

Tender No:

KDU/PRO/CAP/C/179/2023



General Sir John Kotelawala Defence University,  
Kandawala Estate, Ratmalana,  
Sri Lanka.  
T: Phone: 2632028 , 2622995  
Fax : 2622504, 2623599  
Web:www.kdu.lk

09.08.2023

## **INVITATION TO BID AND GENERAL CONDITIONS OF TENDER**

1. The Vice Chancellor of the General Sir John Kotelawala Defence University, as the Chairman, Department Procurement Committee Invites Bid/s from prospective Bidders for supply of **item/s listed in the schedule in Annex "A". The relevant specifications of the item/s are indicated in Annex "B".**

2. **CLOSING DATE & TIME.** The tender will close at 1000 hrs. on **31.08.2023**. Any Bid submitted after the closing time of the tender will be rejected & unopened such bids will be returned to the bidder.

3. **VALIDITY OF BID.** The bid submitted under this tender **must be valid for a minimum period of 90 days from the date of closing of tender.**

4. **BID BOND / GUARANTEE.**

(a) If the quoted bid value exceeds Rs: 2,000,000.00, such Bids should be accompanied with 1% of Bid Value an "on demand" and "unconditional" Bid Bond/Guarantee for a sum of Rs: ..... in the format given in Annex "C" through a recognized local Bank or Insurance Company registered in Sri Lanka which is authorized by the Insurance Board of Sri Lanka to issue such Bid Guarantees. All Bid Bond/Guarantees should be valid for at least 30 days more than the validity period of bids, ie, for 79 days from the date of Bid opening. **Cheques will not be accepted as Bid Guarantee.**

(b) Submission of insufficient Bid Bond/Guarantee value or period will be considered as a "**major deviation**" and such offer will not be considered for further procurement action and will be rejected.

5. **VALUE ADDED TAX.** The Bidders who bid for locally delivered items must have the VAT registration. The VAT portion must be shown separately in the price schedule in Annex "A" and VAT registration number must be indicated. If the quoted item is exempted from VAT or Bidding Company is not liable for VAT, reference number and date of relevant Act number/Gazette notification/a certificate (as applicable) **issued for the current financial year** from the Commissioner General of Inland Revenue to that effect should be submitted along with the Bid.

6. **BID SUBMISSION.** The **bidder must duly sign at the bottom of Annex 'A' of this document** indicating the name of the signatory and the name of the company & place the company common seal to confirm the acceptance of tender conditions. **The Bid/s that do not include authorized signature will be rejected.** The Bid/s duly signed by the bidder enclosed and sealed in an appropriate cover addressed to the following address should be sent by registered post or could be deposited in the **appropriate tender box placed at General Sir John Kotelawala Defence University, Kandawala Estate, Ratmalana** (at the Main Entrance of General Sir John Kotelawala Defence University) on or before the time & date specified for the closing of tender. **The tender reference number, date & time of closing tender should be indicated & underlined at the top left corner of the envelop.**

**Tender Ref No** : .....

**Closing Date & Time** : .....

The Chairman,  
Department Procurement Committee,  
General Sir John Kotelawala Defence University,  
Kandawala Estate, Ratmalana,  
Sri Lanka.

7. The Bid/s must be submitted in the attached schedule of prices in Annex "A" as applicable. However, bidders could use similar formats prepared with their own letter heads with all the details mentioned therein and submit in **three copies along with duly signed copy of a General Conditions of tender.** The Bid/s must contain **Technical Literature, Pamphlets, Drawings and Quality Standard Certificate etc** necessary to determine characteristics of items offered and in case of Machinery/Vehicles & Equipment, servicing and workshop data/after sales service, back up facilities or any other facilities provided by the supplier.

8. **SUBMISSION OF SAMPLES/PAYMENT OF TESTING CHARGES.**

When it is required to submit samples, **every offer** must be accompanied with pre - marked samples. The marking of samples **indicating the Bidder & Offer number** must be done and the samples must be handed over to the officer at same place where tender box is placed **on or before the closing date & time of the Bid.** Samples submitted after closing time of the Bid will be rejected. The documents such as Air Way Bills etc, will not be accepted in place of samples. When the testing charges are required to be paid, bidders shall pay testing charges separately **for all offers** indicated in their bid/s.

(1) **Samples.** Please submit ..... samples.

(2) **Testing Charges.** A sum of Rs. .... **per offer** must be paid to the Bursar of KDU, prior to the submission of bid and a copy of the receipt must be annexed to the bid. It is the responsibility of bidder to inform the Cashier of the Account Office to note the tender number on the receipt issued for such payments.

8. **BID OPENING.** All duly received bids **will be opened immediately after the scheduled closing time of Bids at the same venue.** Bidders or their accredited agents could be present at the time of opening of bids.

