901ND (x2)         NanoStation 2 (x3)         6       CPU: Atheres 180MH2 MIPS         7       Flash: 4MB FLASH         9       Vireless: 2.4GH2, 802.11b/g         9       Channel: width: 510/20MH2         9       Polarity: Adquive VerticalHorizontal         9       Ext. Ant. Option: Yes, RP-SMA Connector         9       Range: 15km + (100km using set ant.)         9       Throughput: 25Mbps+TCP/IP         9       Neuritity: Pole Mount (straps included)         4       Accessories: Ubiquit Window/Wall Mount,         9       Poler: Stations         9       TL-WA90ThD (x2)         1       450Mbps wireless transmission rate         Support multiple operating modes       Easily setue VPA-PS/KVM2-PS kc connection         10       Interface One Suppl (2VDC)/A         9       Support Passive POE         10       Button WPAP-RSWRM2-PS kc connection				· · · · · ·		1	1 age <b>21</b> 01 <b>30</b>
5.     Ubiquity Network Nano Stations     Carrying Bag.       5.     Ubiquity Network Nano Stations     Package Contains: 1. NanoStation2 (x3) 2. Wireless Access Point 450Mbps TL-WA901ND (x2) NanoStation 2 (x3) 2. Wireless Access Point 450Mbps TL-WA901ND (x2) NanoStation 2 (x3) 3. CPU: Atheros 180MHz MIPS 9. RAM: 16MB RAM 9. Flash: 4MB FLASH 9. Wireless: 2.4.GHz, 802.11b/g 9. Channel witht: 5/10/20MHz 4. Anterna Gain: 10dBi x2 9. Polarity: Adaptive Vertical/Horizontal Ext. Ant. Option: Yes, RP-SMA Connector 9. Range: 15km+ (100km using ext ant.) 1. Throughput: 25Mbps+ TCP/IP       5.     Ubiquity Network Nano Stations     Nos       7.     Pole: 72, 72, 1C Wireless Access Point 450Mbps TL-WA901ND (x2) 450Mbps wireless transmission rate Supports multiple operating modes 5. Support Passive Point 5. Support Passive Point 5. Support Passive Point 907(A) 450Mbps wireless transmission rate Supports multiple operating modes 5. Support Passive Point 907(A) 5. Support Passive Point 9100 Mick Hermet Potr(R)45) 5. Support Passive Point 9100 Mick 5. Support Passive Point 907(A) 5. Support Passive Point 9100 Mick       6.     Power Supply 12VD/1A 6.       7.     Wireless Standards IEEE 802:110, IEEE 802:110, IEEE							
5.     Ubiquity Network Naro Stations     NanoStation2 (x3)       5.     Ubiquity Network Naro Stations     CPU: Atheros 180/ML2 MIPS       6.     CPU: Atheros 180/ML2 MIPS       7.     RAM: 16MB RAM       9.     Flash: 4MB FLASH       9.     Wireless: 2.4GHz, 802.11b/g       9.     Channel width: 5/10/20MHz       4.     Antenna Gain: 10dB ix 2       9.     Polarity: Adaptive Vertical/Horizontal       5.     Kit Ant. Dolfno: Yes, RF-SMA Connector       8.     Range: 15km+ (100km using ext ant.)       1.     Throughput: 25Mbps+ TCP/IP       Mounting: Pole Mount (straps included)       4.     Accessories: Ubiquit WindowWall Mount, Power Suppy: 12V, PoE-24-24W-G (included)       4.     Approvals: FCC 15.247.1C       Wireless Access Point 450Mbps TL-WAS01ND (x2)       4.     450Mbps wireless transmission rate Supports multiple operating modes       5.     Easily setup a WPA-PSK WMPA2-PSK connection Up to 30 meters (100 feet) of flaxible deployment       1.     Interface One 10/100M Ethernet Port(RJ45)       5.     Support Passive Poel       9.     Button WPS/Reset, Power On/Off       9.     Power Supply 12VD/1A       9.     External Power Supply 12VD/1A			7PCSESD Safe Anti Static Stainless Steel Tweezers Set with				
5.     Ubiquity Network Naro Stations     NanoStation2 (x3)       5.     Ubiquity Network Naro Stations     CPU: Atheros 180/ML2 MIPS       6.     CPU: Atheros 180/ML2 MIPS       7.     RAM: 16MB RAM       9.     Flash: 4MB FLASH       9.     Wireless: 2.4GHz, 802.11b/g       9.     Channel width: 5/10/20MHz       4.     Antenna Gain: 10dB ix 2       9.     Polarity: Adaptive Vertical/Horizontal       5.     Kit Ant. Dolfno: Yes, RF-SMA Connector       8.     Range: 15km+ (100km using ext ant.)       1.     Throughput: 25Mbps+ TCP/IP       Mounting: Pole Mount (straps included)       4.     Accessories: Ubiquit WindowWall Mount, Power Suppy: 12V, PoE-24-24W-G (included)       4.     Approvals: FCC 15.247.1C       Wireless Access Point 450Mbps TL-WAS01ND (x2)       4.     450Mbps wireless transmission rate Supports multiple operating modes       5.     Easily setup a WPA-PSK WMPA2-PSK connection Up to 30 meters (100 feet) of flaxible deployment       1.     Interface One 10/100M Ethernet Port(RJ45)       5.     Support Passive Poel       9.     Button WPS/Reset, Power On/Off       9.     Power Supply 12VD/1A       9.     External Power Supply 12VD/1A			Carrying Bag.				
5.     Ubiquity Network Nano Stations     Package Contains: 1. NanoStation2 (x3) 2. Wireless Access Point 450Mbps TL-WA901ND (x2) NanoStation 2 (x3) 6. CPU: Atheros 180Mhtz MIPS 7. RAM: 16MB RAM 7. Flash: 4MB FLASH 7. Wireless: 2.4GHz, 802.11b/g 7. Channel width: 51/0200MHz 7. Throughput: 25Mbps TCP/IP 7. Throughput: 25Mbps TCP/IP 7. Channel width: 51/0200MHz 7. Channel width: 51/020M							
5.       Ubiquity       1. NañoStation 2 (x3)         5.       Ubiquity       CPU: Atheros 180MHz MIPS         7.       RAM: 16MB RAM         8.       Flash: 4MB FLASH         9.       Olarity: Adaptive Vertical/Horizontal         9.       Polarity: Column (straps included)         1.       Accessories: Ubiquiti Window/Wall Mount,         1.       Polez-224W-G (included)         1.       Approvals: FCC 15 247. IC         Wireless Access Point 450Mbps       TL-WA901ND (x2)         1.       450Mbps wireless transmission rate         Support Passive POE       Support Passive POE         9.       Power Consumption 5.8W         9.       External Power Supply 12VDC/1A         9.       Wireless Standards IEEE 802.110, IEEE			Or Equivalent				
5.       Ubiquity       1. NañoStation 2 (x3)       NanoStation 2 (x3)         5.       Ubiquity       CPU: Atheros 180MHz MIPS         8.       RAM: 16MB RAM       RAM: 16MB RAM         9.       Flash: 4MB FLASH       Wireless: 2.4GHz, 802.11b/g         9.       Channel width: 5/10/20MHz       Antenna Gain: 100Bi x2         9.       Polarity: Adaptive Vertical/Horizontal       Ext. Ant. Option: Yes, RP-SMA Connector         8.       Rage: 15km+ (100km using ext ant.)       Throughput: 25Mbps+ TCP/IP         9.       Mouting: Pole Mount (straps included)       Accessories: Ubiquiti Window/Wall Mount,       Nos         9.       Power Supply: 12V,       PoZ-24W-G (included)       Approvals: FCC 15.247. 1C         Wireless Access Point 450Mbps       TL-WA901ND (x2)       450Mbps wireless transmission rate         Support Passive POE       Easily setup a WPA-PSK/WPA2-PSK connection       Up to 30 meters (100 feet) of flexible deployment         1.       Interface One 10/100M Ethernet Port(RL45)       Support Passive POE       Button WPS/Reset, Power On/Off         9.       Power Consumption 5.8W       External Power Supply 12VDC/1A       Vireless Standards IEEE 802.111, IEEE 802.111, IEEE							
