

Budgee™ Robotic Assistant Owner's Manual

Budgee Bot™ - The Handy Helper Bot™

5E™
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IMPORTANT SAFETY INFORMATION

THIS PERSONAL ASSISTANT ROBOT CAN BE USED BY CHILDREN AGED FROM 15 YEARS AND ABOVE AND PERSONS WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPABILITIES OR LACK OF EXPERIENCE AND KNOWLEDGE IF THEY HAVE BEEN GIVEN SUPERVISION OR INSTRUCTION CONCERNING USE OF THE PERSONAL ASSISTANCE ROBOT IN A SAFE WAY AND UNDERSTAND THE HAZARDS INVOLVED. CHILDREN SHALL NOT PLAY WITH THE PERSONAL ASSISTANCE ROBOT. CHILDREN WITHOUT SUPERVISION SHALL NOT PERFORM CLEANING OR USER MAINTENANCE.

CAUTION: DO NOT EXPOSE THE ELECTRONICS OF YOUR PERSONAL ASSISTANCE ROBOT, ITS BATTERY, OR THE WALL-CHARGER. THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. PLEASE ENSURE VOLTAGE RATING FOR WALL-CHARGER MATCHES STANDARD OUTLET VOLTAGE.

Notice: Your robot contains a software interface for the purpose of enabling the manufacturer to provide updates to the internal firmware if any such updates are made available to users. Any attempt to access, retrieve, copy, modify, distribute or otherwise use any of the robot software is strictly prohibited.

Always exercise caution when operating your robot. To reduce the risk of injury or damage, keep these safety precautions in mind when setting up, using and maintaining your robot:

GENERAL SAFETY INSTRUCTIONS

- Read all safety and operating instructions before operating your robot.
- Retain the safety and operating instructions for future reference.
- Heed all warnings on your robot, battery, and wall-charger, as well as in the owner's manual.
- Follow all operating and use instructions.
- Refer all non-routine servicing to Five Elements Robotics.

USE RESTRICTIONS

- Use Budgee™ only in dry environments.
- Do not spray or pour liquids on Budgee™.
- Your Budgee™ can be used in wheelchair accessible areas. It is for both indoor and outdoor use.
- Do not use your Budgee™ in or around standing water (pools, puddles, etc.) or anywhere in which it may get wet, it is not a waterproof device.
- Your Budgee™ is not a toy. Do not sit or stand on this device. Small children and pets should be supervised when your robot is operating.
- Your Budgee™ does not contain any safety restraints, do not use this device to carry or hold children or pets.
- Store your Budgee™ in room temperature environments only.
- Clean with a dry cloth only.
- Do not use this device to carry or hold anything that is burning or smoking.
- Do not use this device to carry or hold anything that is excessively hot as it may melt the plastic body.
- Before using this device, pick up objects like clothing, loose papers, pull cords for blinds or curtains, power cords, and any fragile objects. If the device passes over a power cord and drags it, there is a chance an object could be pulled off a table or shelf.
- Your Budgee™ is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the robot by a person responsible for their safety.
- Children should be supervised to ensure they do not play with the robot. Children without supervision shall not perform cleaning and maintenance.
- Do not place or hang anything from the neck or head of your Budgee™.
- Do not use Budgee™ on rough, uneven terrain. Budgee™ is for use only on level paved surfaces, indoor flooring, and indoor carpeting (not deep shag).

- Do not use Budgee™ on slopes exceeding 1:12; one foot of surface per inch of rise.

BUDGEE™ SPECIFICATIONS

Base Size (Upright)	22.5 in x 18 in x 42 in (L x W x H)
Base Size (Folded)	22.5 in x 18 in x 18 in (L x W x H)
Weight	22 lbs.
Payload	50 lbs.
Communication Protocols	802.15.4 ZigBee (Transmitter), Bluetooth 4.0 Low-Energy (BLE) – (iOS and Android connection)
Basket	Basket Size: 20 in x 18 in x 16.5 in (L x W x H) Fabric: Black 400 denier Nylon
Sensors	“Follow Me”: 40 kHz Ultrasonic Ranging Ranging Accuracy: +/- 1 inch Obstacle Detection: 2 Zone Sonar Detection (Front and Rear) Cliff Detection: 2 Zone Infrared Detection (Front and Rear)