9. **PRICES.**

For locally delivered items (including locally manufactured items & foreign items imported by the bidders) price must be quoted in Sri Lankan Rupees, inclusive of all charges for delivery of items to General Sir John Kotelawala Defence University Ratmalana, Faculty of Allied Health Science (FAHS) Werahera and University Hospital Werahera or Southern Campus Sooriyawewa. **Unit price, VAT and Total price should be clearly indicated in schedule in Annex "A"**. Other than VAT, all other type of taxes (eg : NBT, BTT, etc.) should not be indicated separately and should be included in unit price.

10. **RESTRICTED TENDERS.**

Invitation to Bids are circulated among the registered suppliers with Ministry of Defence (MOD), only bids submitted by registered suppliers will be allowed for consideration. However, Chairman, Department Procurement Committee reserves the right to invite the bids from multiple combinations of Procurement Methods as stipulated in Chapter III of the Government Procurement Guideline, 2006 to ensure highest competitiveness.

11. **PERFORMANCE BOND/GUARANTEE.** A successful bidder shall furnish a Performance Bond/Guarantee in the form of "On Demand" & "Unconditional" Bank/Insurance Guarantee for amount equivalent to 10% of the contract value for every contract that exceeds Rs. 2,000,000.00 or equivalent amount in foreign currency through a recognized Commercial Bank registered in Sri Lanka or through an Insurance Company authorized by the Insurance Board of Sri Lanka to issue such Performance Guarantee for this purpose, **within two weeks from the date of notification of award. VALIDITY PERIOD OF THE PERFORMANCE GUARANTEE/SECURITY SHOULD BE COVERED WARRANTY PERIOD + 28 DAYS.** The proceeds of the Performance Bond/Guarantee shall be payable to the Vice Chancellor of the General Sir John Kotelawala Defence University as compensation for any loss resulting from the supplier's failure to complete his performance obligations under the contract. If the contracted supplier fails to deliver the items on time or fails to complete the works as per the agreed contract, **THE TOTAL VALUE OF THE PERFORMANCE BOND/GUARANTEE** will be forfeited. If only partial delivery is made during the agreed contract period, the corresponding value percentage of undelivered quantity from the Performance Bond/Guarantee will be forfeited

12. **SIGNING OF CONTRACT.**

The notification of award will be transmitted to the successful bidder by post, by fax or e-mail. This notification constitutes the formation of the contract. The successful bidder should submit his written acceptance for the award and performance bond / guarantee (For awards over Rs. 500,000.00 without VAT) within 14 days of receipt of such notification. Upon acceptance of the award and furnishing of the Performance Bond/Guarantee, the successful bidder will have to enter into a formal contract with the Vice Chancellor of the General Sir John Kotelawala Defence University by signing the Contract.

13. **DELIVERY.**

Preference will be given for early delivery. In case of bulk supplies for locally manufactured items, the delivery of **total quantity must be completed within 120 days of signing of contract**, unless mutually agreed for extended delivery period with General Sir John Kotelawala Defence University. **The bidder/s must indicate the proposed delivery schedule in Annex "D"**. In the event of placing a purchase order with the successful bidder, the total quantity so ordered must be supplied as one consignment unless part deliveries are agreed upon in the contract. The deliveries not made as per agreed delivery schedule will be considered as bad performances by the suppliers and **no extended delivery period will be authorized**. Under extreme unavoidable conditions too, the Chairman, Department Procurement Committee (Vice Chancellor of the General Sir John Kotelawala Defence University) reserves the right to grant or refuse delivery period extensions only within the current financial year with or without liquidated claim for delayed deliveries and that decision will be final.

14. **LIQUIDATED DAMAGES.**

In case of delivery period extensions requested by the successful bidder, a sum equivalent to 1% of the total value of the delayed supply per delay of one week or part thereof may be deducted from the payment due to the supplier from the General Sir John Kotelawala Defence University as liquidated damages up to the maximum limit of 12% of the total value of delayed supplies.

15. **PAYMENT TERMS FOR LOCALLY DELIVERED ITEMS.**

Payment will be made after acceptance of items which should be subjected to a pre-acceptance inspection/testing by General Sir John Kotelawala Defence University authorities. The delivery made to the General Sir John Kotelawala Defence University should not be considered as quantities taken over by General Sir John Kotelawala Defence University until items are properly accepted after pre-acceptance inspection. Any item that does not conform to the specifications or already approved sample will be rejected & it is the responsibility of the supplier to remove them from General Sir John Kotelawala Defence University stores/premises within 07 working days of such intimation (either verbal or written) at his own cost and replace them with items conforming to specification within one month of such rejection. The bidder shall allow approximately 30-45 days' period of credit from the date of acceptance of items for Account Office, General Sir John Kotelawala Defence University to obtain liquid cash from General Treasury & release the payment.

16. **RIGHTS OF THE PROCUREMENT COMMITTEE.**

The Department Procurement Committee reserve the right to accept or reject whole or part of this tender and their decision will be final. The successful bidders will be notified. Information with regard to rejected or unsuccessful bids will not be communicated.