<ul> <li>2. Wireless Access Point 450Mbps TL-WA901ND (x2)</li> <li>NanoStation 2 (x3)         <ul> <li>CPU: Atheros 180MHz MIPS</li> <li>RAM: 16MB RAM</li> <li>Flash: 4MB FLASH</li> <li>Wireless: 2.4GHz, 802.11b/g</li> <li>Channel width: 5/10/20MHz</li> <li>Antenna Gain: 10dBi x2</li> <li>Polarity: Adaptive Vertical/Horizontal</li> <li>Ext. Ant. Option: Yes, RP-SMA Connector</li> <li>Range: 15km+ (100km using ext ant.)</li> <li>Throughput: 25Mbps+ TCP/IP</li> <li>Mounting: Pole Mount (straps included)</li> <li>Accessories: Ubiquiti Window/Wall Mount,</li> <li>Pole-24-24W-G (included)</li> <li>Approvals: FCC 15.247, IC</li> <li>Wireless transmission rate</li> <li>Support Passive POE</li> <li>Easily setup a WPA-PSK/WPA2-PSK connection</li> <li>Up on theres (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive POE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Suppl 12/2DC/1A</li> <li>Wireless Standards IEEE 802.110, IEEE</li> </ul> </li> </ul>			-				
5.       Ubiquity         5.       Ubiquity         6.       Ubiquity         7.       Wireless: 2.4GHZ, 802.11b/g         8.       Polarity: Adaptive Vertical/Horizontal         9.       Channel width: 5/10/20MHz         9.       Antenna Gain: 10dBi x2         9.       Polarity: Adaptive Vertical/Horizontal         1.       Ext. Ant. Option: Yes, RP-SMA Connector         8.       Range: 15km+ (100km using ext ant.)         1.       Throughput: 25Mbps+ TCP/IP         Mounting: Pole Mount (straps included)         4.       Accessories: Ubiquiti Window/Wall Mount,         9.       Power Supply: 12V,         9.       Power Supply: 12V,         9.       Power Supply: 12V,         9.       Poetarist 450Mbps         11.       Wireless Access Point 450Mbps         11.       Wireless Access Point 450Mbps         11.       Wireless Caccess Point 450Mbps         11.       Wireless Cacess Point 450Mbps         12.       450Mbps wireles transmission rate         Support Passive PoE       Button VPS/Reset, Power On/Off         9.       Button VPS/Reset, Power On/Off         9.       Button VPS/Reset, Power On/Off         9.       Butto							
5.       Network Nano Stations <ul> <li>Actions</li> <li>Pole Statistical (Index)</li> <li>Anternal Gain: 100km using ext ant.)</li> <li>Throughput: 25Mbps+ TCP/IP</li> <li>Mounting: Pole Mount (Istaps included)</li> <li>Accessories: Ubiquit Window/Wall Mount,</li> <li>Pole-24-24W-G (included)</li> <li>Approvals: FCC 15 247, IC</li> <li>Wireless transmission rate Supports withing or pole stransmission rate Supports withing with pole (Included)</li> <li>Approvals: FCC 15 247, IC</li> <li>Wireless transmission rate Supports withing with pole (Included)</li> <li>Approvals: FCC 15 247, IC</li> <li>Wireless transmission rate Supports multiple operating modes</li> <li>Easily setup a WPA-PSK/WPA2-PSK connection Up to 30 meters (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.111, IEEE 802.111, IEEE</li> </ul>			2. Wheless Access Point 450Mbps TL-WA90TND (X2)				
<ul> <li>5. Ubiquity</li> <li>Betwork Nano Stations</li> <li>5. Ubiquity up to 30 meters (100 feet) of flexible deployment Interface One 10/100 flex) explore Asulta (100 flex)</li> <li>450 More Stations</li> <li>5. Network Nano Stations</li> <li>5. Network Nano</li> <li>6. Not (Stations)</li> <li>7. LWA901ND (Latter National Nati</li></ul>			NanoStation 2 (x3)				
<ul> <li>Flash: 4MB FLASH</li> <li>Wireless: 2.4GHz, 802.11b/g</li> <li>Channel width: 5/0/20MHz</li> <li>Antenna Gain: 10dBi x2</li> <li>Polarity: Adaptive Vertical/Horizontal</li> <li>Ext. Ant. Option: Yes, RP-SMA Connector</li> <li>Range: 15km + (100km using ext ant.)</li> <li>Throughput: 25Mbps+ TCP/IP</li> <li>Mounting: Pole Mount (straps included)</li> <li>Accessories: Ubiquiti Window/Wall Mount,</li> <li>Poer-Supply: 12V,</li> <li>PoE-24-24W-G (included)</li> <li>Approvals: FCC 15.247, IC</li> <li>Wireless Access Point 450Mbps</li> <li>TL-WA901ND (x2)</li> <li>450Mbps wireless transmission rate</li> <li>Supports multiple operating modes</li> <li>Easily setup a WPA-PSK/WPA2-PSK connection</li> <li>Up to 30 meters (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11g, IEEE</li> </ul>			CPU: Atheros 180MHz MIPS				
5.       Wireless: 2.4GHz, 802.11b/g       Channel width: 5/10/200MHz         Antenna Gain: 10dBi x2       Polarity: Adaptive Vertical/Horizontal         Ext. Ant. Option: Yes, RP-SMA Connector       Range: 15km+ (100km using ext ant.)         Throughput: 25Mbps+ TCP/IP       Mounting: Pole Mount (straps included)         Accessories: Ubiquiti Window/Wall Mount,       Nos         Stations       Poer Supply: 12V,         Poberos Supply: 12V,       Poec-24-24W-G (included)         Approvals: FCC 15.247, IC       Wireless Access Point 450Mbps         TL-WA901ND (x2)       450Mbps wireless transmission rate         Supports multiple operating modes       Easily setup a WPA-PSK/WPA2-PSK connection         Up to 30 meters (100 feet) of flexible deployment       Interface One 10/100M Ethernet Port(RJ45)         Support Passive POE       Button WPS/Reset, Power On/Off         Power Supply 12VDC/1A       Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE			RAM: 16MB RAM				
5.       Channel width: 5/10/20MHz         • Antenna Gain: 10dBi x2         • Polarity: Adaptive Vertical/Horizontal         • Ext. Ant. Option: Yes, RP-SMA Connector         • Range: 15km+ (100km using ext ant.)         • Throughput: 25Mbps+ TCP/IP         • Mounting: Pole Mount (straps included)         • Accessories: Ubiquiti Window/Wall Mount,         • Power Supply: 12V,         • Power Supply: 12V,         • Power Supply: 12V,         • Power Supply: 12V,         • Accessories: Ubiquiti Window/Wall Mount,         • Accessories: Ubiquiti Window/Wall Mount,         • Power Supply: 12V,         • Power Supply: 12V,         • Power Supply: 12V,         • Power Supply: 12V,         • Approvals: FCC 15.247, IC         Wireless Access Point 450Mbps         TL-WA901ND (x2)         • 450Mbps wireless transmission rate         Supports multiple operating modes         • Easily setup a WPA-PSK/WPA2-PSK connection         · Up to 30 meters (100 feet) of flexible deployment         · Interface One 10/100M Ethernet Port(RJ45)         • Support Passive PoE         • Button WPS/Reset, Power On/Off         • Power Supply 12VDC/1A         • Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE			Flash: 4MB FLASH				
5.       Antenna Gain: 10dBi x2         Polarity: Adaptive Vertical/Horizontal         Ext. Ant. Option: Yes, RP-SMA Connector         Range: 15Km+ (100Km using ext ant.)         Throughput: 25Mbps+ TCP/IP         Mounting: Pole Mount (straps included)         Accessories: Ubiquiti Window/Wall Mount,         Power Supply: 12V,         PoE-24-24W-G (included)         Approvals: FCC 15.247, IC         Wireless Access Point 450Mbps         TL-WA901ND (x2)         450Mbps wireless transmission rate         Supports multiple operating modes         Easily setup a WPA-PSK/WPA2-PSK connection         Up to 30 meters (100 feet) of flexible deployment         Interface One 10/100M Ethernet Port(RJ45)         Support Passive PoE         Button WPS/Reset, Power On/Off         Power Supply 12VDC/1A         Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE			• Wireless: 2.4GHz, 802.11b/g				
