GENIBOT

TEST GUIDE FOR CERTIFICATION

GB1-ENTGC0219L3 Feb 19, 2020

GENIBOT

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Technical Support and Product Information
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IMPORTANT

WARNING REGARDING USE

This device complies with part 15 of the FCC Rules. operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been test and found to comply with the limits for Class B digital device, pursuant to part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment complies with the FCC RF exposure limits set forth for an uncontrolled environment. this equipment must not be re-located or operating in conjunction with other antenna or transmitter.

Statements on symbols, terms and conventions you may see in this guide give the information that you should consider installing and operating GENIBOT.

GENIBOT is only designed for a level of reliability suitable for educational smart toy. It is not allowed for use in or connection with any equipment, material or system whose failure to perform can reasonably be expected to cause significant injury to a human.
In any application this hardware can be impaired by adverse factors, electrical power supply, computer hardware and software malfunctions, unexpected uses or errors on users. If GENIBOT is used and operated with non certified devices or in any manner not specified by the manufacturer, the protective features of GENIBOT may be damaged and it is not certified for use in hazardous locations.
The materials of GRNIBOT are provided “as is,” and is subject to being changed, without prior notice to users.

GENIROBOT shall not be liable for events, errors, incidental or consequential damages in connection with improper use, performance of this document or of any information described herein.

AT A GLANCE

FEATURES OF GENIBOT GB1

Power Source	DC Power Adaptor (DC 5V, Current > 1A)
Battery	Lithium Polymer 3.7V, 1000mAh
Connectivity	Bluetooth LE 5.0 Multiprotocol (Distance < 30m, RSSI > -90dBm)
Sensors and LED	Ambient Light Sensors (4) and Green LEDs (4) for Line Following and Grid Detection Acceleration (State of the-Art 3-axis, Range -2g to +2g) RGB Color LED (4) for Making and Changing Color in HSV or RGB Color Space Red LED Indicator for Charging Battery OID Optical Image Sensor and Decoder for Recognizing Unplugged Coding Card
Speaker	Speaker (8Ω 1.0W) and PCM Class D Audio Amplifier
Memory	SLC NAND Flash Memory 128MiB (134MB)
Motor	Stepper (50:1 Geared, 360DPS/1000SPS)
Debug Port	Debug Port for Development and Factory Mass Production
CPU	ARM Cortex M4 (32bit, Support for BLE 5.0 Multiprotocol)