Thanking You,  
Yours faithfully,



TSK Lankeshwara Lsc  
Lieutenant Commander (S)  
for Vice Chancellor  
General Sir John Kotelawala Defence University

**SCHEDULE OF PRICES FOR LOCALLY DELIVERED ITEMS**

S/N	ITEMS	DENO	QTY	PRICE EACH SLRS	TOTAL PRICE SLRS
<b><u>PURCHASE OF LAB ITEMS FOR FACULTY OF COMPUTING</u></b>					
01	Dosimeter	No	01		
02	Biomedical Repair Tool Kit	No	02		
03	Gas Flow Analyzers and Ventilator Testers	No	01		
04	Discovery Kit with STDiscovery kit with STM32F407VG MCU	No	15		
<i>Attached The Specifications</i>					
TOTAL					
DISCOUNT					
TOTAL(AFTER DISCOUNT)					
VAT %					
<b>GRAND TOTAL</b>					

**(A) OTHER DETAILS**

- (i) DELIVERY PERIOD - .....
- (ii) MAKE & MODEL - .....
- (iii) VALIDITY PERIOD - .....
- (iv) WARRANTY PERIOD - .....
- (v) PAYMENT TERMS - CREDIT
- (vi) COUNTRY OF ORIGIN - .....
- (vii) DISCOUNT IF ANY - .....
- (viii) ANY OTHER TAXES - .....

**(B) VAT DETAILS - VALUE ADDED TAX PERMANENT REGISTRATION CERTIFICATE / VAT EXEMPTION LETTER ISSUED BY DEPARTMENT OF INLAND REVENUE TO BE ATTACHED**

**(C) PLACE OF DELIVERY - ITEMS TO BE DELIVERED TO THE "GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY, KANDAWALA STATE, RATMALANA ALONG WITH THE COPY OF ORDER AND RELEVANT INVOICE.**

**(D) Any queries / information with regard to this procurement / tender could be obtained from Officer Commanding Logistics Services office at General Sir John Kotelawala Defence University through e-mail [ocls@kdu.ac.lk](mailto:ocls@kdu.ac.lk) and by telephone number 0112622504 during working hours.**

**NOTE: UNIT PRICE AND TOTAL PRICE ARE TO BE INDICATED CLEARLY IN THE TENDER, IF NOT QUOTATION WILL BE REJECTED.**

SUPPLIER NAME - .....  
 ADDRESS - .....  
 CONTACT NUMBER - .....  
 E MAIL ADDRESS - .....



**(E) Bid Reference: KDU/PRO/CAP/C/179/2023**

.....  
 DATE

I/We agree to abide by the condition of No 01-16 bidding document and undertake to supply the items as per delivery schedule mentioned in the contract, in the event of an order been placed with me/my firm/company as a result of this tender.

..... Signature.  
 ..... Name of Signatory  
 ..... Name of the Company/Bidder



Date :- .....

Technical Specifications

Dosimeter for Nuclear Radiation Detection

Item Code: KDU – Dosimeter for Nuclear Radiation Detection

Description- A radiation dosimeter is a device that measures dose uptake of external ionizing radiation.

Quantity – 1

1	2	3	4	5	6	
KDU Requirements		Priority <sup>2</sup>	Conformity		Proof <sup>4</sup>	Bidder's Offer <sup>1</sup>
Specifications			Yes	No		
1.	Geiger counter nuclear radiation detector with built-in GM sensor, fast response time and high accuracy, able to detect Gamma, Beta and X-rays.	C				
	Alarm setting option to set the current dose alarm value and the accumulated dose alarm value.	C				
	Multifunctional Geiger Counter should have various setting, such as alarm setting, system clock setting and unit setting & language change, can operate in English. Should be easy one-handed operation.	C				

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	<p>Working Principle should be uses a Geiger-Miller counter. Counter for detecting the intensity of ionizing radiation (Beta particles, Gamma rays and x-rays). Use a gas tube or a small chamber as a probe.</p>	C														
	<ul style="list-style-type: none"> <li>• Can be applied in the environment where existing ionize radiation. Such as hospital improvement radiation, radiology departments, radiology laboratories and so on</li> </ul>	C														
	<ul style="list-style-type: none"> <li>• Size: 120x78x27mm approximately</li> </ul>	C														
	<ul style="list-style-type: none"> <li>• Detector: Energy Compensation GM Tube</li> </ul>	C														
	<ul style="list-style-type: none"> <li>• Dose equivalent rate: 0.0-1000<math>\mu</math>Sv/h(10mSv/h) approximately</li> </ul>	C														
	<ul style="list-style-type: none"> <li>• Cumulative dose equivalent: 0.00<math>\mu</math>Sv-500.0mSv approximately</li> </ul>	C														
	<p>Energy range: 48keV-1.5Mev<math>\leq</math><math>\pm</math>30% (for <math>^{137}\text{Cs}</math>) approximately</p>	C														
	<p>Sensitivity: 80CPM/<math>\mu</math>Sv(For Co-60 approximately</p>	C														
	<ul style="list-style-type: none"> <li>• Power supply: 1200mAh lithium battery</li> </ul>	C														
	<ul style="list-style-type: none"> <li>• Alarm method: light, vibration, sound</li> </ul>	C														