BUDGEE™ BATTERY

Battery	14.4V Lithium Ion
Capacity	7.8Ahr
Run Time	10 hours (Typical Usage)
Recharge Time	3.5 hours

BUDGEE™ TRANSMITTER

Size	1.625 in x 1.625 in x 1.125 in (L x W x H)
Weight	1.6 oz.
Battery	3.7V 400mAh Lithium Ion
Charger	5V micro USB
Communication Protocols	802.15.4 ZigBee
Transmitter	40kHz Ultrasonic Ranging
Transmitter Range	2.5 m

BUDGEE™ PACKAGING

In your Budgee™ packaging, you will receive:

- Budgee™ Robot
- Budgee™ Transmitter with two belt clips, Velcro strips and adhesive pads
- Basket, Fabric bag with lid
- Budgee™ Charger (18V 2 A AC/DC Power Adapter)
- Budgee™ Transmitter Charger (5V 1A USB wall adapter and 3 ft. USB cable)
- Budgee™ Robotic Assistant Owner's Manual
- How to Use Your Budgee™ Transmitter pamphlet
- Budgee™ Quick Start Guide

If for any reason you are missing any of the previous items, please contact Five Elements Robotics Customer Support at 1-800-681-8514.

BUDGEE™ FEATURES

Works Indoors and Outdoors

Budgee™ is great for operation inside and outside. He can travel over sidewalks and streets, and is able to safely travel up and down handicap ramps

Budgee™ Folds Up

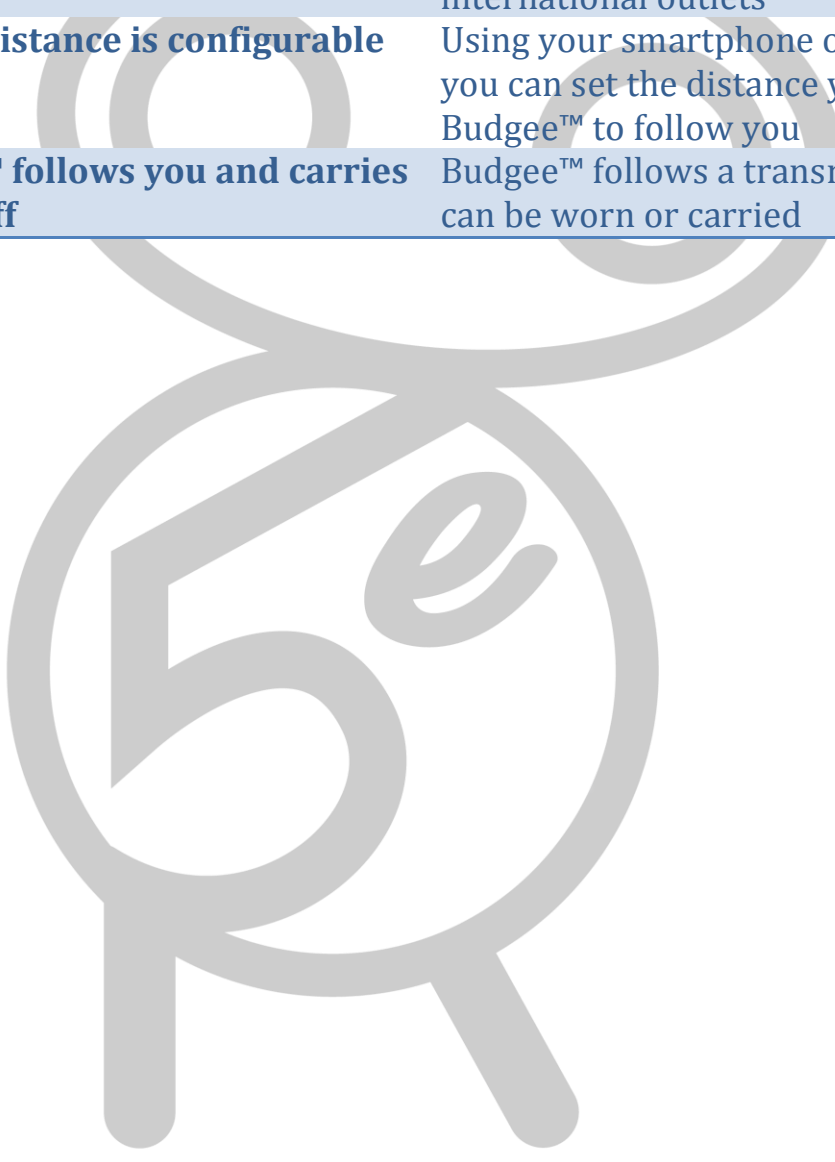
Budgee™ folds up for easy transportation to your destination. He fits easily in the trunk of a car or in a tight space for storage