5.       Polarity: Adaptive Vertical/Horizontal       Ext. Ant. Option: Yes, RP-SMA Connector         Range: 15km+ (100km using ext ant.)       Throughput: 25Mbps+ TCP/IP         Mounting: Pole Mount (straps included)       Accessories: Ubiquiti Window/Wall Mount,       Nos         Stations       Power Supply: 12V,       Poel-24-24W-6 (included)         Approvals: FCC 15.247, IC       Wireless Access Point 450Mbps       TL-WA901ND (x2)         • 450Mbps wireless transmission rate       Supports multiple operating modes       Easily setup a WPA-PSK/WPA2-PSK connection         Up to 30 meters (100 feet) of flexible deployment       Interface One 10/100M Ethernet Port(RJ45)       Support Passive PoE         Button WPS/Reset, Power On/Off       Power Supply 12VDC/1A       Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE			Channel width: 5/10/20MHz				
<ul> <li>Ext. Ant. Option: Yes, RP-SMA Connector</li> <li>Range: 15km+ (100km using ext ant.)</li> <li>Throughput: 25Mbps+ TCP/IP</li> <li>Mounting: Pole Mount (straps included)</li> <li>Accessories: Ubiquiti Window/Wall Mount,</li> <li>Power Supply: 12V,</li> <li>PoE-24-24W-G (included)</li> <li>Approvals: FCC 15.247, IC</li> <li>Wireless Access Point 450Mbps</li> <li>TL-WA901ND (x2)</li> <li>450Mbps wireless transmission rate</li> <li>Supports multiple operating modes</li> <li>Easily setup a WPA-PSK/WPA2-PSK connection</li> <li>Up to 30 meters (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12/DC/1A</li> <li>Wireless Standards IEEE 802.11g, IEEE</li> </ul>			Antenna Gain: 10dBi x2				
5.       Ubiquity Network Nano Stations <ul> <li>Range: 15km+ (100km using ext ant.) <ul> <li>Throughput: 25Mbps+ TCP/IP</li> <li>Mounting: Pole Mount (straps included)</li> <li>Accessories: Ubiquiti Window/Wall Mount,</li> <li>Power Supply: 12V,</li> <li>PoE-24-24W-G (included)</li> <li>Approvals: FCC 15.247, IC</li> <li>Wireless Access Point 450Mbps</li> <li>TL-WA901ND (x2)</li> <li>450Mbps wireless transmission rate Supports multiple operating modes</li> <li>Easily setup a WPA-PSK/WPA2-PSK connection Up to 30 meters (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul> </li> </ul>			Polarity: Adaptive Vertical/Horizontal				
<ul> <li>Throughput: 25Mbps+ TCP/IP</li> <li>Mounting: Pole Mount (straps included)</li> <li>Accessories: Ubiquiti Window/Wall Mount,</li> <li>Power Supply: 12V,</li> <li>PoE-24-24W-G (included)</li> <li>Approvals: FCC 15.247, IC</li> <li>Wireless Access Point 450Mbps</li> <li>TL-WA901ND (x2)</li> <li>450Mbps wireless transmission rate</li> <li>Supports multiple operating modes</li> <li>Easily setup a WPA-PSK/WPA2-PSK connection</li> <li>Up to 30 meters (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul>			Ext. Ant. Option: Yes, RP-SMA Connector				
5.       Woiquity Network Nano Stations       • Mounting: Pole Mount (straps included) • Accessories: Ubiquiti Window/Wall Mount, • Power Supply: 12V, • Poe-24-24W-G (included) • Approvals: FCC 15.247, IC       Nos       3+2         Wireless Access Point 450Mbps TL-WA901ND (x2) • 450Mbps wireless transmission rate Supports multiple operating modes • Easily setup a WPA-PSK/WPA2-PSK connection Up to 30 meters (100 feet) of flexible deployment • Interface One 10/100M Ethernet Port(RJ45) • Support Passive PoE • Button WPS/Reset, Power On/Off • Power Consumption 5.8W • External Power Supply 12VDC/1A • Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE       Nos       3+2			Range: 15km+ (100km using ext ant.)				
5.       Network Nano Stations <ul> <li>Accessories: Ubiquiti Window/Wall Mount, <ul> <li>Power Supply: 12V, <ul> <li>PoeE-24-24W-G (included)</li> <li>Approvals: FCC 15.247, IC</li> <li>Wireless Access Point 450Mbps</li></ul></li></ul></li></ul>			Throughput: 25Mbps+ TCP/IP				
Stations       Power Supply: 12V,         PoE-24-24W-G (included)         Approvals: FCC 15.247, IC         Wireless Access Point 450Mbps         TL-WA901ND (x2)         450Mbps wireless transmission rate         Supports multiple operating modes         Easily setup a WPA-PSK/WPA2-PSK connection         Up to 30 meters (100 feet) of flexible deployment         Interface One 10/100M Ethernet Port(RJ45)         Support Passive PoE         Button WPS/Reset, Power On/Off         Power Consumption 5.8W         External Power Supply 12VDC/1A         Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE							
<ul> <li>PoE-24-24W-G (included)</li> <li>Approvals: FCC 15.247, IC</li> <li>Wireless Access Point 450Mbps TL-WA901ND (x2)</li> <li>450Mbps wireless transmission rate Supports multiple operating modes</li> <li>Easily setup a WPA-PSK/WPA2-PSK connection Up to 30 meters (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul>	5.			Nos	3+2		
<ul> <li>Approvals: FCC 15.247, IC</li> <li>Wireless Access Point 450Mbps TL-WA901ND (x2)</li> <li>450Mbps wireless transmission rate Supports multiple operating modes</li> <li>Easily setup a WPA-PSK/WPA2-PSK connection Up to 30 meters (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul>		Stations					
Wireless Access Point 450Mbps         TL-WA901ND (x2)         • 450Mbps wireless transmission rate         Supports multiple operating modes         • Easily setup a WPA-PSK/WPA2-PSK connection         Up to 30 meters (100 feet) of flexible deployment         • Interface One 10/100M Ethernet Port(RJ45)         • Support Passive PoE         • Button WPS/Reset, Power On/Off         • Power Consumption 5.8W         • External Power Supply 12VDC/1A         • Wireless Standards IEEE 802.11p, IEEE							
TL-WA901ND (x2)         • 450Mbps wireless transmission rate Supports multiple operating modes         • Easily setup a WPA-PSK/WPA2-PSK connection Up to 30 meters (100 feet) of flexible deployment         • Interface One 10/100M Ethernet Port(RJ45)         • Support Passive PoE         • Button WPS/Reset, Power On/Off         • Power Consumption 5.8W         • External Power Supply 12VDC/1A         • Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE							
<ul> <li>450Mbps wireless transmission rate Supports multiple operating modes</li> <li>Easily setup a WPA-PSK/WPA2-PSK connection Up to 30 meters (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11g, IEEE</li> </ul>			-				
Supports multiple operating modes Easily setup a WPA-PSK/WPA2-PSK connection Up to 30 meters (100 feet) of flexible deployment Interface One 10/100M Ethernet Port(RJ45) Support Passive PoE Button WPS/Reset, Power On/Off Power Consumption 5.8W External Power Supply 12VDC/1A Wireless Standards IEEE 802.11g, IEEE							
<ul> <li>Easily setup a WPA-PSK/WPA2-PSK connection Up to 30 meters (100 feet) of flexible deployment</li> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul>							
Up to 30 meters (100 feet) of flexible deployment Interface One 10/100M Ethernet Port(RJ45) Support Passive PoE Button WPS/Reset, Power On/Off Power Consumption 5.8W External Power Supply 12VDC/1A Wireless Standards IEEE 802.11g, IEEE							
<ul> <li>Interface One 10/100M Ethernet Port(RJ45)</li> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul>							
<ul> <li>Support Passive PoE</li> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul>							
<ul> <li>Button WPS/Reset, Power On/Off</li> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul>							
<ul> <li>Power Consumption 5.8W</li> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul>							
<ul> <li>External Power Supply 12VDC/1A</li> <li>Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE</li> </ul>							
Wireless Standards IEEE 802.11n, IEEE 802.11g, IEEE							
			802.11b				