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 10/10/2019

	All brands should be complied with ISO & CDDA/NMRA standards. It is required to provide relevant certificates given for manufacture with bid bond.	C				
2.	<p><b>ELECTRICAL CHARACTERISTICS</b></p> <p>a. The unit operating voltage should be 230 +/- 10% and 50 Hz</p> <p>b. Protection against over voltage and over current line condition.</p> <p>c. Compliance with applicable current IEE regulations, EC directives, SriLanka standard and regulations. All associated components shall carry the CE marking on them.</p> <p>d. The equipment shall have protection against electric shock "Class I" and "Type CF".</p>	C				
3.	<p><b>TRAINING</b></p> <p>Supplier should agree to provide training on operating, service, repairing and maintenance at least 02 persons.</p>	C				
4.	<p><b>SPARE PARTS</b></p> <p>a. Local agents to stock and supply spare parts for five years from the date of supply. Supplier should submit necessary list of spare parts, with part numbers.</p>	C				
5.	<p><b>REPAIRS/AFTER SALES SERVICES</b></p>	C				



	<p>a. Supplier should have capability to provide repair and servicing for the equipment quoted.</p> <p>Free service during warranty period to be provide.</p>					
6.	<p><b>Warranty, Services Agreements and Documentation</b></p> <p>i. Comprehensive on-site manufacturer authorized warranty for <b>36 months</b> (Labour &amp; Parts) Excluding Consumes.</p> <p>ii. Bidder or it's parent company or it's subsidiary should have Island-Wide owned branch network.</p> <p>iii. Documentary evidence to be provided of the following under bidders' name. (a) Address, Contact Details &amp; Date of Commencement of each branch/regional office (Should have completed minimum of 5 years from the Date of Commencement of each branch/regional office)</p> <p>iv. Warranty information: Supplier name, contact numbers, date of commissioning hardware, warranty period.</p>	C	C	C	C	
7.	<p><b>MISCELLANEOUS</b></p> <p>a. Installation and testing to be done by supplier free of charge.</p> <p>b. Supplier is required to provide samples for the evaluation and inspection/demonstration/field trial at the time of bid opening or whenever requested by the <b>KDU</b>. Cost of Samples and other expenses/damages occurred during field trials/demonstration should be borne by the supplier.</p>	C	C			

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	<p>c. Supplier should specify the stock availability. Supplier should specify the delivery period.</p>	<p>C C</p>			
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Make & Model: .....  
Country of Manufacture: .....

Relevant catalogues & technical information attached.  
Information given under "Bidder's Offer" is true and correct.

Bidder's Name, signature & Date

Company seal

<sup>1</sup> Bidder shall fill in Col. 4, 5 & 6

<sup>2</sup> Purchaser will mark C for critical requirements

<sup>3</sup> If the bidder has marked No for Conformity, bidder shall provide information in this column of his offer against the clause concerned in col. 2 (Purchaser's requirements). If the bidder has marked Yes, Bidder has the option of providing additional information to establish that it conforms to the specification given

<sup>4</sup> Bidder shall include proof to support the conformity of the specification e.g. document and the page number in the original user/service manual mentioning the specification.





**Technical Specifications**

**Biomedical repair tool kit**

**Item Code:** KDU – Biomedical repair tool kit

**Description-** Complete set of biomedical repair tools

**Quantity** – 2 unit

1	2	3	4		5	6
	<b>KDU Requirements</b>					<b>Bidder's Offer<sup>1</sup></b>
		<b>Priority<sup>2</sup></b>	<b>Conformity</b>		<b>Proof<sup>4</sup></b>	<b>Remarks<sup>3</sup></b>
			Yes	No		
1.	<b>Components</b> One unit shall consist of <ul style="list-style-type: none"> <li>• 5pc Needle File Set</li> <li>• Contact Burnisher</li> <li>• 5" Semi Cutter</li> <li>• 6" Slip Joint Pliers</li> <li>• 6" Long Nose Plier w/cut</li> <li>• 6" Hemostat, Straight</li> <li>• Snapping Pliers, Int/Ext, .038" Tips</li> <li>• Flush Cutter 5 In.</li> <li>• 5" Long Nose Pliers ESD</li> <li>• Rapidaptor Blade Holding Regular Handle 4"</li> <li>• Nutdriver Power Blade 3/16"</li> <li>• Nutdriver Power Blade 7/32"</li> </ul>	C				