Lasts up to 10 hours on a rechargeable battery

Budgee™ can operate for up to 10 hours on a rechargeable battery, during typical usage

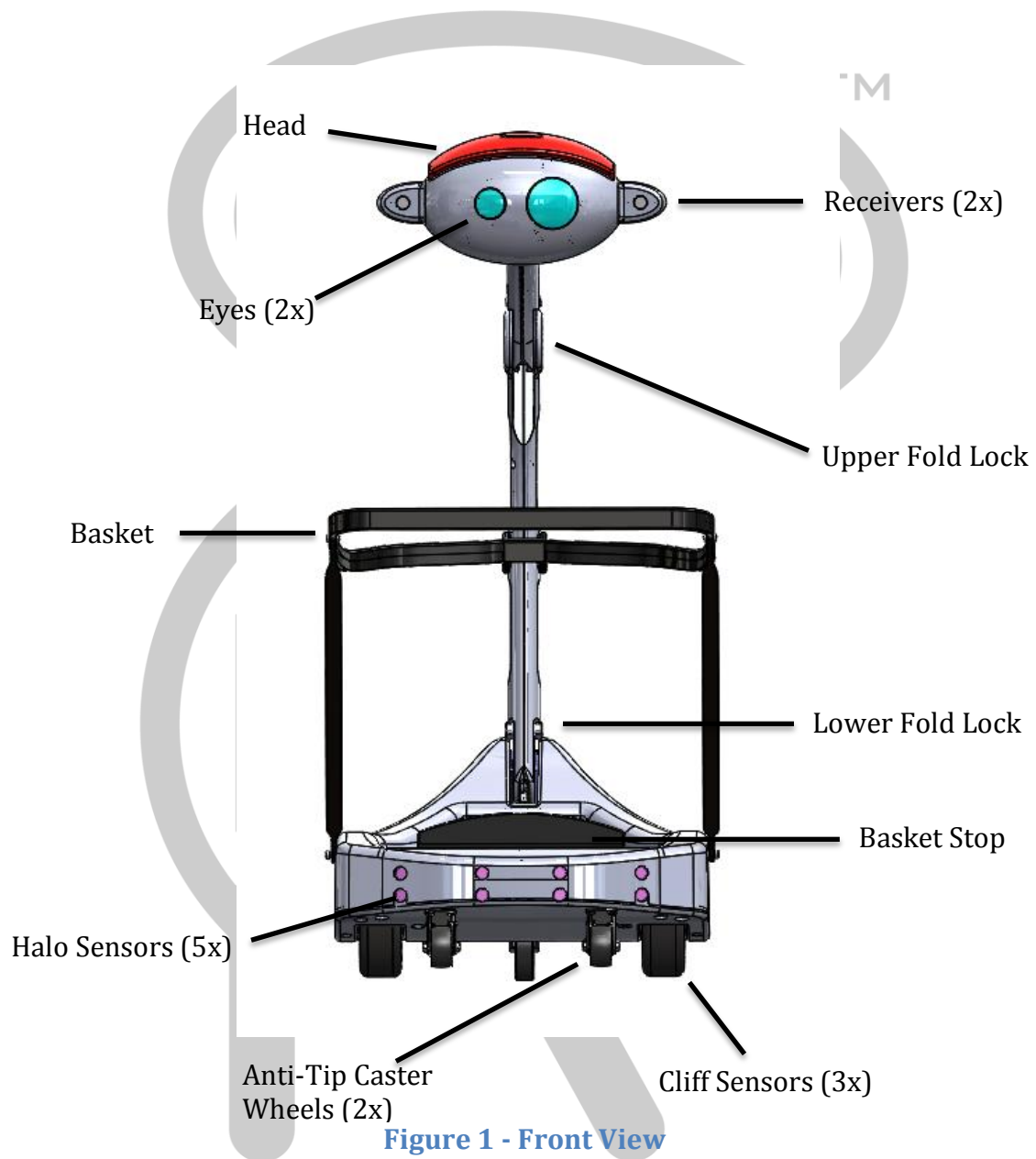
Budgee™ talks to you through your handheld device