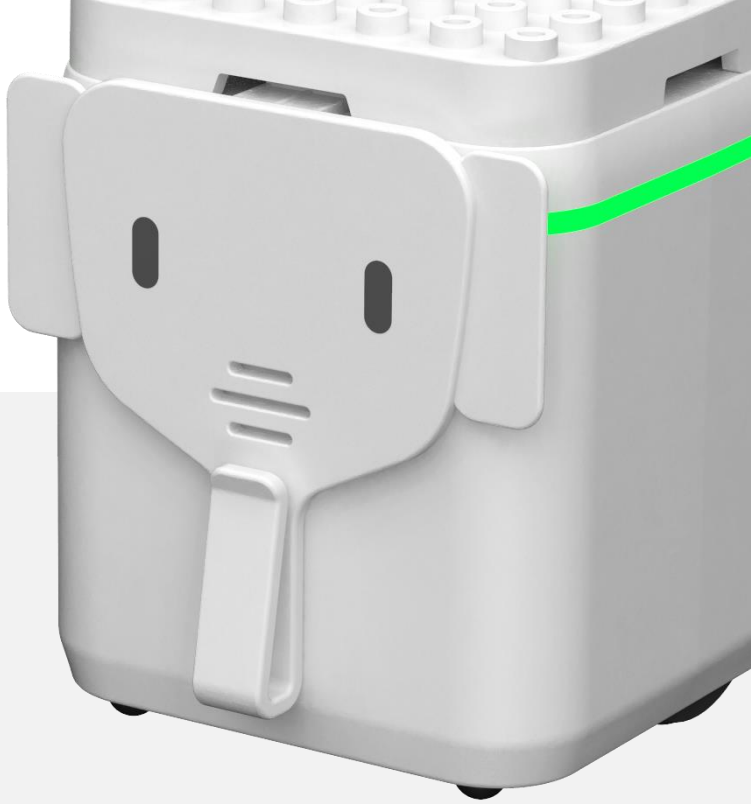
AT A GLANCE

BUTTON AND COLOR LED

Power Button	To turn on GENIBOT press the Power button. To turn off GENIBOT press and hold the Power button for more than two seconds. To start Unplugged coding when coding data set is stored in memory. To advertise Discovery name of GENIBOT while Star robot or a smart device is scanning GENIBOTs.
Color LED	Color will be changed when GENIBOT is connected to Star robot or smart device but also Color will be indicated to matching Card color when it is detected by GENIBOT image sensor

