

Smart Biped Robot Dance Robot from eBay (doanas) purchased 3 Feb 2021

Connection board similar to Seed RobotBit but also has an inbuilt IR receiver. The LEDs are RGB using NeoPixel driver and are connected to P16. Instructions for board downloaded, show how to calibrate battery charging when new battery fitted.

DVD mostly in Chinese. Some useful getting started guides. Seven hex programs.

micro:bit runs the Welcome demo program not related to robot, so needs programming.

Editor is online at <https://makecode.microbit.org/#editor> Offline editor requires 64 bit and > Win 7 (older version on DVD, haven't tried it)

Supplied hex files

Programs will load as-is, but a lot of the text in the block editor is in Chinese.

Extensions used in all programs on DVD:

Cbit_IR for IR control (equivalent to https://github.com/zhuning239/cBit_IR, type this into the extensions search box. Have to then rewrite code, won't apply to existing.

Makerobot low level servo control and ultrasonic avoidance. Nearest equivalent extension available in editor is Robotbit

Sonar for ultrasonic (available extension in editor)

Sloth High level robot control (walk left etc), IR avoidance and sound activation (an extension of the same name is available in the editor, but only two servos work if this extension is loaded or used whereas when loaded from DVD the extension works OK).

Neopixel RGB LEDs (available extension in editor)

Hex Programs

0. Servo offset
1. Walk forward, back, turn left, turn right
2. Walk around on a loop and change LED colours
3. Sound activated walk
4. Obstacle avoidance (using IR)
5. Obstacle avoidance (using ultrasound)
6. IR remote control (on pin P8), + reverse, >| | right, CH Forward, |<< Left

Tests

1. Programs run OK as supplied.
2. CBit_IR from Github works OK for supplied remote control
3. Robotbit standard extension allows basic servo control
4. Sloth standard extension only controls one leg! Whereas the DVD version works OK.

Code Written

1. **DVD Calibration:** Runs the calibration test, see Sloth documentation for explanation.
2. **SlothRobot:** Standard Sloth extension, only two servos work
3. **RobotBit:** Low level servo control
4. **DVD6 IR:** IR control using Chinese sloth extension, walks one step on each button press
5. **DVD6 V2:** IR control using Chinese sloth extension, can select continuous walking or one command at a time, reset mode (stand still after each command). ActionMode corresponds to command numbers, plus 0 for stand still.
6. Remote layout for last two programs (red for V2 only)

DVD sloth commands list (as they are in Chinese!)

Walk (1)	Walk back (2)
Turn Left (3)	Turn Right (4)
Moonwalk left (5)	Moonwalk right (6)
Shake Left (7)	Shake Right
Up/Down	Swing
Walk Boldly	Walk Boldly Backwards
Walk Shyly	Walk Shyly Backwards
Big Swing	-

CH- Toggle continuous walking Reset Steps per command (button 2) to 1 If on, top left LED lit	CH Walk forward (1)	CH+ Toggle reset mode If on, top right LED lit
Prev Turn Left	Next Stand Still (0)	Play Turn Right
Minus Slow down by 5	Plus Walk backward (2)	EQ Speed up by 5
0 Moonwalk Left (5)	100 Up/Down (9)	200 Moonwalk Right (6)
1 Shake Left (7)	2 Increment Number of steps per command by 1	3 Shake Right (8)
4 Walk Boldly (11)	5 Swing (10)	6 Walk Boldly Back (12)
7 Walk Shyly (13)	8 Big Swing (15)	9 Walk Shyly Back (14)

LED Screen Layout

Cont Mode Indicator				Reset Mode Indicator
Steps Adj (toggles on button press)		Mode Set (toggles on setting any modes)		Speed Adj (toggles on button press)

Calibration Values

Top Left indicator (1st row on code block) -16

Top Right indicator (2nd row on code block) -21

Bottom Left indicator (3rd row on code block) -12

Bottom Right indicator (4th row on code block) -13