He greets you warmly when he is turned on. Also he will tell you his status such as when his battery

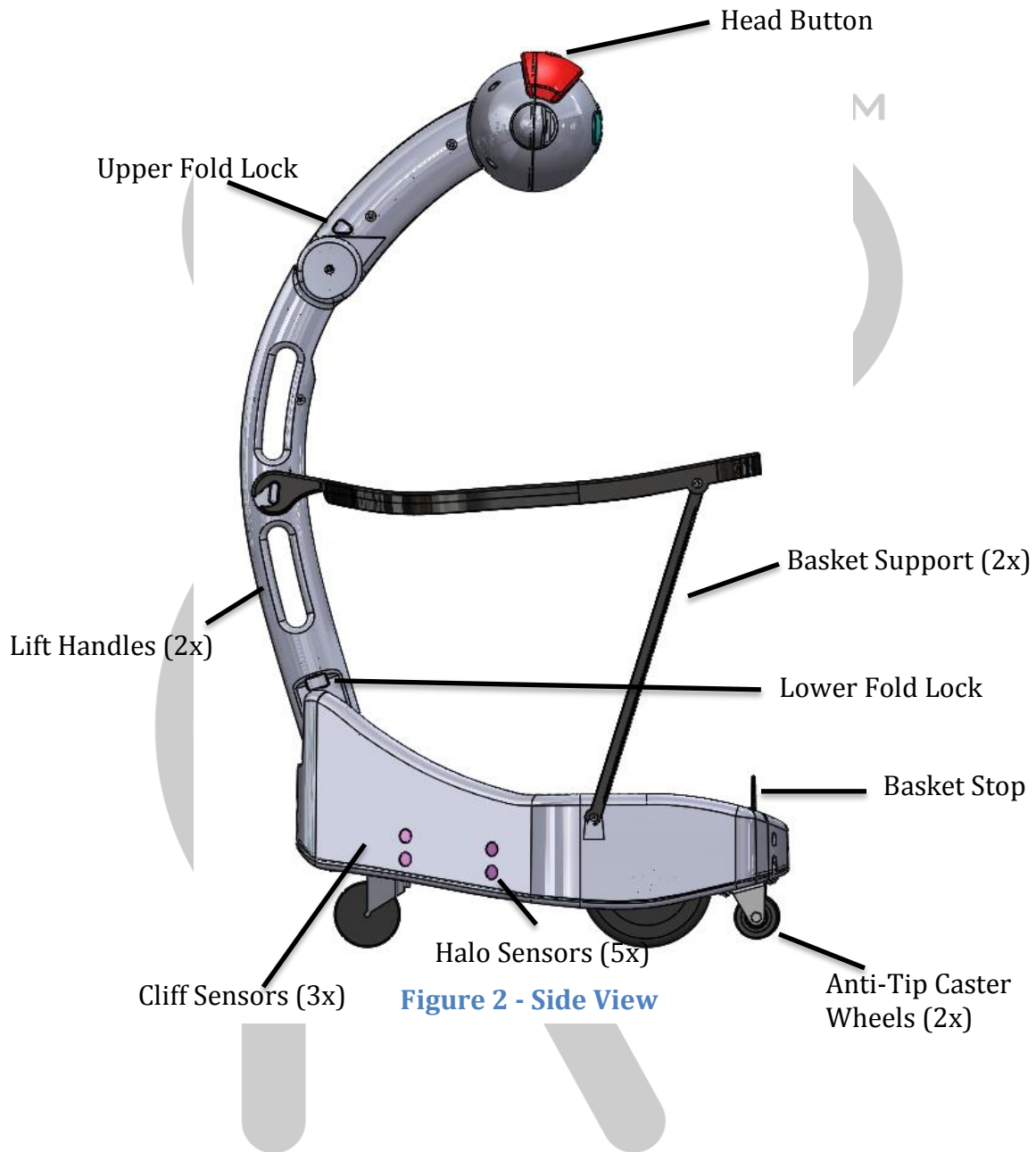


	needs a recharge or when he is in Follow Mode or Manual Mode
Budgee™ is multilingual	He will talk to you in a variety of languages through your smartphone or tablet
Budgee™'s power charger	Budgee™'s power charger can be adapted to fit most widely used international outlets
Follow Distance is configurable	Using your smartphone or tablet you can set the distance you want Budgee™ to follow you
Budgee™ follows you and carries your stuff	Budgee™ follows a transmitter that can be worn or carried

BUDGEE™ ANATOMY



BUDGEE™ ANATOMY (CONTINUED)



BUDGEE™ ANATOMY (CONTINUED)

