

16. ሰነድ ለመስጠት ያለባቸው ድምጽ

ሰነድ ለመስጠት ለሚገባው ሰነድ ተቃራኒ የሆኑ ሁኔታዎችን አይከተልም። ለሰነድ ለመስጠት የሚያስፈልገው ሰነድ ለሌሎች ሰነዶች ለመስጠት የሚያስፈልገውን ሰነድ ከሌሎች ሰነዶች የሚለይ አይደለም።

17. የጥያቄ ለመስጠት ሰነድ

ሰነድ ለመስጠት የሚያስፈልገው ሰነድ ለሌሎች ሰነዶች ለመስጠት የሚያስፈልገውን ሰነድ ከሌሎች ሰነዶች የሚለይ አይደለም።

18. የጥያቄ ደንብ

- ሰነድ ለመስጠት ለሚያስፈልገው ሰነድ ለሌሎች ሰነዶች ለመስጠት የሚያስፈልገውን ሰነድ ከሌሎች ሰነዶች የሚለይ አይደለም።
- $CP = 0.005 \times CP \times LP$
- $CP = (\text{የጥያቄ ደንብ})$
- $LP = (\text{የጥያቄ ደንብ})$
- የጥያቄ ደንብ ለመስጠት ለሚያስፈልገው ሰነድ ለሌሎች ሰነዶች ለመስጠት የሚያስፈልገውን ሰነድ ከሌሎች ሰነዶች የሚለይ አይደለም።

19. የጥያቄ ደንብ

- የጥያቄ ደንብ ለመስጠት ለሚያስፈልገው ሰነድ ለሌሎች ሰነዶች ለመስጠት የሚያስፈልገውን ሰነድ ከሌሎች ሰነዶች የሚለይ አይደለም።

20. የጥያቄ ደንብ

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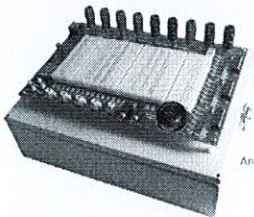


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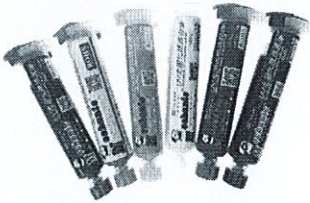



TENDER: MNU-CA-PAMD/2022/039 SPECIFICATIONS

#	Item description	Specification	Qty
EQUIPMENT AND DEVICES			
1	Motherboard for simulation	<p>CPU support: Intel 12th Gen Socket: LGA 1700 Form factor: ATX Chipset: Intel Z690 Memory support: 4 DIMMs, Dual Channel DDR5-6400+MHz(OC) RAM Memory maximum size: 128GB DIMMs, Dual Channel DDR5-6400+MHz(OC) Expansion slots: 1x PCIe 3.0 x16 slot 1x PCIe 3.0 x1 slot Graphics interface: 1x PCIe 5.0 x16 slot 1x PCIe 3.0 x16 slot Supports AMD® CrossFire™ Technology Display interface: Support 4K@60Hz as specified in HDMI 2.1, DisplayPort 1.4 Requires Processor Graphics USB: 1x USB 3.2 Gen 2x2 20Gbps (1 Type-C) 2x USB 3.2 Gen 2 10Gbps (1 Type-A + 1 Type-C) 6x USB 3.2 Gen 1 5Gbps (6 Type-A) 8x USB 2.0 Storage: 3x M.2 Gen4 x4 64Gbps slots 1x M.2 Gen3 x4 32Gbps slot 6x SATA 6Gbps ports LAN: Intel i225V 2.5G LAN Audio: 8-Channel (7.1) HD Audio with Audio Boost</p>	1
	<p>Include: 1 x ProZ690-A DDR5 Motherboard</p>		
2	<p>12th Intel Core Processor unlocked, 16 core (8P+8E) upto 5.2 GHz LGA1700 600 series chipset</p>	<p>CPU model: Core i9 CPU Socket: LGA1700 Memory Speed: DDR4, DDR5 Processor base power: 125W Memory speed support: 4800MHz 3200MHz Motherboard compatibility: 600 Series Processor Cores: 16 (8 performance core & 8 Efficient cores) Processor Threads: 24 (16 on Performance-cores, 8 on Efficient-cores) Frequency: 3.2 GHz on P-core and 2,4 GHz on E-core Intel turbo boost max frequency: 5.2 GHz Maximum Supported Memory: 128 GB Cache size: L2 – 14MB & L3 30MB Total CPU PCI Express Lanes: 20</p>	1
	<p>Include: 1 x Intel Core i9-12900K 16 core (8P+8E)</p>		

