

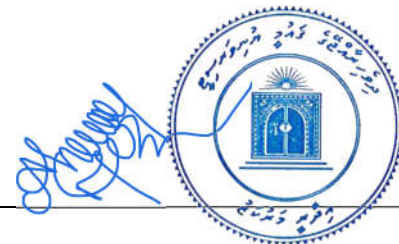


List of lab equipment and components


Groups/Items	Item description	Specification	Qty
Group 1 (Generators, power supply and Oscilloscope)			
<p>Group 1 (Generators, power supply and Oscilloscope)</p>	<p>Function generator</p>  <p>Include: 1 x Arbitrary Waveform - Function Generator 1 x power cord 1 x USB cable 2 x BNC to BNC cable 2 x BNC to clip cable 1 x calibration certificate</p>	<p>Minimum frequency: 1 uHz Maximum frequency: 30 MHz No of channels: 2 channels Sampling rate: 200MSa/s Resolution: 1μHz Accuracy: ±1ppm of the settings, 18°C to 28°C Analog and digital modulation types: AM, DSB-AM, FM, PM, FSK, ASK, PSK and PWM Built-in Arbitrary Waveforms: 160 kinds, including Sinc, Exponential Rise, Exponential Fall, ECG, Gauss, HaverSine, Lorentz, Dual-Tone, etc. Built-in 8 orders harmonics generator Built-in 7 digits/s counter up to 200MHz Display: 3-inch TFT LCD, color screen Power Supply Voltage: 120V/220V Universal Max Amplitude Vpp @ 50 ohms:10 V Interfaces I/O: LAN / Ethernet, USB Host, USB Calibration Included: Factory Calibration</p>	5
	<p>Spectrum Analyze with Tracking Generator</p>  <p>Include: 1 x Spectrum Analyzers with Tracking Generator (9kHz to 2.1 GHz) 1 x USB cable and power cord 1 x Utility Kit 1 x adapters and attenuator kit 1 x Near-Field Probe Set 1 x Reflection/VSWR measurement kit 1 x cable set (Male N to Male N, Male N to BNC, SMA) 1 x Calibration Certificate</p>	<p>Frequency Range: 9 kHz up to 2.1 GHz Tracking Generator (TG):1.5 GHz Display: 10.1 Inch WVGA (1024 x 600) Displayed Average Noise Level: -161 dBm/Hz (Typ.) -98 dBc/Hz @10 kHz Offset Phase Noise (1 GHz, Typ.) Total Amplitude Accuracy: ± 0.7 dB Resolution Bandwidth (RBW): 1 Hz ~ 1 MHz, in 1-3-10 sequence Standard Preamplifier Phase Noise: < -98 dBc/Hz @ 1 GHz, 10 kHz offset Power Supply Voltage: 220V Universal</p>	1



	<p>Digital Oscilloscope 2 Channels</p>  <p>Include: 1 x 200 mhz Digital Oscilloscope 2 Channels 2 x 200MHz passive probes 1 x USB cable and power cord</p>	<p>Bandwidth: 200MHz Channels: 2 + EXT Real Time Sampling Rate: 1 GSa/s Trigger Type: Edge, Slope, Pulse Width, Window, Runt, Interval, Dropout, Pattern, Video Capture Rate: 100,000 wfm/s (normal mode), 400,000 wfm/s (sequence mode) Large 7-inch TFT-LCD display (800x480)</p>	5
<p>Group 1 (Generators, power supply and Oscilloscope)</p>	<p>Programmable DC Power Supply</p>  <p>Include: 1 x Programmable DC power Supply 30V10A 1 x power cables 1 x Banana head with alligator clip set 1 x CD and cable for host computer interface</p>	<p>Output: Regulated power supply from 0 to 30V and current from 0 to 10A. Overvoltage protection(0-31V) and Overcurrent protection(0-10.1A) Overheat protection function (85 ° C) Resolution: Voltage 10mV and current 1mA USB ports: 5V, 1A USB interface Multifunction display: LCD color display voltage, current set value and actual output value. 4 digit voltage and 5 digit current Display Key: should allow to change display measurement data numerically or as a curve. Memory function: programmable memory key to set channel parameters and edit them (upto 10 parameters). Host computer interface</p>	10



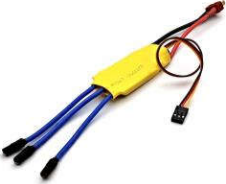


Group 2 (Displays and LEDs)

<p>Group 2 (Displays and LEDs)</p>	<p>LCD module</p>  <p>Include: 1 x LCD Display Module</p>	<p>LCM type: characters, 2 line x 16 lines Voltage: 5V DC Display: TFT LCD module with built-in LCD controller Backlight: blue Interface: 4-bit and 8-bit parallel interface</p>	5
	<p>5mm Transparent LED Assorted Kit</p> <p>Include: 1 x White (emitting colour) LED 1 x Red (emitting colour) LED 1 x Green (emitting colour) LED 1 x Blue (emitting colour) LED 1 x Yellow (emitting colour) LED</p>	<p>Package: Round 5 mm, clear Forward Voltage : DC 2 - 3.2 Volt Max Current : 20 mA Emitting Color: Red/Orange/Yellow/Green/Blue/White</p>	300
	<p>RGB LED</p>  <p>Include: 1 x 5mm RGB Tri-Color LED</p>	<p>Package: Round 5 mm, clear Common cathode Viewing Angle: 30 Degrees 4pin 4 pin</p>	500
	<p>UV LED</p> <p>Include: 1 x UV Ultraviolet 5mm Clear LED</p>	<p>Package: Round 5 mm, clear Forward Voltage : DC 3.2 – 3.4 Volt Max Current : 30 mA Wave length: 390 to 400 nm</p>	100