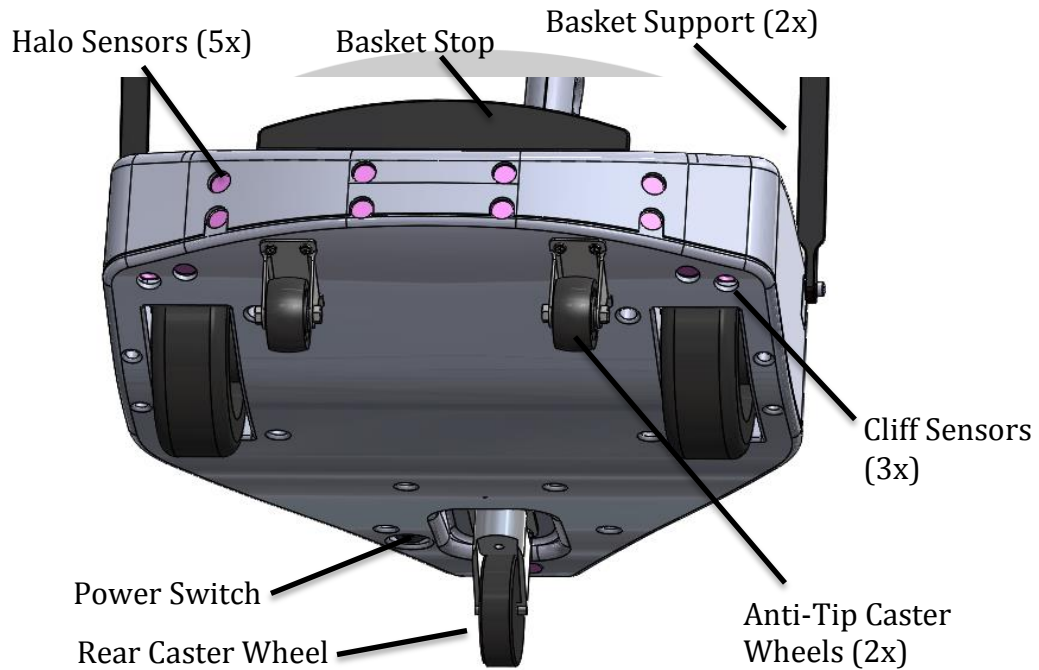


Figure 3 - Bottom View

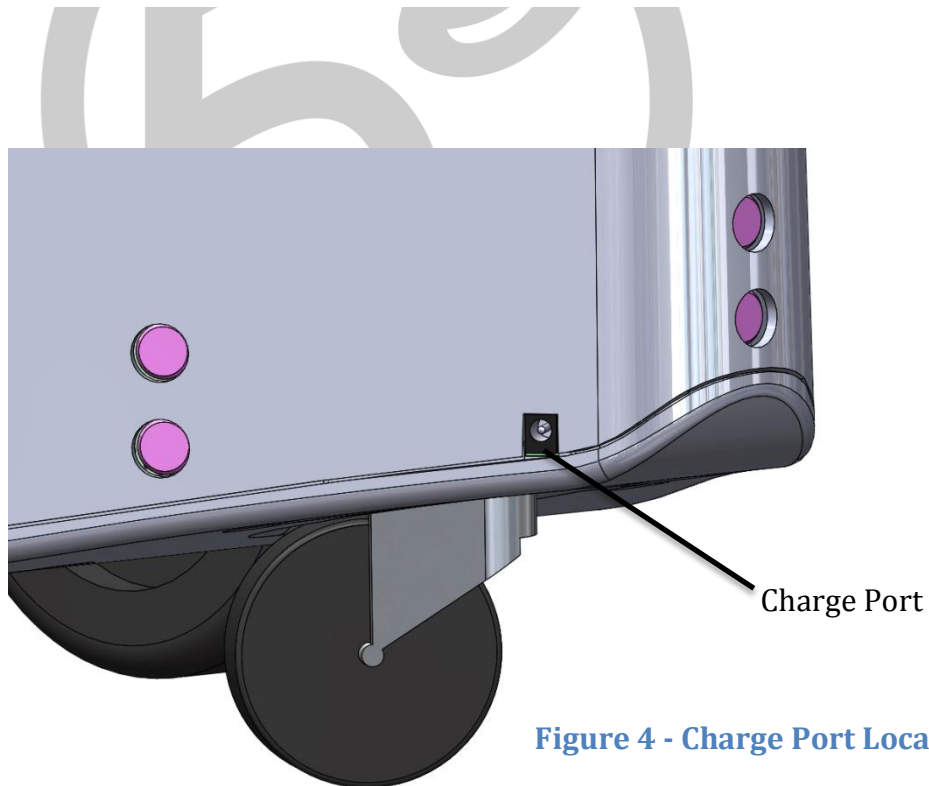