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		<ul> <li>Antenna Type 3*5dBi Detachable Omni Directional (RP-SMA)</li> <li>Frequency 2.4-2.4835GHz Accessories included: Wires/cables and power adapters.</li> <li>Or Equivalent compatible with existing nanostations2 in lab</li> </ul>			
6.	Stand Drilling Machine	<ul> <li>Mini Drill with Hobby Stand Machine Adjustable Height <ul> <li>3 Level Adjustable Position</li> <li>2 Different Size Drill Holder Adaptor (3, 3.5Cm)</li> <li>Built-In Accessories Holder</li> <li>Made of Durable, Impact-Resistant Plastic</li> <li>Nonskid Rubber Pad Base</li> <li>Mini Drill with Hobby Drill Stand &amp; Adaptor 12Vdc New</li> <li>Stabs for Drilling Machine, Adjustable</li> <li>Height Applicable for N-Drill-2000 As Well as for N-Drill-3000.</li> </ul> </li> <li>Made of Durable Plastics <ul> <li>Adjustable Height - 3 Ste</li> <li>Adjustable Height - 3 Ste</li> </ul> </li> <li>Y Mini Drill + Hobby Drill Stand Drilling Machine Adjustable Height</li> </ul>	Nos	2	
7a.	Jumper Wires	<ul> <li>Jumper wires (18 Ea)</li> <li>12 inch Solid tip Multicolor male-male</li> <li>12 inch Solid tip Multicolor female-female</li> <li>12 inch Solid tip Multicolor female-male</li> <li>UEI AJW1 18 AWG (Alligator clip both ends)</li> <li>Male Pin to Alligator Clip</li> </ul>	Nos	90	
7b.	Jumper Wires	Jumper wire spool 25ft (2 Ea) <ul> <li>Red</li> <li>White</li> <li>Blue</li> <li>Black</li> <li>Yellow</li> </ul>	Nos	10	
8.	Laser Printer	HP Color Lase jet Pro M254NW (with color tonner)     OR Equivalent	Nos	1	