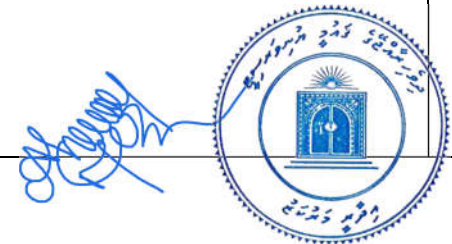






Group 3 (Motors and actuators)

<p>Group 3 (Motors and actuators)</p>	<p>MG90S 9g Servo Motor</p>  <p>Include: 1 x MG90S micro Servo motor 1 x Arm sets with screws</p>	<p>Metal Gear with less noise Structural Material: Aluminum metal teeth, coreless motor, double ball bearing Stall Torque: 2kg/cm Operating Voltage: 4.8V Operating Speed: 0.11 seconds / 60 degrees (4.8V) Temperature Range: 0-55 °C The dead-band setting: 5 microseconds Line Length: 250MM</p>	<p>300</p>
	<p>A2212 Brushless motor 2700KV</p>  <p>Include: 1 x A2212 2700KV brushless motor 1 x Mount holder 1 x Motor bullet holder 1 x Screws</p>	<p>A2212 2700KV brushless outrunner motor: Rpm/V: 2700KV Net Weight: 50g Weight: 60g Motor Dimensions: 27* 26mm Battery Opernating: 2-3 Lipo Idle current: 1.8A Load current: 18.5A Power (Watt): 240 ESC(A): 30A,20A Peak.Amps :14-22 A</p>	<p>20</p>
	<p>30A Brushless ESC with XT60 connector</p>  <p>Include: 1 x 30A Brushless ESC with XT60 connector</p>	<p>30A Brushless ESC: Output: Continuous 30A, burst 40A up to 10 Secs. Input voltage: 2-4 cells lithium battery or 5-12 cells NiCd/NIMh battery BEC: 2A / 5V (Linear mode). Max speed: 210,000rpm for 2 poles BLM, 70,000rpm for 6 poles BLM, 35,000rpm for 12 poles BLM. (BLM: Brushless Motor) Size: 45 * 24 * 11mm / 1.8 * 0.9 * 0.4in Weight: 25g / 0.9oz Item total weight: 480g / 1.06Lbs</p>	<p>20</p>






	<p>Stepper motor with driver</p>  <p>Include: 1 x stepper motor (28BYJ-48) 1 x driver module board (ULN2003)</p>	<p>Rated Voltage: 5V DC Number of Phases: 4 Stride Angle: 5.625°/64 Pull in torque: 300 gf.cm Insulated Power: 600VAC/1mA/1s Coil: Unipolar 5 lead coil</p>	10
<p>Group 3 (Motors and actuators)</p>	<p>25g Metal Gear digital servo</p>  <p>Include: 1 x 25g servo motor 1 x Servo arms/discs and mounting screws</p>	<ul style="list-style-type: none"> - Dimension: 35.5mm x 15mm x 28.6mm - Weight: 25g - Stall torque: 4 kg-cm(4.8V), 4.5 kg-cm(6V) - Operating speed: 0.08sec/60°(4.8V), 0.07sec/60°(6V) - Operating voltage: 4.8V-6V - No loading current: 0.18A(4.8V), 0.21A(6V) - Loading current: 1A(4.8V), 1.5A(6V) - Equipped with two ball bearings. 	10
	<p>Servo tester / CCPM Servo Consistency Master</p>  <p>Include: 1 x Servo motor tester</p>	<p>Multi Servo Tester 3CH ECS Consistency Speed Controller Power Channels CCPM Meter Servo Motor</p> <p>Voltage consumption: DC4.8-6V</p> <p>There are 3 modes to check servos or ESC:</p> <p>Manual mode: turn the knob with different speed, check the reaction time.</p> <p>Neutral mode: make the servo go back to the neutral point.</p> <p>Automatic "window wiper" mode: make the servo swing like a window wipers in the biggest angle.</p> <p>Connect 1-3 servos simultaneously and test such as 1-3 servos consistency and so on.</p> <p>Connect 1-3 ESC to test and compare their reaction time respectively.</p>	20