UNPLUGGED TEST

FOR PERIPHERALS

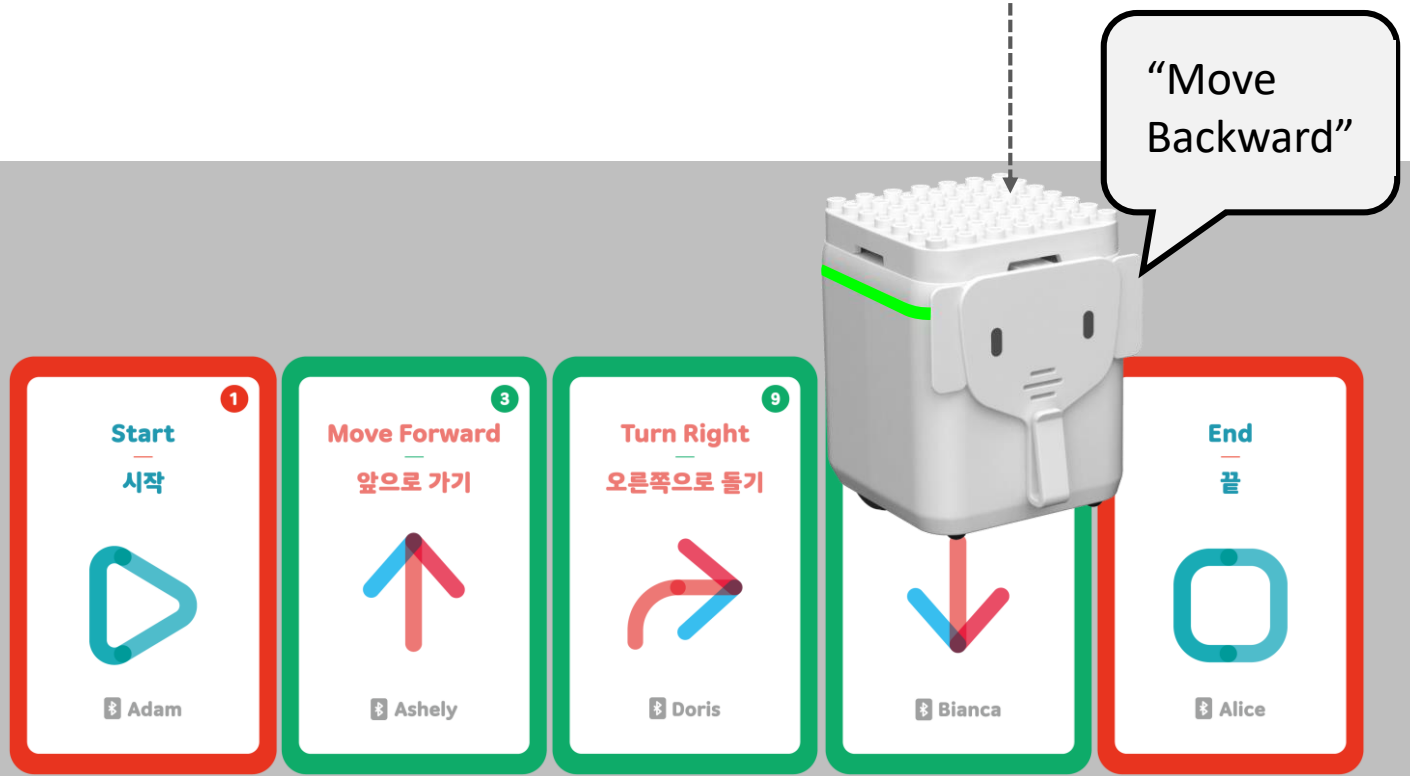


TEST1 UNPLUGGED CODING

To test Unplugged coding with GENIBOT that the Optical image sensor will automatically detect it and its card name will be notified through the Speaker. GENIBOT can start as simply as make a coding data set.

1 TAP UNPLUGGED CARD

Tap Unplugged coding card for programming the robot. Coding data set should be placed between Start and End card. When making coding data set completes GENIBOT will start after 2seconds that last card in data set should be End card.



2 PRESS BUTTON TO START UNPLUGGED DATA SET IN MEMORY

If Unplugged data set is in volatile Flash memory GENIBOT can start with its data set again by pressing the Power button.

TEST2 MOTOR

To test motor tap on Rest card and then Number 0 card.

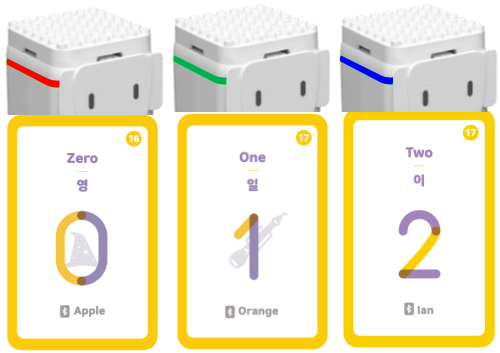
1 **CHECK SPEAKER, MOTOR AND COLOR LED**

If you Power on the robot you can hear a short tone generated from speaker and Green will be blinking every 0.5s. The following steps will be sequentially repeated when Power button is pressed.

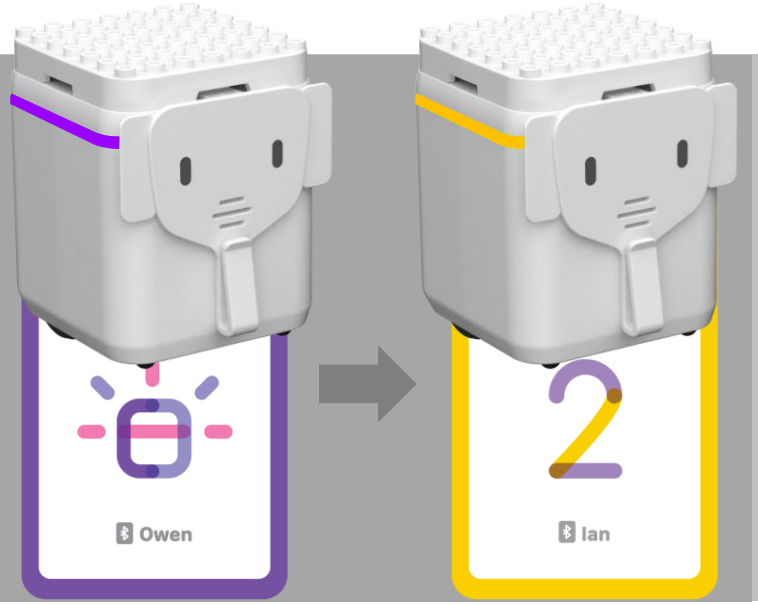
1. Press Power button and check that the robot move forward and blinking Green.
2. Press Power button and check that the robot move backward and blinking Red.
3. Press Power button and check that the robot stop and indicating white.
4. Press Power button and check blinking blue.

TEST 3 COLOR LED

To change color on LED of the root touch Card Light and then tap Number card that color index is defined as: Red 0, Green 1, Blue 2.