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					<u> </u>
9.	Sensors	<ul> <li>Wireless multi sensor development kit with app for IoT and wearable sensor applicationsSTEVAL-MKSBOX1V1</li> <li>Compact board with the following high precision (embedded) sensors:         <ul> <li>Digital temperature sensor (STTS751)</li> <li>6-axis inertial measurement unit (LSM6DSOX)</li> <li>3-axis accelerometers (LIS2DW12 and LIS3DHH)</li> <li>3-axis magnetometer (LIS2MDL)</li> <li>Altimeter / pressure sensor (LPS22HH)</li> <li>Microphone / audio sensor (MP23ABS1)</li> <li>Humidity sensor (HTS221)</li> </ul> </li> <li>Expert Mode with additional sensor app parameter settings</li> <li>Ultra-low-power ARM Cortex-M4 microcontroller with DSP and FPU (STM32L4R9)</li> <li>Bluetooth Smart connectivity v4.2 (SPBTLE-1S)</li> </ul>	Nos	15	
10.	Quad Copter	<ul> <li>Programmable and educational codrone pro. Kit with all the parts to build a programmable controller and drone (latest version)</li> <li>1 CoDrone</li> <li>Controller Set (Joystick, Various Frames, Wires, Battery Pack)</li> <li>Smart Inventor board</li> <li>1 Lipo Battery</li> <li>USB Cable &amp; Battery Charger</li> <li>Bluetooth Module</li> <li>Main Features:</li> <li>Arduino-compatible circuit board</li> <li>Easily removable/replaceable motors</li> <li>lightweight 1.66 lbs</li> <li>Dimensions 9 × 9 × 2.5 in</li> </ul> Or Equivalent compatible with Codrone Pro FPV and drive kit	Nos	2	
11.	Function	Dual-channel, with bandwidth up to 60-80 MHz, and amplitude up to 20 Vpp.	Nos	3	