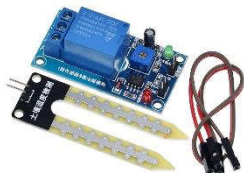


<p>Group 3 (Motors and actuators)</p>	<p>DC 3V Motor</p>  <p>Include: 1 x DC motor</p>	<p>Voltage: DC 3V No-load speed : 20000 RPM Model Number: DC 3V Motor Type: Micro Motor Output Power: 3V DC Motor</p>	<p>100</p>
<p>Group 4 (Discrete Components)</p>			
<p>Group 4 (Discrete Components)</p>	<p>Resistor Assortment Kit</p> <p>Include: 1 x each standard values between 1 Ohm-10M Ohm</p>	<p>Type: Fixed Resistor Resistance Tolerance: $\pm 1\%$ Technology: 1/4w Material: metal film Package Type: Throught Hole</p>	<p>50</p>
	 <p>Varistor Resistor Assorted kit</p> <p>Include: 1 x Assorted kit of 12 values of 7D, 10D, 20D series varistors</p>	<p>Operating Temperature: $-40\sim+85^{\circ}\text{C}$ Body: Nickel plated Technology: Metal Film Package Type: Throught Hole</p>	<p>5</p>
	 <p>Crystal Oscillator Kit</p> <p>Include: 1 x Quartz crystal value (4MHz, 8MHz, 12MHz, 16MHz, 24MHz, 48MHz).</p>	<p>PACKAGE: HC-49S Package Type: Throught Hole Metal Package with resistance Weld Sealed, Lead-free compliance, high reliable, tight tolerance and stability.</p>	<p>20</p>
	 <p>Slide Type Switch Modules</p> <p>Include: 1 x Dip switch of each 1pin 2pin 3pin 4pin 5pin 6pin 8pin 10pin</p>	<p>2.54mm Slide Type Switch Module Switch Type: Toggle Switch Features 2: Position Way DIP Red Snap Switch Plastic body</p>	<p>50</p>





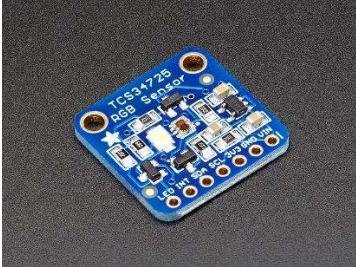

	<p>rotary encoder switch</p>  <p>Include: 1 x Rotary 16bit encoder with knob</p>	<p>16 bit PCB encoding switch Switch Type: Knob switch through hole type Mechanical life: 1000 steps Operating Temperature: -25~+70°C</p>	20
<p>Group 4 (Discrete Components)</p>	<p>MOSFET transistors Assortment Kit</p>  <p>Include: 1 x IRFZ44N 1 x IRF510N 1 x IRF520N 1 x IRF530N 1 x IRF540N 1 x IRF640N 1 x IRF740 1 x IRF840 1 x IRF820 1 x IRF3205</p>	<p>Product Name: MOSFET transistors RoHS Compliant. Packaging: TO - 220 Model: 10 Type: N-channel IRFZ44N 49A/55V IRF510N 5.6A/100V IRF520N 9.7A/100V IRF530N 17A/100V IRF540N 33A/100V IRF640N 18A/200V IRF740 10A/400V IRF840 8A/500V IRF3205 110A/55V</p>	10
	<p>Thyristors/Triacs</p>  <p>Include: 1 x MAC97A6 1 x BT134-600E 1 x BTA06</p>	<p>Packaging: TO – 220 Type: through-hole MAC97A6 (VDRM 400V, IT(RMS) 0.6A, TO-92) BT134-600E (VDRM 600V, IT(RMS) 4A, TO-126) BTA06 (VDRM 600V, IT(RMS) 6A, TO-220)</p>	10



Group 5 (Sensors and transducers)

<p>Group 5 (Sensors and transducers)</p>	<p>soil moisture sensor relay control module</p>  <p>Include: 1 x Module 1 x Sensor 1 x Cables</p>	<p>Power Supply Voltage: 12VDC Input Voltage: >100mA Load Capacity: 250V 10A AC or 30V 10A DC</p>	3
	<p>GL55 Series Photoresistor</p>  <p>Include: 1 x GL5516 LDR Photoresistor 1 x GL5528 LDR Photoresistor 1 x GL5537-1 LDR Photoresistor 1 x GL5537-2 LDR Photoresistor 1 x GL5539 LDR Photoresistor 1 x GL5549 LDR Photoresistor</p>	<p>Diameter: 5mm Max. voltage: 150 VDC Max. power: 90 mW, 100mW Spectrum Peak Value (nm): 540 Operating Temperature: -30~+70° Package Type: Throught Hole Package Type: TO-18 Epoxy Resin</p>	100
	<p>Carbon Film Potentiometer</p>  <p>Include: 1 x 1K Ohm potentiometer with cap 1 x 10K Ohm potentiometer with cap 1 x 50K Ohm potentiometer with cap</p>	<p>Come with knob cap Size: L*Dia/33*15mm/1.29*0.59" Pin: 3 pin Tolerance: ±10% Type: Rotary Potentiometer Technology: Carbon Film</p>	50