Red 0 Green 1 Blue 2

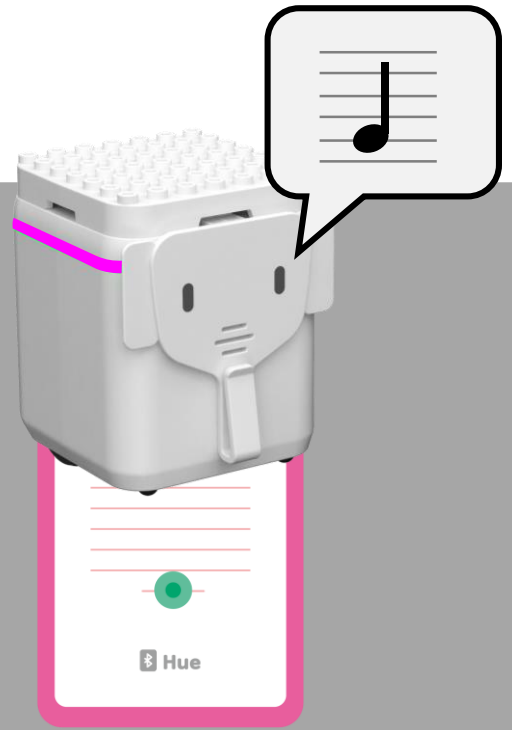


1 SET COLOR ON LED

To change LED color tap Light and Number. Color can be changed in Hue space as Red, Green, Blue.