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					1 age <b>30</b> 01 <b>30</b>
	Generator	<ul> <li>150 MSa/s sampling rate, 14-bit vertical resolution, and 16 kpts waveform length</li> <li>Innovative EasyPulse technology, capable of generating lower-jitter Pulse waveforms, brings a wide range and extremely high precision in pulse width and rise/fall times adjustment.</li> <li>Special circuit for Square wave function, can generate Square waves up to 60 MHz with jitter less than 300 ps+0.05 ppm of period.</li> <li>Plenty of analog and digital modulation types: AM, DSB-AM, FM, PM, FSK, ASK, PSK and PWM.</li> <li>Sweep and Burst functions.</li> <li>Harmonics Generator function.</li> <li>Waveform Combining function.</li> <li>High precision Frequency Counter.</li> <li>Standard interfaces: USB Host, USB Device (USBTMC), LAN (VXI-11).</li> <li>Optional interface: GPIB.</li> <li>Waveform combining function.</li> <li>4.3" TFT-LCD display</li> </ul>			
12.	3D Printer	<ul> <li>Desktop 3D Printer</li> <li>-digitizer package to create 3D models designed with both educators and students in mind.</li> <li>Printer properties:</li> <li>3D printer- FusedDepositionModelingFDM</li> <li>Min Build Size :11.61 in x 7.68 in x 6.5 in</li> <li>Max Layer Thickness :2.54 mil</li> <li>Nozzle Diameter :0.02 in</li> <li>Interface :USB, LAN, WiFi(n), USB host</li> <li>Build Materials Supported : Polylactide (PLA)</li> <li>Printer Features :Built-in camera, flex build plate,</li> <li>Smart Extruder+</li> <li>Builtin Devices :Status LCD</li> <li>Connectivity Technology :Wireless</li> <li>Interface: USB, LAN, Wi-Fi(n), USB host</li> <li>Input File Formats Supported :STL, OBJ, Thing,MakerBot, WRL, SLDPRT, SLDASM, IPT, IAM,IGES, IGS, STEP, STP, CATPart, CATProduct,PRT, PAR, ASM, X T, X B</li> </ul>	Nos	1	