- Nutdriver Power Blade 1/4"
- Nutdriver Power Blade 9/32"
- Nutdriver Power Blade 5/16"
- Nutdriver Power Blade 11/32"
- Nutdriver Power Blade 3/8"
- 1/4" Dr 4" Rapidaptor Blade Extension
- Lead Free Solder Pack
- Soldering Iron 25-watt
- Metal Desoldering Pump
- Slim-line Scissors 5 1/2"
- Screwdriver, Phillips #1x3"
- Screwdriver, Phillips #2x4"
- Screwdriver, Slotted 3/32"x3"
- Screwdriver, Slotted 1/4"x5"
- Screwdriver, Slotted 3/16"x4"
- 4-in-1 Stubby Screwdriver
- 6pc. Jeweler's SD Set
- Screwdriver, Slotted 1/8x2"
- Screwdriver, Phillips #0x2"
- Screw Holding Driver, 3/16x6
- Screw Starter F-2
- Offset Screwdriver, Slotted & Phillips
- 8pc Ignition Wrench Set, SAE
- Adj. Wrench 8" Crescent
- BE 13pc Hex Key Set SAE
- Steel Ruler 6" w/Clip
- Pocket Level 500
- Combination Spring Hook
- Nylon Brush 16.099
- LED Aluminum Flashlight
- Inspection Mirror A-2
- Magnetic Pick-up Tool, Telescoping

C



	<ul style="list-style-type: none"> <li>• Pin Punch 3/32" 75B</li> <li>• Pocket Scribe 83</li> <li>• Lt.wt. Knife</li> <li>• 1 Oz. Oiler 1 Oz.</li> <li>• Adj. Wirestripper</li> </ul>					
2.	<p><b>Warranty, Services Agreements and Documentation</b></p> <p>i. All sub items described in this schedule should be covered by a warranty for a period of not less than <b>3 years</b> from the date of successful commissioning of the equipment including for any defect in manufacturing process, and all accessories.</p> <p>ii. The technology manuals having full details of operations, and maintenance in the English language must be made available in duplicate at the time of commissioning.</p> <p>iii. <b>Spares / replaceable items</b> required for the kit must be guaranteed for supply over a period of 5 years from the date of commissioning. The <b>price list</b> for such items over a period of 5 years from the date of commissioning should be made available.</p> <p>iv. The successful bidder shall also commission the equipment at Faculty of Technology KDU.</p>	C	C	O	C	

Make & Model: .....

Country of Manufacture: .....

Relevant catalogues & technical information attached.  
Information given under "Bidder's Offer" is true and correct.

Bidder's Name, signature & Date

Company seal

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<sup>1</sup> Bidder shall fill in Col. 4, 5 & 6

<sup>2</sup> Purchaser will mark C for critical requirements and O for optional requirements.

<sup>3</sup> If the bidder has marked No for Conformity, bidder shall provide information in this column of his offer against the clause concerned in col. 2 (Purchaser's requirements). If the bidder has marked Yes, Bidder has the option of providing additional information to establish that it conforms to the specification given

<sup>4</sup> Bidder shall include proof to support the conformity of the specification e.g. document and the page number in the original user/service manual mentioning the specification.



**Technical Specifications**

**Gas Flow Analyzer / Ventilator Tester**

**Item Code: KDU – Gas Flow Analyzer / Ventilator Tester**

**Description-This Device is to accurately test gas flow equipment including ventilators with the all-in-one**

**Quantity - 1**

1	2	3	4	5	6	
KDU Requirements		Priority <sup>2</sup>	Conformity		Proof <sup>4</sup>	Bidder's Offer <sup>1</sup>
			Yes	No		
1.	<p><b>Specifications</b></p> <p>The Gas Flow Analyzer should offers high accuracy and reliability for gas flow and respiratory medical equipment, including neonatal, mechanical and high-frequency ventilators.</p> <p>This tester should be perfect for both clinical and field environments where AC power may not be available, but high accuracy is needed.</p> <p>Approximately 7" (17.8 cm) touchscreen display</p> <p>Should view multiple measurements at once and quickly access to the menu options. Review results in real-time with either colour graphs or numerical data. The global user interface makes operating this device straightforward and uncomplicated.</p>	C				
		C				
		C				
		C				

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	Should Reduce testing time with built-in line sensors which automatically test humidity temperature and oxygen while compensating for atmospheric pressure and environmental conditions			
	The large onboard memory should be available. Simply save and transfer the data via USB to a PC and upload the test file to your CMMS for easy documenting and reporting.	C		
	Easily transport and store the lightweight	C		
	Reduce testing time with built-in line sensors which automatically test humidity temperature and oxygen while compensating for atmospheric pressure and environmental conditions	C		
	Battery life hours 8 hrs approximately	C	8 hrs	
	Charge time in hours 5 hrs approximately	C		
	Should have Internal Memory	C		
	<b>Flow</b> <ul style="list-style-type: none"> <li>• Range 0 to ±200 slpm</li> <li>• Accuracy ±2.0% of rdg or 0.04 slpm</li> <li>• Range 200 to 300 slpm, -200 to -300 slpm, -22 to -14 slpm, +7.5 to +9.5 slpm</li> <li>• Accuracy ±2.5% of rdg</li> </ul>	C		
	<b>Volume</b>	C		