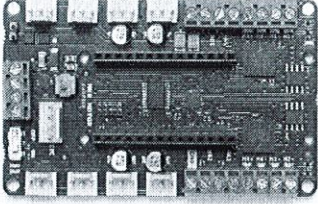
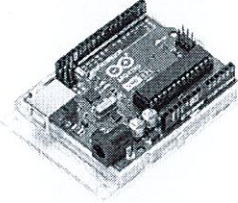
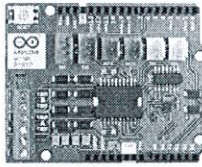


3	<p>32GB DDR5 RAM module</p> <p>Include: 1 x 32GB DDR5 RAM</p>	<p>Speed: DDR5 4800MHz Type: 288pin DIMM DDR5 Size: 32GB (1 x 32GB) CAS Latency: 40 Voltage: 1.1V First word Latency: 16.66ns</p>	4
KITS			
4	<p>Analog circuit design kit</p>  <p>Include: 1 x Analog circuit design kit with accessories 1 x start guide and sample lab sheet</p>	<p>Power supply: 50/60 Hz, 100 VAC to 240 VAC POWER ADAPTER Output voltage 12 VDC Comply with the following standards: EMC: IEC61326-1:2005 / EN61326-1:2006 CISPR11:2003/EN55011:2007 IEC 61000-4-3:2002 / EN 61000-4-3:2002 Kit consists of:</p> <ul style="list-style-type: none"> • Audio Speaker • Embedded Audio Player • LED Audio UV Meter • Analog Potentiometer • Seven-Segment Displays • Insulation Transformer • Various test points for measurements 	2
TOOLS AND ACCESSORIES			
5	<p>digital calipers</p>  <p>Include: 1 x Digital Caliper</p>	<p>Measurement Range: 0-150mm Accuracy: 0.2mm/0.01" Resolution: 0.1mm/0.01in Body material: plastic carbon fiber composites Ruler scale: Magnetic stripe film Caliper Type: Digital Calipers</p>	5
6	<p>Magnifying Lamp Workbench Light</p>  <p>Include: 1 x Magnifying lamp with power cord</p>	<p>Magnification: 3x and 10x , 5x or 8x and 15x Light Source: Led Light Material: Glass Arm length/metal hose: 50cm Style: Standing Style 5 Diopter Magnifier</p>	5
7	<p>WD40</p>	<p>Original WD-40 formula Smart Straw Sprays 2 Ways Flip up for stream, down for spray 50-state VOC compliant</p>	2

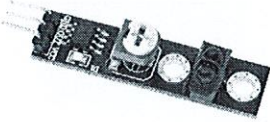

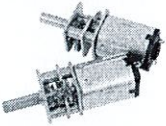


	 <p>Include: 1 x WD-40 with smart straw (12 oz)</p>		
8	 <p>Include: 1 x UV Curing Solder Mask Ink (Green) 1 x UV Curing Solder Mask Ink (Blue) 1 x UV Curing Solder Mask Ink (Red)</p>	<p>UV Solder Resist used to protect PCB traces from corrosion and moisture 100g each color Curing condition: UV light</p>	3
9	 <p>Include: 1 x LED UV lamp</p>	<p>LED : T6 Violet 10W LED Material : 6063 Aluminum Alloy Wavelength : 395-400nm. Voltage : 5V Waterproof Grade : IPX-6</p>	2
10	<p>Include: 1 x LiPo Battery 11.1V 1500Mah 35C</p>	<p>Voltage: 11.1 V Capacity: 1500mAh Configuration: 3S Discharge rate: 35C Connector Type: JST Weight: About 115.5g Working Temperature Charge: 0~45°C Working Temperature Discharge: (-20~60°C)</p>	50
11	 <p>Include: 1 x ON-OFF 2 way PCB mount switch</p>	<p>Rating: DC 50V,0.5A Contact Resistance: 30mΩ max. Insulation Resistance: 100m Ω Min,at DC 500V Withstand Voltage: AC 500V for 1 min.</p>	100
DEVELOPMENT BOARDS			
12		<p>MICROCONTROLLER: SAMD21 Cortex-M0+ 32bit low power ARM MCU BOARD POWER SUPPLY (USB/VIN): 5V SUPPORTED BATTERY(*): Li-Po single cell, 3.7V, 700mAh minimum CIRCUIT OPERATING VOLTAGE: 3.3V</p>	10



