MDP Component List – Jan 2024

1. **Robot car** Qty: 1 unit		2. **Resistor** – 1Kohm,¼ watt Qty: 1 pc

Mounted with the following items

- Hall Encoder Motors, 12V 1:30 reduction ratio with 2.54mm pitch, 6 pins- 2 units, **Model: MG513P3012V**
- Motor cables – 2pcs mounted
- Servo motor 4.8 - 7.4V with rods, **Model: HWZ020**
- Top acrylic black plate - with 18M3 and 4 M2 holes
- Bottom aluminium plate
- Battery pack - 11.5V, 3250mAH

3. **Resistor** –2.2Kohm, ¼ watt Qty: 1 pc	
4. ADC Cable Qty: 1 pc	

1a. Battery pack, 11.5V 3250mAH <u>mounted </u>on the car

The battery pack contains 3 units of NCR186050B, 3.6V, 3250mAh

1b. Right angle DC cable with Red/Black leads (connect to the Output port of the battery pack)

Battery Pack

Input

Switch (On/Off)

Output

Charging Light

Level 1

Level 2

Level 3
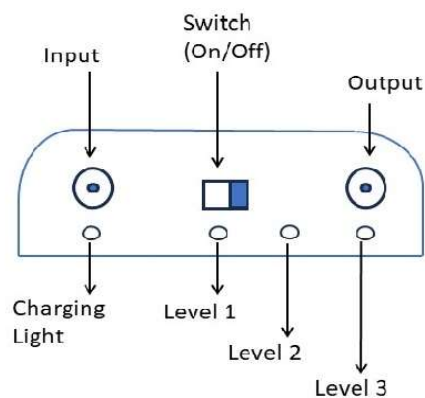
Power to STM32 board
a) Connect Bat Pack Output to STM32 board
b) Turn on Battery Pack Switch

Charge Battery Pack
a) Connect 3pin charger to Battery Pack Input
b) Turn On Battery Pack Switch
c) Ensure the "Red" Charging Light is on during charging
It will disappear after fully charged
d) Once Battery Pack is fully charged, the 3-pin charger must turn green.

5. **Tablet, Samsung Tab 7 Lite** Model: SM-T220/Grey Box: _____ S/n :_____ • (Original) USB A to type C cable • (Original) 3-pin USB Power Adaptor • Box Qty: 1 set		**6.** **STM32F407vet6** controller Board mounted on an acrylic protector with 4 stands Qty:1 set 6a. Top Acrylic transparent cover to be mounted <u>above Stm32F407vet6 board</u> Qty:1 pc	
7. **Battery charger** Li-ion with 3pin SG safety mark 2A Qty: 1 pc		**8.** **Rpi4b Model B – 4Gb** Qty: 1 pc	
9. **USB cable type C-C** -0.5m Qty: 1 pc		**10.** **Power supply adaptor** 5.1V 3A 3pin type C (for Rpi4b) Qty: 1 set	
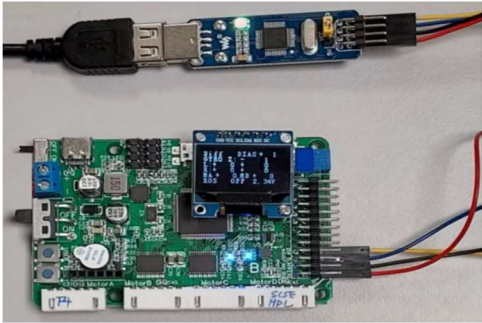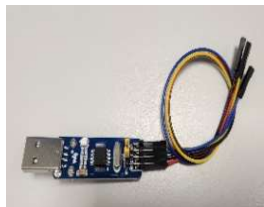
11. **HDMI to micro HDMI cable** Qty: 1 pc		12. **Sharp GP2Y0A21YK IR Sensor, small,** SEN-00020 Qty: 2 pcs	
13. **Sensor IR cable** Qty: 2 pcs		14. **- IR bracket (Orange)** Qty: 3 pcs - Bracket (Aluminium) Qty: 1 pc	
Connection for ST-LINK/V2 Serial Wire Debug (SWD) board to STM32F407vet6 Red – 3.3V Black – SWCLK Blue – GND Yellow - SWDIO		15. ▪ **ST-LINK/V2, Debuggers, USB2.0** – 1 pc ▪ **4-pin header** cable (Red/Blk/Blue/Yellow) - 1pc ▪ **Male USB A to Female USB A** USB Extension Cable, USB 2.0, 1.50m - 1pc	
16. **Ultrasonic Sensor**, HCSR04SEN0001 Qty: 1 pc			
17. **MicroSD memory card**, 32GB Qty: 1 set		18. **RPi Camera** Module V2 with Flexi cable Qty: 1 pc	
19. • **Cable USB A to micro B, 0.5m** Qty: 1 pc • **Cable USB A to micro B, 1.8m** Qty: 2 pcs		20. **Ribbon cable F/F** Qty: 10 pcs	