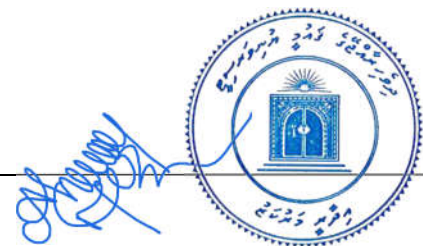
Group 5 (Sensors and transducers)	3 axis Accelerometer module  <p>Include: 1 x 3 axis accelerometer module</p>	digital I2C and SPI interface Acceleration range: +2g, +4g, +8g or +-16g Power supply :3-5v	10
	Ambient light sensor  <p>Include: 1 x ambient light sensor module</p>	Device is sensitive to the visible spectrum Wide angle of half sensitivity $\varphi = \pm 60^\circ$ visible spectrum (390–700 nm) Arduino compatible module Vcc 6V	10
	Color sensor  <p>Include: 1 x color sensor module</p>	Red, Green, Blue (RGB), and White Light Sensing with IR Blocking Filter I ² C Fast Mode Compatible Interface Data Rates up to 400 kbit/s Input voltage levels compatible with V _{DD} or 1.8 V _{BUS} Very high sensitivity - ideally suited for operation behind dark glass	2
	PIR Motion Sensor  <p>Include: 1 x PIR motion sensor module</p>	Operating voltage: DC5V to 20V Static power consumption: 65 microamps Level output: 3.3V, low 0V Delay time: adjustable (0.3 seconds to 18 seconds) Lumen: 350-550Lm (approx.) Blockade Time: 0.2 seconds Sensing range: less than 120 degree cone angle of less than 7 meters Operating temperature: -15 to +70 degrees.	5






	<p>Gas Sensor</p>  <p>Include: 1 x MQ-2 gas sensor module</p>	<p>Detection Gas: smoke Detection range: 300 to 10000ppmm Sensing Resistance 10 KΩ – 60 KΩ Characteristic gas: 1000ppmm isobutane Sensitivity: R in air/Rin typical gas\times5 Sensitive body resistance: 1KΩ to 20KΩ in 50ppm toluene Operating voltage 5V Response time: 1e10s</p>	10
<p>Group 5 (Sensors and transducers)</p>	<p>IR Infrared Obstacle Avoidance Sensor Module</p>  <p>Include: 1 x IR Infrared Obstacle Avoidance Sensor Module</p>	<p>Detectable distance 2 ~ 30cm, Detection angle: 35 ° Adjustable detection distance 3-5V DC power supply modules</p>	10
	<p>IR Transmitter and receiver Sensor Module</p>  <p>Include: 1 x IR receiver module 1 x IR transmitter module</p>	<p>Wavelength: 940nm Operating temperature: -30~+85°C Signal type: digital Emission distance: about 1.3 meter Emission angle: 20 degrees Receiving angle: 35 degrees Carrier frequency: 38kHz Supply voltage: 5V</p>	10
	<p>IR LED</p>  <p>Include: 1 x IR Emitter 1 x IR Reciever</p>	<p>Diameter; 5mm Lens: Clear Lens (emitter)/ Black Lens (receiver) Emitting Color: IR Emitter 850nm/IR Emitter 940nm/ IR Receiver 940nm Luminous Intensity: Invisible Light Emitting Angle: 30 Degree (IR Receiver) 45 degree (IR Emitter) Forward Voltage: 1.4-1.6V (850NM IR Emitter) 1.2-1.5V (940NM IR Emitter) Tolerance: \pm5% Current:20mA</p>	100



Group 5 (Sensors and transducers)	Thermistor NTC  <p>Include: 1 x 10K thermistor 1 x 50K thermistor</p>	Resistance Tolerance: $\pm 1\%$ Operating Temperature $-55^{\circ}\text{C} \sim 200^{\circ}\text{C}$ Power – Max: 50 mW Package Type: Through Hole Package / Case: Bead, Glass	20
	Ceramic Piezo Vibration Sensor Module  <p>Include: 1 x Ceramic Piezo Vibration Sensor Module</p>	Voltage: 3.3V or 5V. Current: <1mA. Interface Type: Analog Output Size: 30mm x 23mm. Weight: 5g. Operating Temperature: $-10 \sim + 70$	10
	Air quality sensor module  <p>Include: 1 x MQ-135 Air Quality Sensor</p>	Working Current: 150mA Typical operating Voltage: 5V Digital Output: 0V to 5V (TTL Logic) @ 5V Vcc Analog Output: 0-5V @ 5V Vcc Power consumption: 150mA Detect/Measure: NH3, Nox, CO2, Alcohol, Benzene, Smoke	5



Group 6 (Terminals and connectors)

	<p>Single row Male /female header connector</p>  <p>Include: 1 x 40 pin single row header connector strip 1 x 40 pin single row L shape header connector strip</p>	<p>Breakable Pin Header Spacing: 2.54mm Gender of Connector: Male Number of Pins: 40Pin Type of Row: Single-Row</p>	<p>100</p>
<p>Group 6 (Terminals and connectors)</p>	<p>PCB terminal connector</p>  <p>Include: 1 x 2pin screw PCB terminal connector</p>	<p>Pitch: 5.0mm Poles: 2pin 3pin Rated Voltage: 300V Rated Current: 16A Cable Size: 22-14 A.W.G Contact Resistance:5000MΩ/1000V Temp Range:-30°C to +120°C</p>	<p>100</p>
	<p>DC Power Plug Jack</p>  <p>Include: 1 x DC-005 DC Power Jack female Socket and male plug</p>	<p>DC Power Jack: DC-005 Plastic Male Plugs + Female Socket Rated vol/current: 12V 3A Male plug inner diameter: 2.1mm Male plug outer diameter: 5.5mm Mount type: Barrel-Type Right Angle PCB Mount Terminal</p>	<p>50</p>