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	<ul style="list-style-type: none"> <li>• Range + -100</li> <li>• Accuracy ±2.0 % or 0.02 l</li> </ul>					
	<p><b>PRESSURE</b></p> <p><b>High pressure</b> Range -0.8 to 10 bar Accuracy ±1 % or ±0.007 bar</p> <p><b>Differential low pressure</b> Range ±160 mbar Accuracy ±0.5 % or ±0.1 mbar</p> <p><b>Ultra-low pressure</b> Range 0 to 10 mbar Accuracy ±1 % or ±0.01 mbar</p> <p><b>Airway pressure</b> Range ±160 mbar Accuracy ±0.5 % or ±0.1 mbar</p> <p><b>Barometric pressure</b> Range 550 to 1240 mbar Accuracy ±1 % or ±5 mbar</p> <p><b>Temperature</b> Range 0 to 50 °C</p>	C				

  
 H.D. Ullal, Jyoti Institute of Technology

Accuracy	±0.5 °C					
Resolution	0.1 °C					
<b>Humidity</b>		C				
Range	0 to 100 % RH					
Accuracy	±3 % RH (20 to 80 % RH) ±5 % RH (20 < or > 80 % RH)					
<b>Oxygen</b>		C				
Range	0 to 100 %					
Accuracy	±1 %					
<b>Breath parameters</b>						
Inspiratory tidal volume range	0 to 60 l	C				
Inspiratory tidal volume accuracy	±2.0 % or 5 ml	C				
Expiratory tidal volume range	0 to 60 l	C				
Expiratory tidal volume accuracy	±2.0 % or 5 ml	C				
Minute volume range	0 to 100 l	C				
Minute volume accuracy	±2.0 % or 5 ml	C				
Breath rate range	1 to 1500 bpm	C				

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Breath rate accuracy	±1 %	C			
Inspiratory to expiratory time ratio (I:E) range	1:300 to 300:1	C			
Inspiratory to expiratory time ratio (I:E) accuracy	±2 % or 0.1	C			
Peak inspiratory pressure (PIP) range	±160 mbar	C			
Peak inspiratory pressure (PIP) accuracy	±0.75 % or 0.1 mbar	C			
Inspiratory pause pressure range	±160 mbar	C			
Inspiratory pause pressure	±0.75 % or 0.1 mbar	C			
Mean airway pressure range	±160 mbar	C			
Mean airway pressure accuracy	±0.75 % or 0.1 mbar	C			
Positive end expiratory pressure (PEEP) range	±160 mbar	C			
Positive end expiratory pressure (PEEP) accuracy	±0.75 % or 0.1 mbar	C			

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Lung compliance range	0 to 1000 ml/mbar	C			
Lung compliance accuracy	±3 % or 0.1 ml/mbar	C			
Inspiratory time range	0 to 60 s	C			
Inspiratory time accuracy	0.02 s	C			
Inspiratory hold time range	0 to 60 s	C			
Inspiratory hold time accuracy	1 % or 0.1 s	C			
Expiratory time range	0 to 90 s	C			
Expiratory time accuracy	0.5 % or 0.01 s	C			
Expiratory hold time range	0 to 90 s	C			
Expiratory hold time accuracy	0.02 s	C			
Peak expiratory flow range	±300 lpm	C			
Peak expiratory flow accuracy	±2.0 % or 0.04 lpm	C			
Peak inspiratory flow range	±300 lpm	C			

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 [Signature]  
 10/10/2010

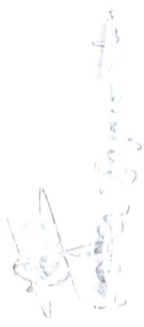
Peak inspiratory flow accuracy	±2.0 % or 0.04 lpm					
Operating Temp 10 to 30c		C				
<b>Gas Correction</b>						
ATP (ambient temp/pressure, actual humidity)	:Air	}	}	}	}	}
ATPD (ambient temp/pressure, dry)	:Nitrogen (N2)					
ATPS (ambient temp/pressure, saturated)	:Nitrous Oxide (N2O)					
STP20 (20 °C temp/pressure 760 mmHg, actual humidity)	:Carbon Dioxide (CO2)					
STP21 (21 °C temp/pressure 760 mmHg, actual humidity)	:Oxygen (O2)					
STPD0 (0 °C temp/pressure 760 mmHg, dry)	:Argon					
STPD20 (20 °C temp/pressure 760 mmHg, dry)	:Heliox (21 % O2, 79% He)					
STP or STPD21 (21 °C temp/pressure 760 mmHg, dry)	:Oxygen/Nitrogen					
BTPS (body temp 37 °C/ambient pressure 760 mmHg, saturated)	:Oxygen/Nitrous Oxide					
BTPD (body temp 37 °C/ambient pressure 760 mmHg, dry)	:Oxygen/Helium					
<b>Should supply following Accessories</b>		C				
	• Portable precision Test Lung	C				
	• Precision Test Lung	C				
	• Flexible tubing	C				