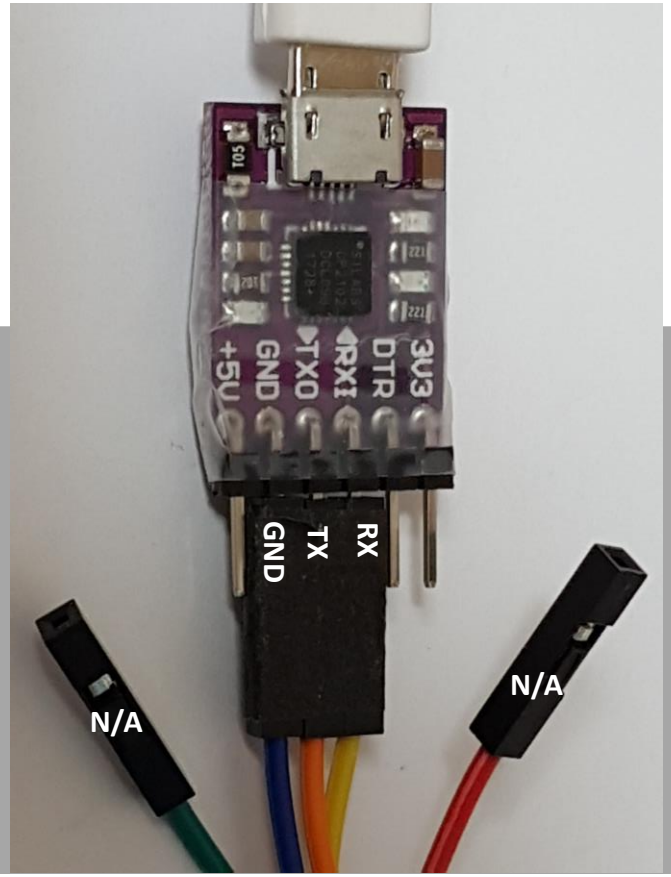
TEST4 SPEAKER

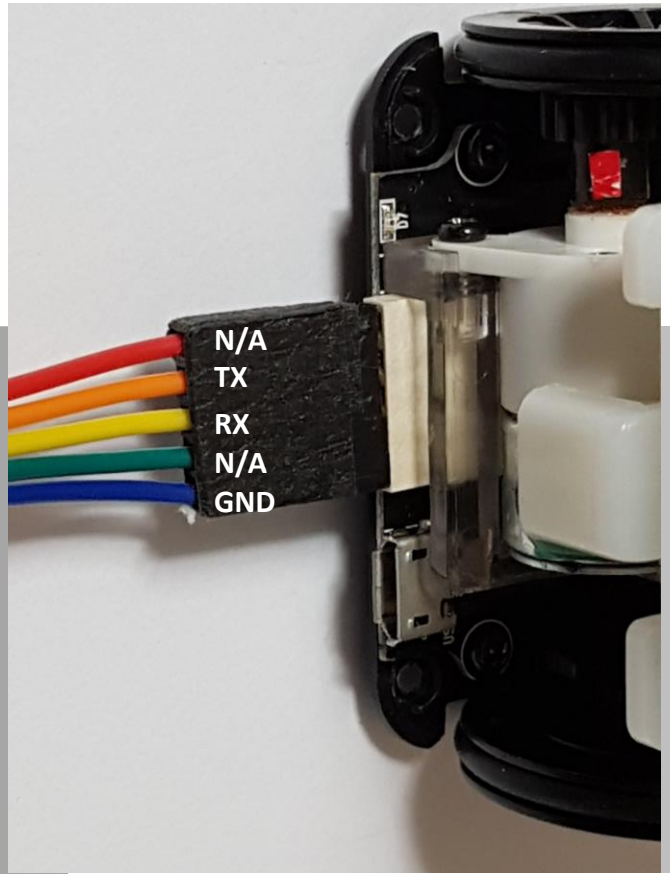
To make Piano chord sound with GENIBO tap Music card to generate Piano sound. Because the Speaker baffle of each GENIBOT will loudly amplify a sound, it will be overlapped or its chord can be easily created.



DEBUGGING PORT

Debugging port can be used to test peripherals for development and to download wav zip file for factory mass production.