Connector Set Male Female Gold Plated**Include:**

- 1 x T plug male and female connector
- 1 x XT60 male and female connector
- 1 x ECM2 male and female connector
- 1 x ECM3 male and female connector
- 1 x ECM5 male and female connector

XT60 connector:

Hook up brushless motor to electronic speed control.
 Low resistance, and gives the best electric flow.
 Female Internal Diameter: About 3.5mm / 0.14"
 Female Connector Length: About 12mm / 0.47"
 Male Internal Diameter: About 4mm / 0.16"
 Male Connector Length: About 12mm / 0.47"



EC2 / EC3 / EC5 / EC8 Connector:

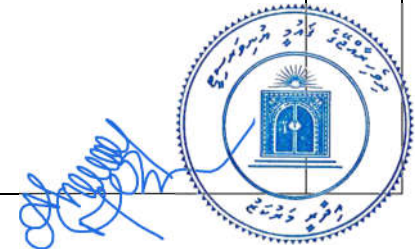
Ergonomically pleasing and easy to grip
 Capable of 60 continuous amps
 Protected to avoid shorting and reverse polarity
 Material: Plastic+Metal
 Color: Gold+Blue
 EC2: with 2.0 mm Bullet Connector Plugs;
 EC3: with 3.5 mm Bullet Connector Plugs;
 EC5: with 4.0 mm Bullet Connector Plugs


Group 6
 (Terminals and
 connectors)



Group 7 (Tools)



<p>Group 7 (Tools)</p>	<p>Electric drill Rotary Tool with Accessories</p>  <p>Include:</p> <ul style="list-style-type: none"> 1 x Cordless Electric Drill 1 x Power cable/charger 1 x Clamp Mandrel 1 x Rubber Wheel 1 x Tapping Rod 1 x Circular Saw Blade 2 x Diamond Grinding Needle 2 x Wool Polishing Wheel 3 x Sandpaper Circle 3 x Twist Drill Bits 5 x Wheel Grinding Head 6 x Electric Drill Bit Collet(0.5mm, 1.0mm, 1.5mm, 2.4mm, 3.0mm, 3.2mm) 1 x Storage Box 	<p>Battery: Lithium Charging time:2hours Charge Voltage: 5V DC (USB) Collect Chuck Diameter: 0.5-3.2mm Speed: 5 speed adjustable; speed adjustment range:3000-15000 r/min EngravingOutput Voltage: 3.7V Rated Input Power: 10W Rated Voltage: 220V</p>	<p>2</p>
	<p>Cordless DC drill</p>  <p>Include:</p> <ul style="list-style-type: none"> 1 x 18V cordless drill 2 x batteries 1 x charger 1 x Double End Screwdriver Bits 	<p>Battery protection circuit All metal gears Battery Type: Li-ion Voltage: 18V Max. in Masonry: 13mm Max. in Steel: 13mm Max. in Wood: 38mm Max. Fastening Torque: S/H 36/62 Nm Chuck Capacity: 1.5 - 13mm Torque Settings: 21 + Drill No Load Speed Hi: 0 - 1,900rpm Low: 0 - 600rpm Blows per Minute Hi: 0 - 28,500bpm Low: 0 - 9,000bpm</p>	<p>1</p>



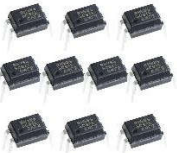
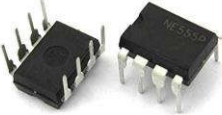
<p>Group 7 (Tools)</p>	<p>Drill bits</p> <p>Include: 1 x Serrated Twist Drill bit (3mm, 4mm and 8mm) 1 x Cobalt Drill Bit (0.8mm 1mm, 1.5mm, 5mm, 10mm)</p>	<p>Material: High-Speed Steel+Titanium / stainless steel Structure: Saw&Drill Application: Woodworking, Aluminum Alloy, Plastic Board Drilling And Cut Grooving</p>	<p>5</p>
	<p>Portable Reciprocating Saw Adapter</p>  <p>Include: 1 x Electric Drill Converter 1 x Handle 1 x 100mm Sawblade 1 x 133mm Sawblade 1 x 152mm Sawblade</p>	<p>Portable Reciprocating Saw Adapter For portable drill Capable of cutting metal, wooden boards, branches, PVC plastic pipes, etc. Material: ABS+metal Automatic oil refill, smooth cutting High rigidity drive shaft with high strength bearings Double the bearing force, more powerful and durable Quick saw blade mounting chuck for easy and non-dropping Detachable auxiliary handle: 2 points Wider protective baffle Can be matched with a wide variety of electric drills:</p>	<p>1</p>

