

萬鈞伯裘書院
2025-2026 年度
承投提供 **STEM** 教育設備供應商

招標編號：MKPC-T2526-011

附件一

Item	Description/ Specifications	Qty
1	<p>Microbit v2.0</p> <p>Processor: Nordic Semiconductor nRF52833</p> <p>Memory: 512kB Flash, 128kB RAM</p> <p>Interface: NXP KL27Z, 32kB RAM</p> <p>Microphone: MEMS microphone and LED indicator</p> <p>Speaker: on board speaker</p> <p>Logo touch: touch sensitive logo pin</p> <p>Edge Connector: 25Pin, 4 dedicated GPIO, PWM, I2C, SPI and ext. power. 3 ring pins for connecting crocodile clips/banana plugs. Notched for easier connection.</p> <p>I2C: Dedicated I2C bus for peripherals</p> <p>Wireless: 2.4Ghz Micro: bit Radio/BLE Bluetooth 5.0</p> <p>Power: 5V via Micro USB port, 3V via edge connector or battery pack. LED power indicator , Power off(push and hold power button)</p> <p>Current available: 200mA available for accessories</p> <p>Motion sensor: ST LSM303</p> <p>Software: C++, Make Code, Python, Scratch</p> <p>Size: 5cm(w) x 4cm(h)</p>	980

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2	<p>Environment Science Expansion Board V2.0 for micro:bit Power Supply: MicroUSB (5V) /Three 1.5V AAA Batteries (4.5V) Digital Port Output Voltage: 3.3V GPIO: I2C×2 P0 P1 P2 P8 P12 P13 P14 P15 P16</p> <table><tr><td>ML8511 UV Sensor</td><td>Operating Temperature: -20℃~70℃ Sensitive Area: UV-A, UV-B Sensitivity Wavelength: 280-390nm</td></tr><tr><td>BME280 Environment Sensor</td><td>Operating Current: 2mA Operating Temperature: -40℃~+85℃ Temperature Measuring Range: -40℃~+85℃ · Resolution 0.1℃ · Deviation±0.5℃ Humidity Measuring Range: 0~100%RH, Resolution 0.1%RH · Deviation±2%RH Response Time of Humidity Measurement: 1S Atmospheric Pressure Measuring Range: 300~1100hPa</td></tr><tr><td>Waterproof Temperature Sensor</td><td>Temperature Display Range: -10℃~+85℃ (Deviation±0.5℃) Operating Temperature Range: -55℃~125℃ Query Time: less than 750ms</td></tr><tr><td>TDS Water Quality Sensor</td><td>The TDS probe should not be used in water above 55℃ . The TDS probe should not be placed too close to the edge of the container, as this will affect the accuracy.</td></tr><tr><td>CCS811 Air Quality Sensor</td><td>Operating Temperature Range: -40℃~85℃ Operating Humidity Range: 10%RH~95%RH CO2 Measuring Range: 400ppm~8000ppm TVOC Measuring Range: 0ppb~1100ppb</td></tr><tr><td>Capacitive Soil Humidity Sensor</td><td>Operating Voltage: 3.3V-5.5V DC Output Voltage: 0-3.0V DC Connector: PH2.0-3P Dimension: 98×23mm</td></tr><tr><td>RGB Light</td><td>RGB Light Model: WS2812 Port: P15</td></tr><tr><td>Light Sensor</td><td>Output Date Type: analog value Data Range: 0-1023</td></tr><tr><td>Buzzer</td><td>Dimension: 9mm in diameter Model: passive buzzer Port: P0</td></tr><tr><td>Sound Sensor</td><td>Output Date Type: analog value Data Range: 0-1023</td></tr><tr><td>OLED Display</td><td>Dimension: 0.96" Display Color: blue Pixels: 128 × 64 Refresh Rate: 60 fps Brightness: 60 (Typ) cd/m2 Full-screen Lighting Consumption: about 22.75mA Operating Temperature: -30℃~+70℃ Display Area: 21.744×10.864 (mm)</td></tr><tr><td>Motor Driving</td><td>Driving Mode: PWM Compatible Motor: Low Power DC Motors such as N20 Gear Motor and 130 Gear Motor</td></tr><tr><td>WIFI IoT</td><td>Wireless Mode: IEEE802.11b/g/n Encryption Type: WPA WPA2/WPA2-PSK Frequency: 2.4GHz Built-in Protocol: TCP/IP protocol stack Supported IoT Platform: EasyIoT, IFTTT, ThingSpeak, SloT Status Indicator: Red: disconnected Blue: connecting Green: connected</td></tr></table> <p>Include: Environment Science Expansion Board V2.0 for micro:bit x1 Capacitive Soil Humidity Sensor x1 TDS Water Quality Sensor Probe x1 Waterproof Temperature Sensor x1</p>	ML8511 UV Sensor	Operating Temperature: -20℃~70℃ Sensitive Area: UV-A, UV-B Sensitivity Wavelength: 280-390nm	BME280 Environment Sensor	Operating Current: 2mA Operating Temperature: -40℃~+85℃ Temperature Measuring Range: -40℃~+85℃ · Resolution 0.1℃ · Deviation±0.5℃ Humidity Measuring Range: 0~100%RH, Resolution 0.1%RH · Deviation±2%RH Response Time of Humidity Measurement: 1S Atmospheric Pressure Measuring Range: 300~1100hPa	Waterproof Temperature Sensor	Temperature Display Range: -10℃~+85℃ (Deviation±0.5℃) Operating Temperature Range: -55℃~125℃ Query Time: less than 750ms	TDS Water Quality Sensor	The TDS probe should not be used in water above 55℃ . The TDS probe should not be placed too close to the edge of the container, as this will affect the accuracy.	CCS811 Air Quality Sensor	Operating Temperature Range: -40℃~85℃ Operating Humidity Range: 10%RH~95%RH CO2 Measuring Range: 400ppm~8000ppm TVOC Measuring Range: 0ppb~1100ppb	Capacitive Soil Humidity Sensor	Operating Voltage: 3.3V-5.5V DC Output Voltage: 0-3.0V DC Connector: PH2.0-3P Dimension: 98×23mm	RGB Light	RGB Light Model: WS2812 Port: P15	Light Sensor	Output Date Type: analog value Data Range: 0-1023	Buzzer	Dimension: 9mm in diameter Model: passive buzzer Port: P0	Sound Sensor	Output Date Type: analog value Data Range: 0-1023	OLED Display	Dimension: 0.96" Display Color: blue Pixels: 128 × 64 Refresh Rate: 60 fps Brightness: 60 (Typ) cd/m2 Full-screen Lighting Consumption: about 22.75mA Operating Temperature: -30℃~+70℃ Display Area: 21.744×10.864 (mm)	Motor Driving	Driving Mode: PWM Compatible Motor: Low Power DC Motors such as N20 Gear Motor and 130 Gear Motor	WIFI IoT	Wireless Mode: IEEE802.11b/g/n Encryption Type: WPA WPA2/WPA2-PSK Frequency: 2.4GHz Built-in Protocol: TCP/IP protocol stack Supported IoT Platform: EasyIoT, IFTTT, ThingSpeak, SloT Status Indicator: Red: disconnected Blue: connecting Green: connected	800
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3	<p>Smart Science IoT Kit</p> <p>IoT Kit is developed based on IoT:Bit, a new breakout board compatible with science sensors such as the ultrasonic sensor, dust sensor, light sensor and water level sensor, including RTC Timing and WIFI module.</p> <p>IoT:bit:</p> <p>(1) Intergrated ESP12F WiFi, RTC, earphone jack and passive buzzer (2)Adaptive for Building Blocks (4 standard spacing fixed holes)</p> <p>(3)Separately lead IIC interface, directly plug in OLED, BME280 and IIC,etc</p> <p>(4) Support Thingspeak/ IFTTT.</p> <p>Component number</p> <p>IoT:bit 1</p> <p>OLED 1</p> <p>BME 280 1</p> <p>PIR sensor1</p> <p>Light sensor1</p> <p>Noise sensor 1</p> <p>Water level sensor 1</p> <p>soil moisture sensor1</p> <p>Sonar:bit 1</p> <p>Dust sensor 1</p> <p>180° servo 1</p>	640
4	<p>micro:bit Smart City Kit</p> <p>The Smart City Kit has a well-selection of IoT:bit, DHT11 sensor, soil moisture sensor, water level sensor, sonar:bit, servos and etc., we could use it to build such themes as the smart parking lot, transportation network, and river level monitoring</p> <p>1 x IoT:bit Internet WIFI extension board for micro:bit</p> <p>1 x LED-Green</p> <p>1 x LED-Yellow</p> <p>1 x LED-Red</p> <p>1 x DHT11 sensor</p> <p>1 x Sonar:bit</p> <p>1 x Soil moisture sensor</p> <p>1 x Water level sensor</p> <p>1 x OLED screen</p> <p>1 x EF92A 180° servo</p> <p>1 x micro USB cable</p> <p>Jumper wires</p>	80

