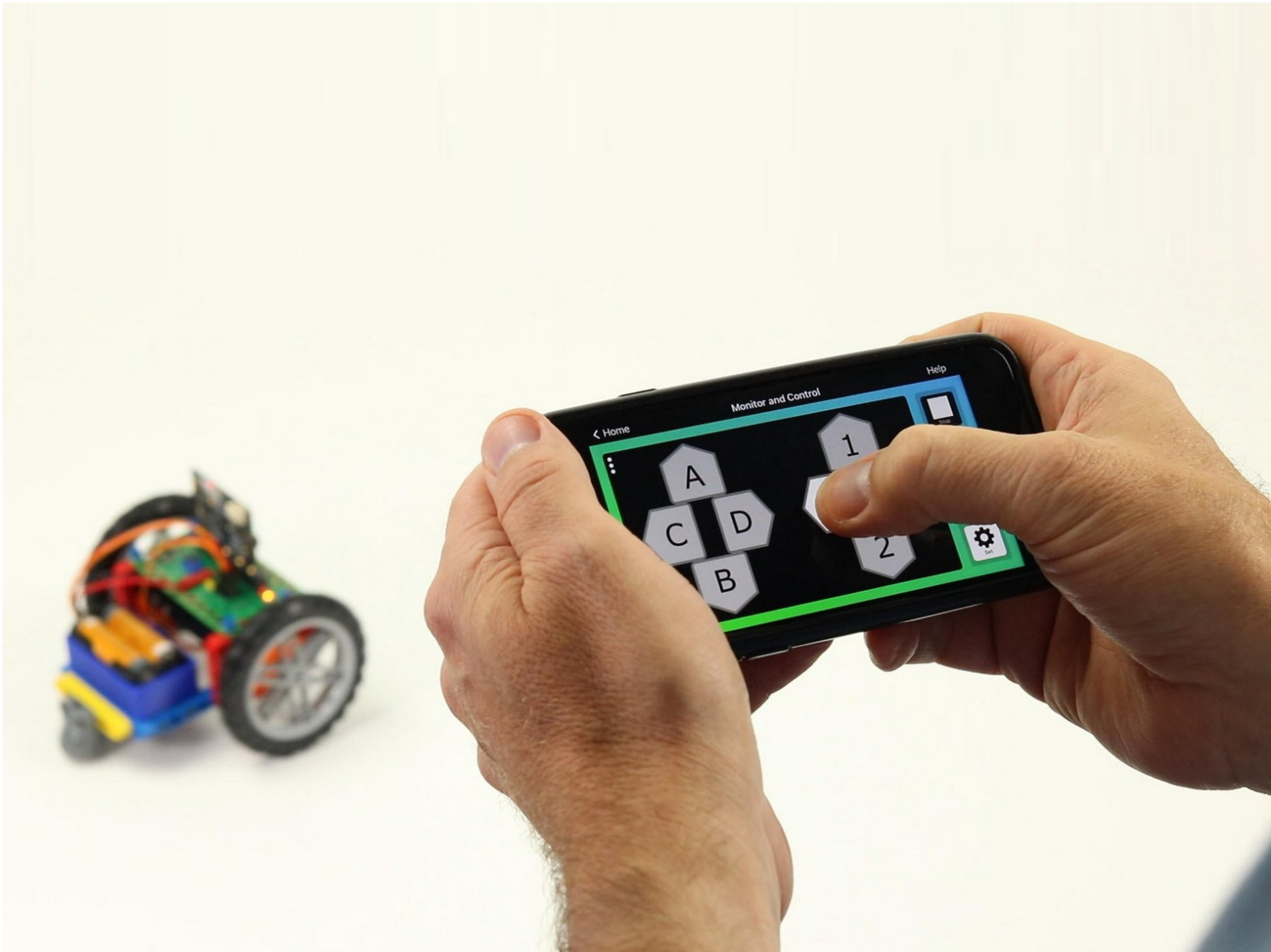




# Tank Bluetooth Control

Control your Tank using Bluetooth from a phone or tablet.