	<p>Include: 1 X Arduino MKR1000 board with USB cable</p>	<p>DIGITAL I/O PINS: 8 PWM PINS: 12 (0, 1, 2, 3, 4, 5, 6, 7, 8, 10, A3 - or 18 -, A4 -or 19) UART: 1 SPI: 1 I2C: 1 ANALOG INPUT PINS: 7 (ADC 8/10/12 bit) ANALOG OUTPUT PINS: 1 (DAC 10 bit) EXTERNAL INTERRUPTS: 8 (0, 1, 4, 5, 6, 7, 8, A1 -or 16-, A2 - or 17) DC CURRENT PER I/O PIN: 7 mA FLASH MEMORY: 256 KB SRAM: 32 KB</p>	
13	<p>Arduino MKR Motor Carrier</p>  <p>Include: 1 x Arduino MKR Motor Carrier</p>	<p>Compatible with all the boards in the MKR family Four servo motor outputs Four DC motor outputs (two high performance + two standard performance) Sensing of current feedback for the high-performance motors Two inputs for encoder sensors Four inputs for analog sensors (3-pin compatible) Possibility to read the status of the batteries ON-OFF switch with Power ON LED LiPo battery connector (2S or 3S compatible) and power terminal block for alternative power source LEDs to visually indicate the direction of the rotation of the DC motors On-board processor for automated control of some of the outputs I2C connector as a 4-pin male header</p>	10
14	<p>Arduino Uno Rev3</p>  <p>Include: 1 x Arduino Uno Rev3 board 1 x USB cable</p>	<p>MICROCONTROLLER: ATmega328P OPERATING VOLTAGE: 5V INPUT VOLTAGE :7-12V INPUT VOLTAGE (LIMIT)6-20V DIGITAL I/O PINS: 14 (of which 6 provide PWM output) PWM DIGITAL I/O PINS: 6 ANALOG INPUT PINS: 6 DC CURRENT PER I/O PIN: 20 mA DC CURRENT FOR 3.3V PIN: 50 mA FLASH MEMORY: 32 KB (ATmega328P) of which 0.5 KB used by bootloader SRAM: 2 KB (ATmega328P) EEPROM: 1 KB (ATmega328P) CLOCK SPEED: 16 MHz</p>	50
15	<p>Arduino Motor Shield Rev3</p>  <p>Include:</p>	<p>OPERATING VOLTAGE: 5V to 12V MOTOR CONTROLLER: L298P, Drives 2 DC motors or 1 stepper motor MAX CURRENT: 2A per channel or 4A max (with external power supply) CURRENT SENSING: 1.65V/A</p>	50



	1 x Arduino Motor Shield Rev3		
16	<p>Infrared Reflective Sensor module</p>  <p>Include: 1 x Infrared Reflective Sensor module</p>	<p>Module with infrared reflection sensors TCRT5000 Detecting the reflected distance: 1mm ~ 25mm applicable The comparator output signal clean, good waveform driving ability more than 15mA. With many adjustable precision potentiometer to adjust sensitivity The working voltage of 3.3V to 5V Output form: digital switch output (0 and 1) Small board PCB size: 3.2cm x 1.4cm The LM393, use of wide voltage comparator</p>	100
17	<p>Toy car wheels</p>  <p>Include: 1 x 30mm toy car wheel</p>	<p>Diameter: Approx. 30mm / 1.18inch Center Hole Diameter: Approx 1.9mm/ 0.07inch Material: Plastic Rim material: Plastic</p>	200
18	<p>Micro metal geared motor</p>  <p>Include: 1 x Micro metal geared motor (1000rpm)</p>	<p>Voltage: 9v - 12V RPM: 1000 Weight: 10g Dimension: 25x12x10cm</p>	20