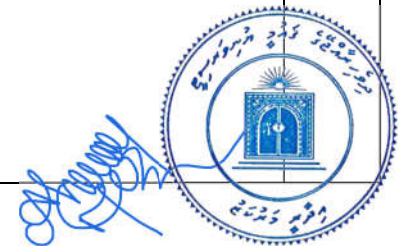





Group 8 (Integrated IC)

Group 8 (Integrated IC)	74 series logic IC assortment kit Include: 1 x assortment kit with 74 types of 74LSxx series ICs	Standard 74LS Family in DIP Package Low Power and High Speed Schottky Family	10
	IC logic gates  Include: 1 x 7400 quad 2-input NAND 1 x 7404 hex inverter 1 x 7408 quad 2-input AND 1 x 7432 quad 2-input OR 1 x 7402 quad 2-input NOR	Package: 14 pin Plastic Dual-In-Line Package (PDIP) Supply Voltage: 7V Input Voltage: 5.5V Operating Free Air Temperature: 0°C to +70°C Storage Temperature Range: -65°C to +150°C	200
	Amplifier  Include: 1 x LM358, Amplifier 1 x LM324, Amplifier 1 x JRC4558, Amplifier 1 x NE5532, Operational Amplifier 1 x LM386m, Frequency Amplifier 1 x TDA2822D, Stereo Op Amplifier	Amplifier Type: General Purpose Mounting Type: Through Hole Package: DIP	5





Group 8 (Integrated IC)	Voltage comparators and Current controllers Include: 1 x LM393, Voltage Dual Comparator 1 x LM339, Voltage Comparators 1 x ICL7660s, Super Voltage Converter 1 x UC3842AN, Current Mode Controller 5 x UC3843AN, Current Mode Controller	Mounting Type: Through Hole Package: DIP	5
	 Transistor Output Optocoupler Include: 20 x PC817c, Photocoupler	Standard IC DIP package Reverse voltage: 6V The maximum collector / emitter voltage: 35V The maximum collector / emitter voltage: 6V Isolation voltage: 5000V (RMS) Collector power dissipation: 150mW Operating temperature: -30 ~ +100 Cut-off frequency: 80kHz Number of Pin: 4	10
	 Timer Include: 20 x NE555, Timer	555 Type, Timer/Oscillator (Single) 100kHz Voltage: 4.5 V ~ 16 V Current: 10mA Temp: 0°C ~ 70°C Package: 8-DIP (0.300", 7.62mm) Mounting Type: Through Hole	10
	Transistors Darlington Include: 5 x ULN2003AN, Bipolar (BJT) 5 x ULN2803APG, , Bipolar (BJT)	Mounting Type: Through Hole Package: DIP High-Voltage Outputs: 50 V	10
	L7805 voltage regulator	Output Voltage: 5V Output Current: 1.5A Thermal Overload Protection Short Circuit Protection OUTPUT TRANSITION SOA PROTECTION Terminals: three-terminal positive	20

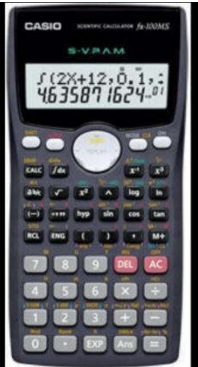



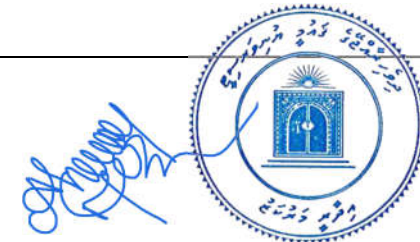
<p>Group 8 (Integrated IC)</p>	 <p>Include: 1 x L7805 voltage regulator</p>	<p>Regulators Package: TO-220</p>	
Group 9 (Measuring devices)			
<p>Group 9 (Measuring devices)</p>	<p>Clamp meter</p>  <p>Include: 1 x digital clamp meter with test leads</p>	<p>Autoranging function AC current: 60.00/600.0/1000A (Auto-ranging) AC voltage: 60.00/600.0V (Auto-ranging) DC voltage: 60.00/600.0V (Auto-ranging)Resistance: 600.0Ω/6.000/60.00/600.0kΩ/ 6.000/40.00MΩ(Auto-ranging) Capacitance test: 1.000/10.00/100.0μF Diode test: 1.000/10.00/100.0μF Temperature/Frequency /True RMS NCV and data hold function</p>	2
	<p>Bench digital multimeter</p>  <p>Include: 1 x precision bench digital multimeter 1 x clamps and test leads 1 x USB to RS232 interface adapter cable</p>	<p>Display: VFD multi segment display, dual readings, resolution 5.5 digits DC voltage/current range: 200mV to 1000V and 200 μA to 10 A DC max resolution: volt: 1 uV, current: 1 uA DC voltage and current Accuracy: 0.015 + 0.003 and 0.02 + 0.005 AC voltage and current range: 200 mV to 750 V and 20 mA to 10 A AC max voltage and current resolution: 1 uV and 100 uA AC voltage and current Accuracy: 0.2 + 0.05 and 0.3 + 0.06 AC volt/current freq: 20 Hz to 100 KHz and 20 Hz to 2 kHz Resistance range: 200 Ω to 100 MΩ Resistance Max. resolution: 1 mΩ Resistance accuracy: 0.02 + 0.003 Frequency range: 20 Hz to 1 MHz Frequency Max. resolution: 0.1 mHz Frequency accuracy: 0.01%</p>	2