Written By: Pete Prodoehl



## INTRODUCTION

Control your Tank using Bluetooth from a phone or tablet.

Using a "DPAD" controller you can make the Tank forward & backward, and spin in either direction. You can also open and close the Gripper and adjust the speed of the Tank.



### TOOLS:

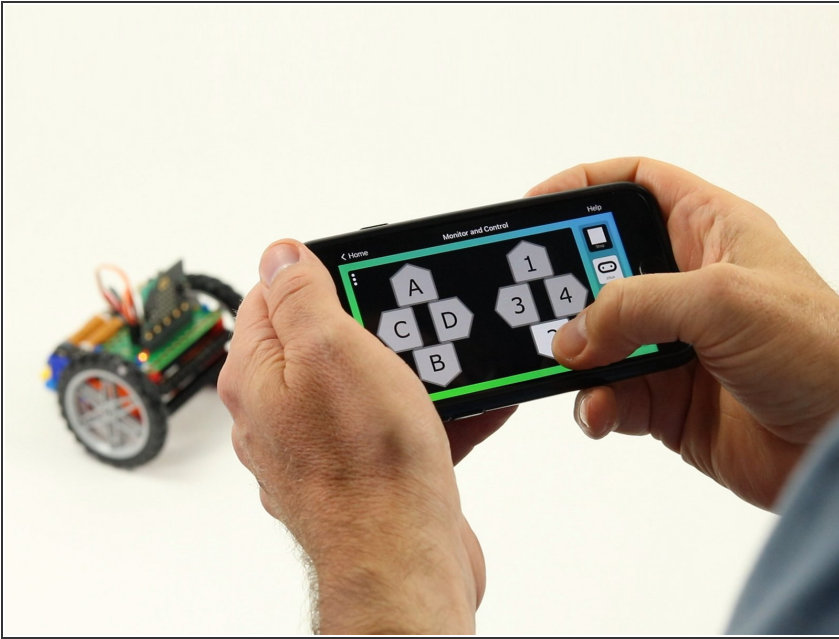
- [Computer](#) (1)



### PARTS:

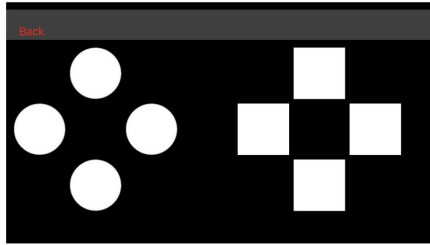
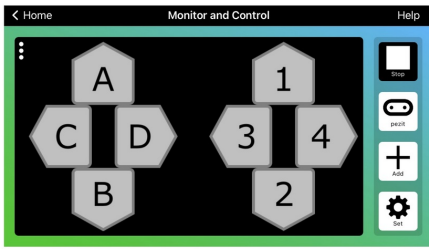
- [Bit Board Rover](#) (1)

## Step 1 — Bluetooth Control



- You can control your Tank using Bluetooth from a phone or tablet along with an app that supports the micro:bit's Bluetooth Messaging Event System.
- If you are using an iPhone or iPad you can use the **DPAD** controller found in the “Monitor & Control” section of the micro:bit iOS app.
  - Find the iOS app here:  
<https://apps.apple.com/gb/app/micro-bit/>
- If you are using an Android phone or tablet you can use “Bitty Controller” which has its own “DPAD controller” option.
  - Find Bitty Controller in the Google Play store here:  
<https://play.google.com/store/apps/details?id=com.bittysoftware.bittycontroller>
  - Find more information about Bitty Controller here:  
<https://bittysoftware.blogspot.com/p/app...>

## Step 2 — The DPAD



- ⓘ The DPAD may look familiar if you've ever used a video game controller.
- The DPAD will control the Tank in the following manner:
  - 1 will move forward, 2 will move backwards.
  - 3 will spin to the left, 4 will spin to the right.
  - C will open the gripper, D will close the gripper.
  - A will increase speed, B will decrease speed.
- 📌 Keep in mind you can change what any of these controls do by editing the code.