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5	<p>HUSKYLENS 2 AI Camera</p> <p>Technical Specifications</p> <p>Processor: Kendryte K230 Dual-Core 1.6GHz</p> <p>AI Computing Power: 6 TOPS</p> <p>Memory: 1GB LPDDR4</p> <p>Storage: 8GB eMMC</p> <p>Image Sensor: GC2093, 2MP, 1/2.9", 60FPS</p> <p>Display: 2.4" IPS Touch Screen (640×480), Full-Lamination</p> <p>Buttons: 1 × Function Button</p> <p>Fill Lights: 2 × LEDs</p> <p>RGB Indicator: 1 × RGB LED</p> <p>Wi-Fi: 2.4GHz Wi-Fi 6 (Slot-in Module)</p> <p>Expandable Storage: 1 × TF Card Slot</p> <p>Microphone: Capacitive Silicon Microphone</p> <p>Speaker: 1W Acoustic Speaker</p> <p>Operating Voltage: 3.3–5V</p> <p>Power Consumption: 1.5–3W</p> <p>Dimensions: 70 × 58 × 19mm</p> <p>Net Weight: 90g</p> <p>Interfaces: Type-C, Gravity (I2C / UART), TF Card Slot</p> <p>Shipping List</p> <p>HUSKYLENS 2 AI Vision Sensor x 1</p> <p>M3 Screws x 6</p> <p>M3 Nuts x 6</p> <p>Mounting Bracket x 1</p> <p>Heightening Bracket x 1</p> <p>Gravity-4P Sensor Connector Cable (30cm) x 1</p> <p>Dual-Plug PH2.0-4P Silicone Cable (20cm) x 1</p> <p>Power Adapter Board x 1</p>	420
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