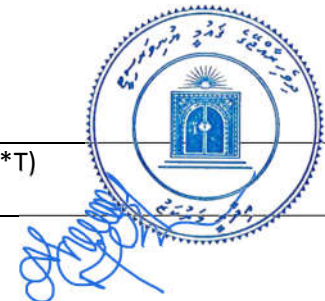
	<p>Multi-function Tester</p>  <p>Include: 1 x Multi-function tester 1 x Test lead with hook 1 x Micro USB cable</p>	<p>Display type: 3.5" TFT LCD (160 x 128 p) Special features: Automatic calibration, One key operation <u>Measuring range</u> Capacitance: 25 pF - 100 mF Resistance: 0.01 Ω - 50 MΩ Inductance: 0.01 mH - 20 H Battery: 0.1 V - 4.5 V, 300 mAh Z-diode breakdown voltage: 0.01 V - 30 V Z-diode: 0.01 V - 4.5 V Diode: UF < 4,5 V Thyristor / Triac: IGT < 6 mA</p>	2
<p>Group 9 (Measuring devices)</p>	<p>Insulation and Continuity Tester</p>  <p>Include: 1 x Insulation resistance and continuity Tester 1 x Set red/black test leads 1 x Calibration certificate</p>	<p>Automatic continuity testing range: 0.01 to 100 Ohms (0-50 Ohms on analog range) Voltage testing range: 0 to 600V DC or TRMS Voltage test inhibit level: 50V Power supply: 5 AA alkaline or rechargeable batteries Insulation testing: 1000V and 200GΩ Continuity test: 200mA down to 0.01</p>	1


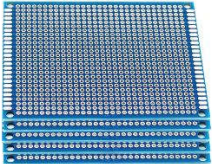




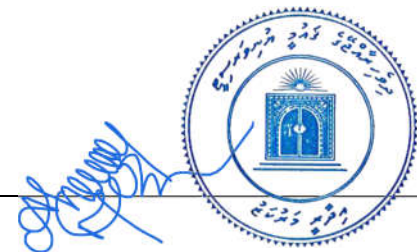
	Scientific Calculator		<p>Casio fx100 MS specification or higher</p> <ul style="list-style-type: none"> • Non-Programmable. • Number of Functions: 300. • AA × 1. • 10 + 2 digits 10-digit mantissa + 2-digit exponential display. • Dot matrix display High-resolution screen provides beautiful looking graphs every time. 	1
Group 10 (Others)				
Group 10 (Others)	<p>AA Battery Case YCDC®</p>  <p><small>*Sell battery case only, batteries are not included.</small></p> <p>Include: 1 x AA battery case (1 slot) 1 x AA battery case (2 slot) 1 x AA battery case (3 slot)</p>		<p>High-quality materials: Plastic ABS Battery Holder AA Cells Storage Box With Cable Leads</p>	30
	<p>Electronic component storage cabinet</p>		<p>Drawer dimension: 6 inch x 2 ¼ inch x 1 5/ Inch Size: 64 drawers HIGH QUALITY Rugged and high impact polystyrene plastic frame Some dividable drawers</p>	2






	 <p>Include: 1 x 64 drawer plastic storage cabinet</p>		
	<p>Adjustable Circuit Board Holder</p>  <p>Include: 1 x adjustable circuit board holder (Bench PCB vice)</p>	<p>Retractable to accommodate various board sizes up to 198mm wide and up to 4mm thick Clamps to allow PCB to rotate 360 degrees Rigid metal structure</p>	5
<p>Group 10 (Others)</p>	<p>Photosensitive Dry Film</p>  <p>Include: 1 x Photosensitive dry film Roll in protector box</p>	<p>Size: approx. 30*100cm PCB photosensitive dry film for circuit production Excellent adhesion to almost all surfaces Type: photosensitive dry film</p>	10
	<p>PCB copper clad board</p>	<p>Dimension: 300mm x 200mm x 1.5mm (L*W*T) PCB Type: Single-Sided PCB</p>	20



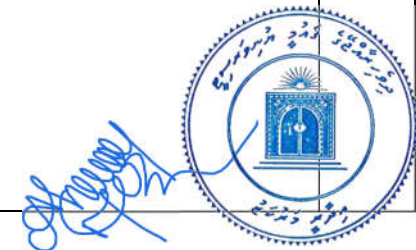
	 <p>Include: 1 x Single Sided Copper Clad Laminate PCB Circuit Board</p>	<p>Material: FR4 Glass Fiber Surface Finishing: Copper Clad Color: Copper Tone, Yellow</p>	
	<p>Prototyping PCB board</p>  <p>Include: 1 x Double Side Prototype PCB dot board</p>	<p>Dimension: 7x9cm Material: double Side Copper prototype pcb Universal Board Hole Diameter: about 1mm. Hole pitch: standard 2.54mm. for point to point DIY soldering</p>	50
	<p>Alligator Clips</p>  <p>Include: 1 x alligator clip with insulating protective cover (red color) 1 x alligator clip with insulating protective cover (black color)</p>	<p>Shell: insulating paste resin Withstand voltage: 300V~5A Connection method: solderable wire Rated current: 10A Length: 35mm</p>	20
<p>Group 10 (Others)</p>	<p>22 Gauge Wire Solid Core Hookup Wires set</p>  <p>Include: 1 x 22WG stranded core wire rolls each color (black, red, green and yellow) 60 x wire ties</p>	<p>for prototyping circuits and ideal as breadboard hookup wires Type: 22AWG /stranded 1x0.65±0.008mm² Total length: 33f/color Core Material: Tin Copper Insulation material: PVC Internal resistance: 63 Ω/km Max current capacity: 2.4A</p>	1