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	<ul style="list-style-type: none"> <li>• Mounting system</li> <li>• Certificate of Calibration with test data</li> <li>• Carrying case</li> <li>• Carrying handle and shoulder strap</li> <li>• USB serial cable</li> <li>• Tilt stand</li> <li>• AC power adapter</li> <li>• Bacterial filter</li> <li>• 1.2 m (4 ft) silicon tubing (2)</li> <li>• 22 mm ID x 22 mm ID tubing adapters (2)</li> <li>• 22 mm OD x 22 mm OD tubing adapters (2)</li> <li>• 15 mm ID x 22 mm ID tubing adapters (2)</li> <li>• DISS hand tight nut/nipple to 6.4 mm (1/4 in ) ID hose barb adapter (1)</li> </ul>	<p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p>				
2.	<p><b>ELECTRICAL CHARACTERISTICS</b></p> <p>d. The unit operating voltage should be 230 +/- 10% and 50 Hz</p> <p>e. Protection against over voltage and over current line condition.</p>	<p>C</p> <p>C</p>				

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	<p>f. Compliance with applicable current IEE regulations, EC directives, SriLanka standard and regulations. All associated components shall carry the CE marking on them.</p> <p>g. d. The equipment shall have protection against electric shock "Class 1" and "Type CF".</p>	C				
3.	All brands should be complied with ISO & CDDA/NMRA standards. It is required to provide relevant certificates given for manufacture with bid bond.	C				
4.	<p><b>TRAINING</b></p> <p>Supplier should agree to provide training on operating, service, repairing and maintenance at least 02 persons. Overseas training should be mention.</p>	C				
5.	<p><b>TECHNICAL LITERATURE</b></p> <p>a. A technical brochure to be supplied with the quotation to support above details.</p> <p>b. Operator hand book should be supplied with machine.</p> <p>c. All literature to be English</p>	C				
6.	<p><b>SPARE PARTS</b></p> <p>b. Local agents to stock and supply spare parts for five years from the date of supply</p> <p>c. Supplier should submit necessary list of spare parts, with part numbers.</p>	C				
7.	<p><b>REPAIRS/AFTER SALES SERVICES</b></p> <p>b. Supplier should have capability to provide repair and servicing for the equipment quoted.</p>	C				



	<p>c. Free service during warranty period to be provide.</p>	C			
8.	<p><b>WARRANTY, SERVICES AGREEMENTS AND DOCUMENTATION</b></p> <p>i. All sub items described in this schedule should be covered by a warranty for a period of not less than <b>10 years</b> from the date of successful commissioning of the equipment including for any defect in manufacturing process, workmanship and all accessories.</p> <p>ii. The technology manuals having full details of installation, operations, service and maintenance in the English language must be made available in duplicate at the time of installation and commissioning.</p> <p>iii. <b>Spares / replaceable items</b> required for the system must be guaranteed for supply over a period of 10 years from the date of installation. The <b>price list</b> for such items over a period of 10 years from the date of installation should be made available.</p> <p>iv. A sample unit must be available for demonstration and performance evaluation at the request of TEC.</p> <p>v. Prospective suppliers must provide documentary evidence of their previous experience with similar units installed in Sri Lanka as well as evidence of the reliability of after-sales services provided.</p> <p>vi. The successful bidder shall also install and commission the equipment at Faculty of Technology KDU.</p> <p>vii. During the warranty period supplier should maintain the accuracy of the machine and annual calibration should be.</p>	C C C C C C C C			

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9.	<b>MISCELLANEOUS</b>								
		d. Installation and testing to be done by supplier free of charge.							
		e. Supplier is required to provide samples for the evaluation and inspection/demonstration/field trial at the time of bid opening or whenever requested by the <b>KDU</b> . Cost of Samples and other expenses/damages occurred during field trials/demonstration should be borne by the supplier.							
		f. Supplier should specify the stock availability.							
		g. Supplier should specify the delivery period.							

Make & Model: .....

Country of Manufacture: .....

Relevant catalogues & technical information attached.

Information given under "Bidder's Offer" is true and correct.

Bidder's Name, signature & Date

Company seal

<sup>1</sup> Bidder shall fill in Col. 4, 5 & 6

<sup>2</sup> Purchaser will mark C for critical requirements



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<sup>3</sup> If the bidder has marked No for Conformity, bidder shall provide information in this column of his offer against the clause concerned in col. 2 (Purchaser's requirements). If the bidder has marked Yes, Bidder has the option of providing additional information to establish that it conforms to the specification given

<sup>4</sup> Bidder shall include proof to support the conformity of the specification e.g. document and the page number in the original user/service manual mentioning the specification.

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**Technical Specifications**

**Discovery kit with STM32F407VG MCU**

**Item Code: KDU – STM32F4DISCOVERY**

**Description-** The STM32F4DISCOVERY Discovery kit leverages the capabilities of the STM32F407 high-performance microcontrollers, to allow users to develop audio applications easily. It includes an ST-LINK/V2-A embedded debug tool, one ST-MEMS digital accelerometer, one digital microphone, one audio DAC with integrated class D speaker driver, LEDs, push-buttons, and a USB OTG Micro-AB connector.