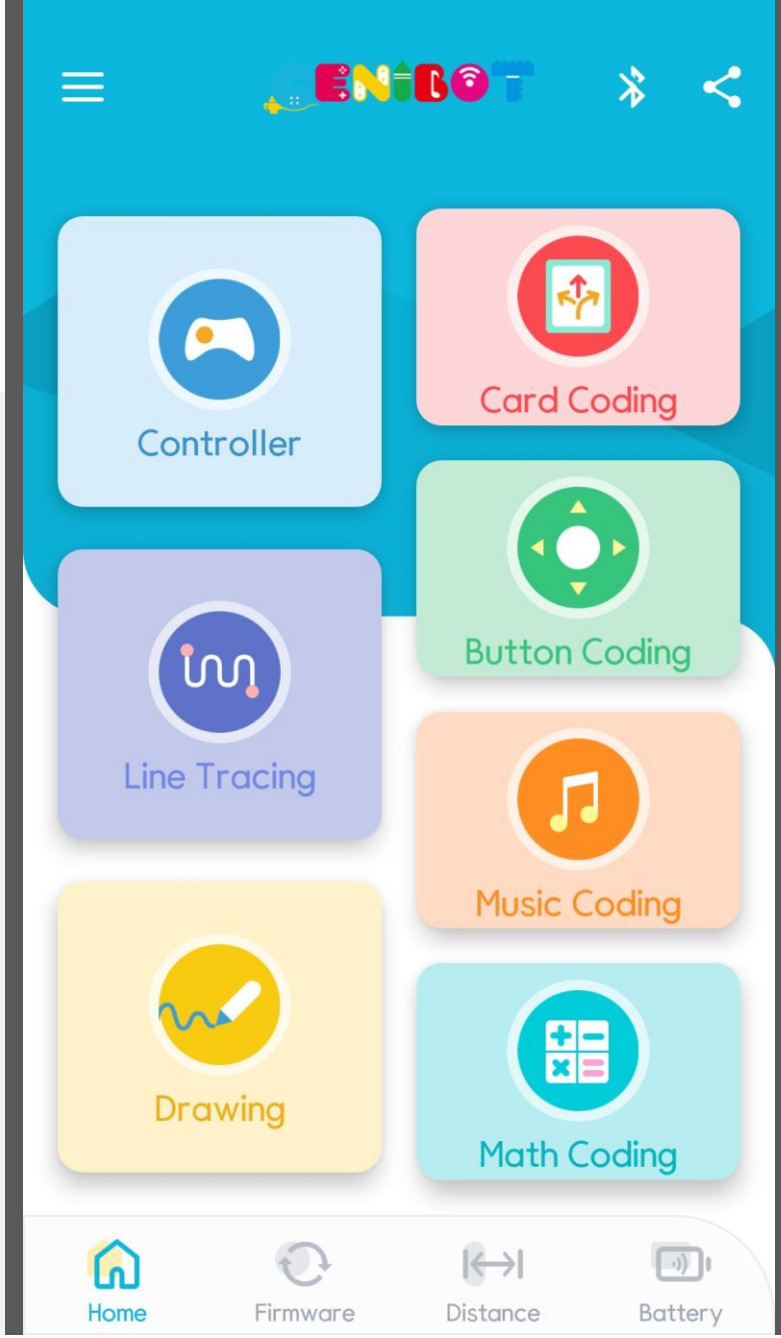

```
Python 3.7 (64-bit)
...
b'Lights 1546 1555 1586 1579 Acceleration 0.02 0.01 1.01
b'Lights 1529 1541 1568 1559 Acceleration 0.02 0.01 1.01
b'Lights 1522 1538 1561 1555 Acceleration 0.02 0.01 1.01
b'Lights 1521 1532 1556 1551 Acceleration 0.02 0.01 1.01
b'Lights 1518 1532 1554 1550 Acceleration 0.02 0.01 1.01
b'Lights 1516 1527 1552 1547 Acceleration 0.02 0.01 1.01
b'Lights 1515 1526 1549 1546 Acceleration 0.02 0.01 1.01
b'Lights 1514 1523 1551 1544 Acceleration 0.02 0.01 1.01
b'Lights 1515 1524 1551 1543 Acceleration 0.02 0.01 1.01
b'Lights 1513 1522 1548 1542 Acceleration 0.02 0.01 1.01
b'Lights 1512 1522 1548 1542 Acceleration 0.02 0.01 1.01
b'Lights 1513 1525 1545 1541 Acceleration 0.02 0.01 1.01
b'Lights 1509 1519 1545 1541 Acceleration 0.02 0.01 1.01
b'Lights 1510 1522 1543 1540 Acceleration 0.02 0.01 1.01
b'Lights 1510 1521 1545 1539 Acceleration 0.02 0.01 1.01
b'Lights 1510 1519 1546 1539 Acceleration 0.02 0.01 1.01
b'Lights 1511 1521 1544 1540 Acceleration 0.02 0.01 1.01
b'Lights 1510 1518 1544 1542 Acceleration 0.02 0.01 1.01
```

1 **DEBUGGING PORT**

Its terminal port in details is as left figure and test data for development is shown above.