	1 x heat shrink tube set (black, red and yellow color) 1 x mini wire stripper 1 x box casing/ dispenser		
	DIP IC Sockets Adaptor Assortment Kit  Include: 1 x 8 pin DIP sockets 1 x 14 pin DIP sockets 1 x 16 pin DIP sockets 1 x 18 pin DIP sockets 1 x 28 pin DIP sockets 1 x 24 pin DIP sockets 1 x 40 pin DIP sockets	2.54mm Pitch DIP IC Sockets Adaptor Material: Plastic + Metal Pitch: 2.54mm / 0.1" Row to Row Distance(Approx): 7.5mm / 0.295"	1
	Buzzer  Include: 1 x Active Buzzer	Package: DIP Type: Active Buzzer Magnetic Rated voltage: 5V Terminals: 2 terminal Current: ≤25mA Frequency: approx. 2300Hz Min. Sound Output: 85 dB at 10cm Operating Temperature -20°C to 45°C Dimension: 12 x 9.5mm Pin Pitch : 7mm / 0.27	50
Group 10 (Others)	2.4G 10 Channel radio System Transmitter and Receiver for RC applications  Include: 1 x Transmitter 1 x Receiver	<ul style="list-style-type: none"> • Frequency: 2.4GHz ISM band (2400MHz~2485MHz); • Modulation mode: QSPK; • Channel bandwidth: 5.0MHz; • Spread spectrum: DSSS; • Adjacent channel rejection: ?38dBm; • Transmitter power: 100mW(PCB testing);?20dBm(3 meter air testing); • Operating Voltage: 8.6~15V; • Operating Current: ?95mA; • Control distance: 800 meters ground; • Channel: 10 Channel,8~10 channel are customizable; • Compatible model: Include all 120 degree and 90 degree swashplate helicopter,all fix wing and glider,five flying model; Simulator model: under the simulator	2



<p>Group 10 (Others)</p>	<p>ATMEGA16U2 Development Board For Arduino</p>  <p>Include: 1 x UNO R3 Development Board For Arduino Compatible 1 x USB cable</p>	<p>Microcontroller: ATmega328P Operating Voltage: 5V Input Voltage (recommended): 7-12V Input Voltage (limits): 6-20V Digital I/O Pins: 14 (of which 6 provide PWM output) Analogue Input Pins: 6 DC Current per I/O Pin: 40 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>	<p>20</p>
	<p>Prototype PCB Proto Shield V3 for Arduino UNO</p>  <p>Include: 1 x DIY PCB Board for Arduino Prototype Shield 2 x 1x8 2.54 Male Header 1 x 1x6 2.54 Male Header 1 x 1x10 2.54 Male Header 1 x 2x3 2.54 Female Header 1 x Reset Button</p>	<p>PCB Dimension: 68.58mm x 53.34mm / 2.7" x 2.1" PCB Thickness: 1.6mm Material: high quality FR-4 glass fiber PCB. All holes are plated through Top and bottom side are identical copper layers. Pads pitch: In the white frame range: 2.00mm / 0.079", hole diameter 0.8mm / 0.031". Other pads pitch: 2.54mm / 0.1", hole diameter 0.9mm / 0.035".</p>	<p>20</p>
<p>Group 11 (Electrical kits)</p>			
<p>Group 11 (Electrical kits)</p>	<p>Electric Drives Kit</p>  <p>Kit includes 1x three 3Φ-Inverters 1x 36V 4A DC motor with 2048 line encoder.</p>	<p>SCIAMBLE CUSP LAB KIT ELECTRIC DRIVES three 3Φ-Inverters with on-board controller, programmer and data-logger.</p> <p>36V 4A DC motor with 2048 line encoder.</p> <p>36V 4A DC motor.</p> <p>28V 7A PM motor.</p>	<p>1</p>



<p>1x 36V 4A DC motor. 1x 28V 7A PM motor. 1x 15V 2A Induction motor. 1x Oldham coupling Hub and 1 disk 3 x banana cables 1 x USB AB cable 1 x BNC-Banana Converter 1 x Motor safety enclosure 1 x set of screws (8 x M4 hex screws, 4 x M6 hex screws and wrench for M4 and M6)</p>	<p>15V 2A Induction motor.</p> <p>Oldham coupling Hub and 1 disk</p>
--	--