21. **Network cable, 2m** Qty: 1 pc		22. <u>**Tool Bag**</u> - Wire stripper cum cutter - screwdriver (-) - screwdriver (+) - Long nose plier Qty: 1 set	
23. • **M2 pillars** 10mm M/F, Qty: 20 pcs • M2 screws,6mm, Qty: 6pcs • M2 nuts, Qty: 6pcs For Rpi mounting		24. • **M3 Pillars** 25mm F/F Qty: 2 pcs • M3 screws,6mm, Qty: 4pcs • M3 nuts, Qty: 4pcs For IR camera mounting etc	
25. **Obstacle, Small** 100X100X150mmh Matt black Qty: 1 pc		26. **Card Reader (USB)- Transcend RDF5** Qty: 1 set	
27. **Handy storage box with cover** • Dimension: L44 X W30.5 X H22 cm Qty: 1 pc		28. **Photo images** Qty: 1 set of 35 images	
29. Digital Multimeter Model: UT33A+ Box: _____ S/n :_____ • (Original) Red and Black probes • Box Qty: 1 set			

<u>Suppliers for the components:-</u> <u>Singapore Robotic</u> *(sensors, motor, IR bracket)* Phone: +65-6570 1125, Fax: +65-6462 2051 sales@sgbotic.com	<u>Robot R Us</u> *(sensors, motor, IR bracket)* sales@robot-r-us.com +65 96569488
<u>Challenger Technologies Limited</u> *(SDcard reader)* Tel: 6318 9800, Fax: 63189801	<u>Element14 (Singapore)</u> *(Raspberry Pi, Sensors, USB cables, HDMI cables)* Phone: +65 6788 0200 , Fax: +65 6788 0300 Email: sg-sales@element14.com
<u>RS Components Singapore Pte Ltd</u> RPi4b, RPi Camera module V2 Phone: +65 6865 3400 Fax: +65 6865 3444	<u>BESCOM COMPUTER SYSTEMS PTE LTD</u> *(SDcard reader)* Tel: 62720808, Fax: 62720909
<u>Measurement & Metrology (S) Pte Ltd</u> *(Digital Multimeter)* Tel: 64831691, www.mnm.com.sg	<u>Unicell International Pte Ltd</u> *(Battery)* Tel: 6742 6330, 6742 6631 Fax: 6742-7763
<u>Silicon Electronics Company</u> (tools, cables) 10 Jalan Besar #03-02 Sim Lim Tower Tel: 62969006 Fax 2969005	<u>Dream Catcher Technologies Private Limited</u> Tel: +65-62981892 (Nano car parts)
<u>TOYOGO SUPERMART (Storage box)</u> 21 Lor 8 Toa Payoh, Toyogo Bld SG 319256 Singapore Phone: +65 62518747	<u>Measurement & Metrology (S) Pte Ltd</u> Digital Multimeter model: UT33A+