## Step 3 — Load the Code



⚠ If you've never used a micro:bit before you'll want to check out this guide: [Bit Board V1 Setup and Use](https://makecode.microbit.org/_L9TVkqXcx...)

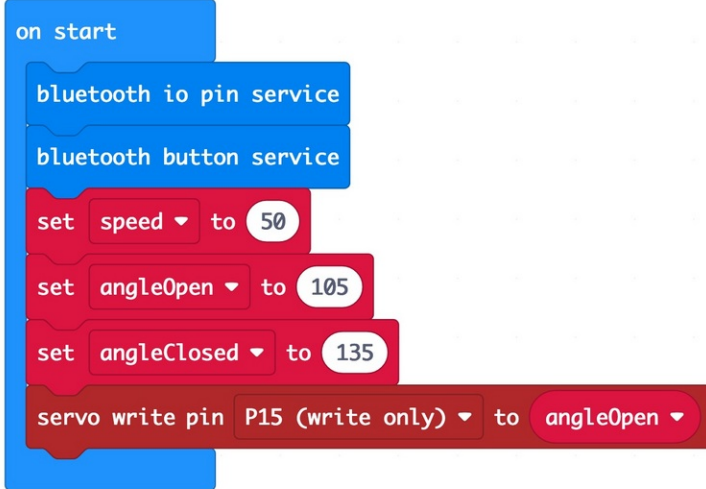
- We're going to load the following code for our **Tank Bluetooth** program:  
[https://makecode.microbit.org/\\_L9TVkqXcx...](https://makecode.microbit.org/_L9TVkqXcx...)
- ⓘ Note: This code will work with either of the apps mentioned in Step 1.

## Step 4 — Pair with micro:bit

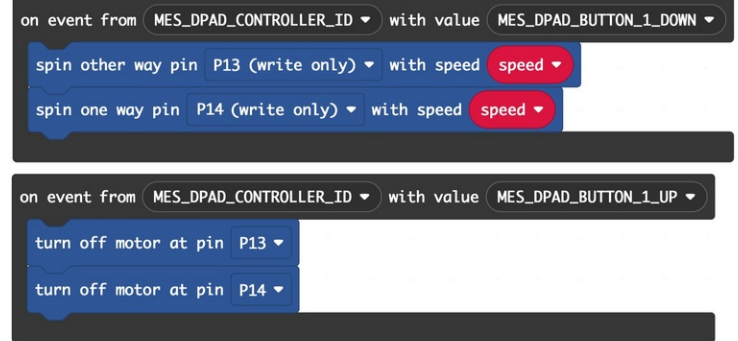


- You'll need to pair the phone or tablet with the micro:bit in your Tank.
- Please see the extensive guide to pairing provided on the [makecode.microbit.org](https://makecode.microbit.org/v0/refere...) web site:  
<https://makecode.microbit.org/v0/refere...>
- Once you pair your device with the micro:bit on the Tank you can use the DPAD to control it!

## Step 5 — Take it Further - Exploring the Code



```
on start
  bluetooth io pin service
  bluetooth button service
  set speed to 50
  set angleOpen to 105
  set angleClosed to 135
  servo write pin P15 (write only) to angleOpen
```



```
on event from MES_DPAD_CONTROLLER_ID with value MES_DPAD_BUTTON_1_DOWN
  spin other way pin P13 (write only) with speed speed
  spin one way pin P14 (write only) with speed speed

on event from MES_DPAD_CONTROLLER_ID with value MES_DPAD_BUTTON_1_UP
  turn off motor at pin P13
  turn off motor at pin P14
```

- The **on start** block has two commands to enable the Bluetooth services we need.
- The rest of the code in the **on start** block is just like other Tank code.
- The other blocks are all on event blocks, which are looking for data from the **MES\_DPAD\_CONTROLLER\_ID** with a specific value.
- Besides the on start block, each dark gray block looks for a button to be down or up, and reacts appropriately.
- While these **Control** blocks look a bit more complex than other blocks, they are pretty easy to explore and use in your code.