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	<ul> <li>Digitizer properties:</li> <li>Scan volume: Up to 20.3 cm (Diameter) x 20.3 cm (Height) [8 x 8 in]</li> <li>Dimensional Accuracy: +         <ul> <li>2.0 mm [+/-0.079 in]</li> <li>Detail resolution: 0.5 mm [0.0197 in]</li> <li>TRIANGLES Per 3D model: Approx. 200K</li> <li>Scan speed: Approx. 12 Minutes</li> <li>Scan per rotation: 800 per rotation</li> </ul> </li> <li>Or Equivalent (compatible with makerbot cloud)</li> </ul>			
13. High Performa Workstat	$O_{1} = \{ 0, \dots, n \}$	Nos	1	

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		Or Equivalent			
14.	GPU	Nvidia GeForce RTX 2080 Ti, 11GB, 3DP, HDMI, USB-C (Precision 3640)	Nos	2	
		Or Equivalent: Compatible with Serial 2 (Workstation)			
Total					

Firm Name:		
Signature:	 -	
Name:	 -	
Designation:		

Tender No	
Name of the Firm	 
Firm Address	 
Date	 
Telephone No	
E-Mail	 

Τo,

DD SCM Office NUTECH University I-12, Main IJP Road, Islamabad.

Dear Sir

1. I / We hereby offer to supply to the NUTECH University the stores detailed in schedule to the tender inquiry or such portion thereof as you may specify in the acceptance of tender at the price offered against the said schedule and further agree that this offer will remain valid up to 90 days after opening of Financial offer and will not be withdrawn or altered in terms of rates quoted and the conditions already stated therein or on before this date. I / we shall be bound by a communication of acceptance to be dispatched within he prescribed time.

2. I / we have understood the instructions to Tenders and General Conditions Governing Contract available at NUTECH website and have thoroughly examined the specifications / drawing and / or patterns quoted in the schedule here to and am/are fully aware of the nature of the stores required and my/ our offer is to supply stores strictly in accordance with the requirements.

Yours Faithfully.

(Signature of Tenderer) Designation Date:

Individual signing tender and / or other documents connected with a contract must be signed by principal authorized rep/ OEM rep/ Authorized partner firm rep.

#### SPECIMEN FOR "ADVANCE PAYMENT BANK GUARANTEE"

Guarantee No:	Date	Amount:	Valid upto:	
In Favour of:				
National Univer	sity of Technology	(NUTECH), IJP Road, I	-12, Islamabad	
Subject: <u>Adva</u>	nce Payment Ban	<u>k Guarantee</u>		
Contract No:	DATE	D		

Dear Sir,

1. We [Name of Guarantor] understand that you have entered into contract with <u>M/S [Name of Firm]</u> (hereinafter called Our Client), for provision of [Name of Stores]. And as per the above mentioned Contract, you are liable to pay to Our Client an amount of [Amount of Guarantee] in advance, which shall be released against a Bank Guarantee. 2. Bank & seller firm shall inform your office regarding termination of the validity of this bank Guarantee one clear month before the actual expiry date of this Bank Guarantee.

3. Now, we hereby irrevocably undertake to immediately make payment on to your orders, merely upon receipt of your first written notice, an amount not exceeding [Amount of Guarantee] that may be claimed by you at your own discretion without it being necessary for you to prove or even assert to the Bank any default whatsoever of Our Client under the Contract.

4. Claims against this Guarantee shall be lodged on us through written request/s on your proper Letter Head. Unless claims are not presented on or before the Validity Date, all rights and benefits under this guarantee shall be forfeited and we shall be released from all claims, demands or liabilities of any kind whatsoever.

5. This Guarantee shall remain in force up to the above mentioned Validity Date which can however, be extended upon request of Our Client.