GENIBOT APPLICATION

FOR BLUETOOTH CONNECTION TEST



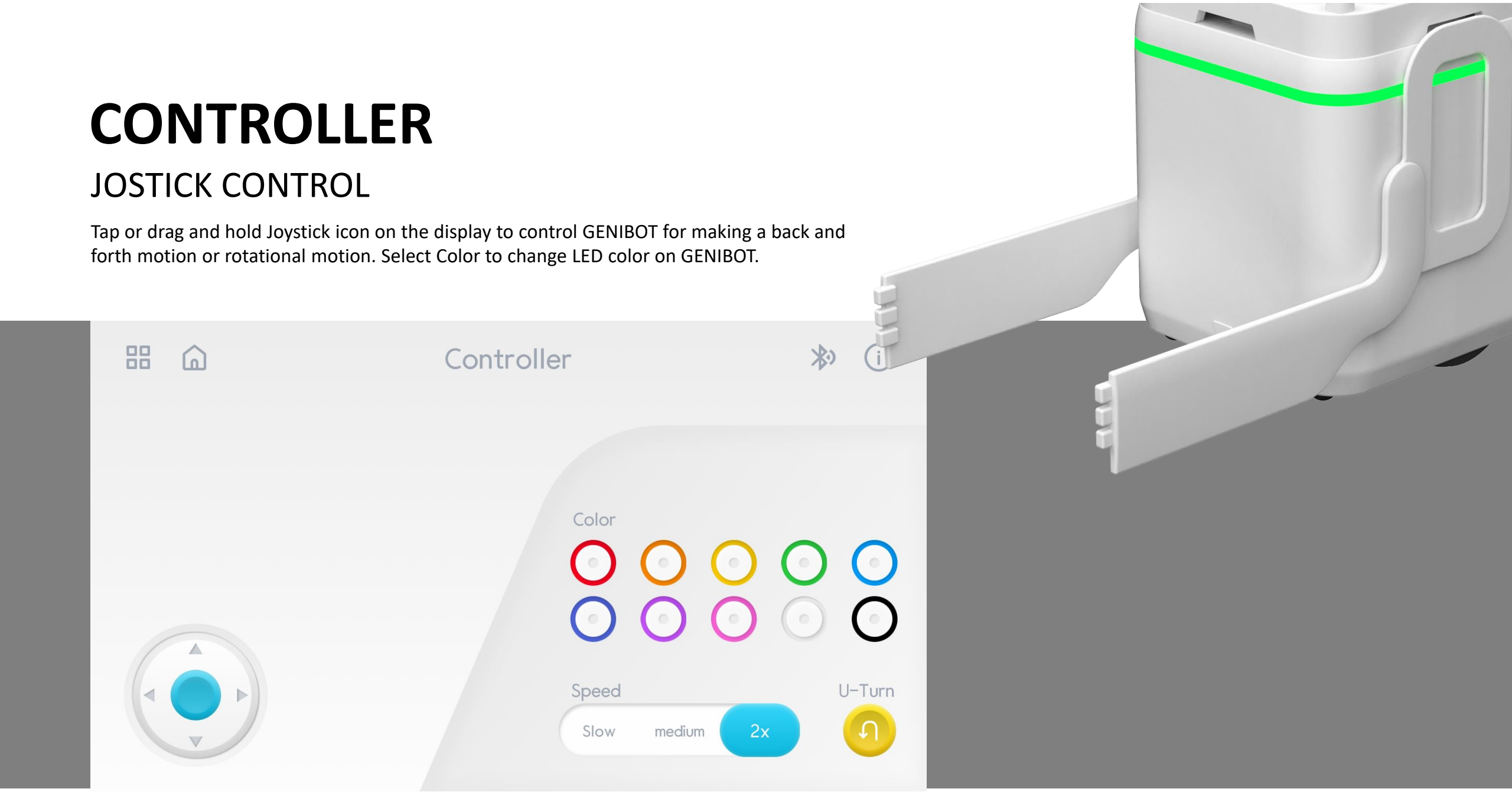
START APPLICATION

To start GENIBOT application GENIBOT must be connected to your smart device for Android or iOS. When the Power button of GENIBOT is pressed Discovery name of GENIBOT will be appeared in Bluetooth scan list on screen. After connection you can choose and to start on Home screen.

CONTROLLER

JOSTICK CONTROL

Tap or drag and hold Joystick icon on the display to control GENIBOT for making a back and forth motion or rotational motion. Select Color to change LED color on GENIBOT.



OPERATION ALERT

WARNING ON GENIBOT

LOW BATTERY NOTIFICATION
Low battery notification appears in a few seconds that Yellow color is blinking 4 times too fast and GENIBOT will be turned off when the battery power gets low as set by its lower limit level.

POWER OFF NOTIFICATION AFTER SLEEP TIMEOUT
Power off notification appears in a few seconds that White color is blinking 4 times too fast and GENIBOT will be turned off after Sleep timeout 10 minutes.

GENIBOT Test Guide for Certification

Document Edition
Part Number: GB1-ENTGC0219L3 First Edition, Feb 17, 2020
Further Documentation
Additional documentation for your GENIBOT or for the latest documentation, refer to GENIROBOT web site at www.genirobot.com