**Quantity - 12**

1	2	3	4	5		6
				Conformity	Proof <sup>4</sup>	
KDU Requirements		Priority <sup>2</sup>	Yes	No	Bidder's Offer <sup>1</sup>	Remarks <sup>3</sup>
1.	STM32F407VGT6 microcontroller featuring 32-bit Arm® Cortex®-M4 with FPU core, 1-Mbyte Flash memory and 192-Kbyte RAM in an LQFP100 package					
	USB OTG FS	C				
	ST MEMS 3-axis accelerometer	C				
	ST-MEMS audio sensor omni-directional digital microphone	C				
	Audio DAC with integrated class D speaker driver	C				
	User and reset push-buttons	C				

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	Indicator LEDs	C				
2.	<p>Board connectors:</p> <ul style="list-style-type: none"> <li>o USB with Micro-AB</li> <li>o Stereo headphone output jack</li> <li>o 2.54 mm pitch extension header for all LQFP100 I/Os for quick connection to prototyping board and easy probing</li> </ul> <p>External application power supply: 3 V and 5 V</p>	C				
	<p>On-board ST-LINK/V2-A debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port</p>	C				
2	<p><b>Warranty, Services Agreements and Documentation</b></p> <p>i. All sub items described in this schedule should be covered by a warranty for any defect in manufacturing process, workmanship and all accessories.</p>	O				

Make & Model: .....  
Country of Manufacture: .....



Relevant catalogues & technical information attached.  
Information given under 'Bidder's Offer' is true and correct.

Bidder's Name, signature & Date

Company seal

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<sup>1</sup> Bidder shall fill in Col. 4, 5 & 6

<sup>2</sup> Purchaser will mark C for critical requirements, O for optional requirement

<sup>3</sup> If the bidder has marked No for Conformity, bidder shall provide information in this column of his offer against the clause concerned in col. 2 (Purchaser's requirements). If the bidder has marked Yes, Bidder has the option of providing additional information to establish that it conforms to the specification given

<sup>4</sup> Bidder shall include proof to support the conformity of the specification of the specification e.g. document and the page number in the original user/service manual mentioning the specification.



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**SPECIMEN FORM OF BID SECURITY**

) and We (name of bank or insurance company) whose registered office is at ..... (hereinafter called "the Surety") are held and firmly bound onto ..... (hereinafter called the Authority") in the sum of ..... for the payment of which sum the Bidder and the Surety bind themselves their successors and assigns jointly and severally by those presents.

Whereas the authority has invited the Tender and other persons to compete tenders in similar terms for the supply of ..... and to submit the same for the consideration of the Authority, and the Bidder proposes to submit to the Authority a Bid (hereafter called "the Bid") in accordance with such invitation, the Bond shall provide security to the Authority that the Bidder will honour certain obligations to be undertaken by him in the Tender in accordance with the following conditions.

**Now the Conditions of this Bond are:**

- (a) That it shall remain in full force and effect until the earliest of
  - (i) (Date), being ( ) days from (submission date), the date stipulated by the Authority for the submission of tenders, or any prolongation of such date above notified to the Authority by the Bidder and the Surety in writing.
  - (ii) In the event of acceptance of the Tender by the Authority, the date upon which the Bidder provides a performance security to the Authority in accordance with the terms of the contract thereby made between them, or
- (b) Subject to this Bond being in full force and effect, the Surety shall pay the full amount specified in this Bond upon receipt of first written demand form the Authority stating that.
  - (i) The Bidder has withdrawn his Tender during the validity of this Bond, or
  - (ii) The Bidder has failed to provide a performance security to the Authority in accordance with the terms of the tender within 14 days from receipt of intimation of award of the Tender.

No alteration in the terms of the Tender, nor any forbearance of forgiveness in or in respect of neither any matter or thing concerning the Tender on the part of the Authority, nor any objection from the bidder shall in any way release the Surety from any liability under this Bond.

The benefit of this Bond shall not be assignable by the Authority and upon its ceasing to be in full force and effect the Authority shall return the same to the Bidder.

This Bond shall be governed by the laws of Sri Lanka

I executed as a deed on this ( ) day of ( ) 20 ( )

For and on behalf of the Bidder

For and on behalf of the Surety

-----

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-----

-----

Signed by -----

Signed by -----

In the capacity of -----

In the capacity of -----

and by -----

and by -----

In the capacity of -----

In the capacity of -----

Seal (where applicable)

Seal (where applicable)

**DELIVERY SCHEDULE**

(IT IS MANDATORY TO FILL THE FOLLOWING SCHEDULE BY THE BIDDER)

TENDER NO :

ITEM : .....

QTY : .....

DURATION	QTY
EX STOCK QTY (WITHIN 01 WEEK)	
01MONTH	
02 MONTHS	
03 MONTHS	
04 MONTHS	
<b>TOTAL</b>	

NAME OF THE BIDDER : .....

SIGNATURE OF BIDDER : .....

DATE : .....

COMPANY SEAL : .....