Yours faithfully,

Signature:\_\_\_\_\_

Name:\_\_\_\_\_

Designation:

Bank Stamp:

## "SPECIMEN FOR BANK GUARANTEE AGAINST PERFORMANCE/WARRANTY

## GUARANTEE"

Guarantee No: \_\_\_\_\_Date\_\_\_\_\_ Amount: \_\_\_\_\_ Valid upto: \_\_\_\_\_

In Favour of: National University of Technology (NUTECH), IJP Road, I-12, Islamabad

## Subject: In compliance with terms of Performance/Warranty Guarantee Bank Guarantee

Contract No: \_\_\_\_\_ dated\_\_\_\_\_

Dear Sir,

1. Whereas your good-self have entered into Contract No\_\_\_dated\_with M/s [Firm Name] Located at [Firm Address], Herein after referred to as our customer and that one of the conditions of the Contract is submission of Bank Guarantee by our customer to your good-self for a sum of [Amount].

2. Incompliance with this stipulation of subj contract, we hereby agree and undertake as under:-

- To pay to you unconditionally on demand and / or without any reference to our Customer an amount not exceeding the sum of [Amount] as would be mentioned in your written Demand Notice.
- b. To keep this Guarantee in force till [Validity Date].
- c. That the validity of this Bank guarantee shall be kept two clear year ahead of the original / extended delivery period or the warrantee of the stores which so ever is later in duration on receipt of information from your office. Our liability under this Bank Guarantee shall cease on the closing of banking hours on the last date of validity of this Bank Guarantee. Claim received there after shall not been entertained by us whether you suffer a loss or not. On receipt of payment under this Guarantee, this documents i.e., Bank Guarantee must be clearly cancelled, discharged and returned to us.
- d. That we shall inform your office regarding termination of the validity of this bank Guarantee on clear month before the actual expiry date of this Bank Guarantee.
- e. That with the consent of our customer you may amend / alter any term / cause of the contractor add / delete any term / clause to / from this contract without making any reference to us. We do not reserve any right to receive any such amendment / alternation or addition / deletion

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provided such like actions do not increase our monetary liability under this Bank Guarantee which shall be limited only [Amount

- f. That the bank guarantee herein before given shall not be affected by any change in the constitution of the Bank or Customer / Supplier or Vendor.
- g. That this is an unconditional Bank guarantee, which shall been cashed on sight on presentation without any reference to our Customer / Supplier or Vendor.

Signature\_\_\_\_\_

Name\_\_\_\_\_

Desig\_\_\_\_\_

Bank Stamp\_\_\_\_\_

Note: No changes in the above given BG format shall be accepted.

#### "SELLER'S WARRANTY CERTIFICATE"

(To be provided on stamp paper) Dated:

Contract No:

Validity \_\_\_\_\_ years from the date of final acceptance of the Stores. We hereby guarantee that we are the genuine and original Source of provisioning the Stores to our Buyer. We also undertake that nothing in the manufacturing of these Stores has been obtained through unauthorized means.

1. We hereby warrant and undertake that the Stores and all the associated spares/ accessories supplied under the terms and conditions of the above Contract, are:

- a. brand new, complete in all respects, possessing good quality and standard workmanship; and
- b. liable for replacement/rectification free of charge, if during the Warranty period the same are found defective before or under normal use or these do not remain within the limits and tolerances stated under the specifications or in any way not in accordance with the terms of this Contract. All expenses incurred in removal, reprovisioning and reinstallation of such defective Stores or their parts shall also be borne by us.

2. The Warranty shall remain valid for a period of \_\_\_\_\_ years from the date of final acceptance of the Stores.

Signature & Stamp	
Name & CNIC	
Designation:	
Date:	

\*\*Sellers warranty must be provided by the Seller (firm) on Rs 100 stamp paper along with bank guarantee/CDR/Pay Order without changing a word. BG with additional clauses will be rejected.

#### <u>CHECK LIST</u>

## (This checked list must be attached with your technical offer, duly filled and

#### Signed by authorized signatory)

Tender No\_\_\_\_\_

Date\_\_\_\_\_

1	Tender Processing	a. Tender processing fee ref no			
	Fee	b. Bank	_		
		c. Amount	_		
2	EM/ Bid Bond	a. EM/ Bid Bond ref no	a. EM/ Bid Bond ref no		
		b. Bank		_	
3	Form Annex A, A-1,	B and C signed by Authorized	Yes	No	
	Signatory				
4	Offering specification	n of items as per IT	Yes	No	
5	Quoted Currency as	per IT	Yes	No	
6	Accounting unit/Qty as per IT		Yes	No	
7	Delivery Schedule as per IT		Yes	No	
8	Country of origin of store				
9	Name of OEM:				
10	Original Performa invoice (Mandatory) Yes No			No	
11	1 Certified that there is no Deviation from IT conditions/ Yes			No	
	there is deviation from IT condition as per fol details				
12	Blacklisting certificat	e.	Yes	No	
13	Verifiable OEM Cert	ficate	Yes	No	
14	Warranty Period as	per IT	Yes	No	
15	ATPs provided		Yes	No	

Note: Fill and/or mark Yes/No where required

Signature of Firm Auth Signatory