Figure 4 - Charge Port Location

BUDGEE™ TRANSMITTER ANATOMY

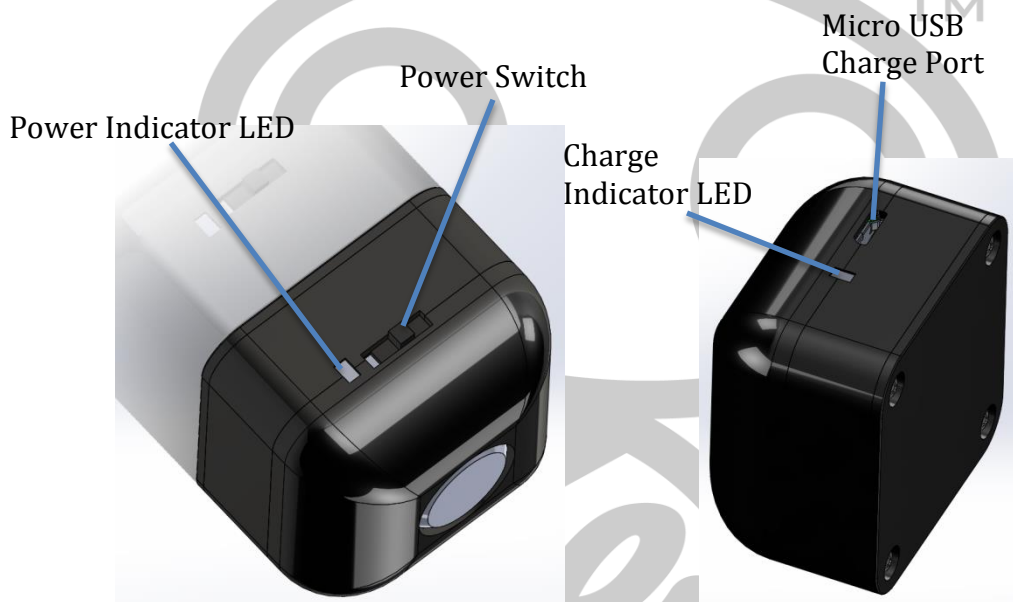


Figure 5 - Transmitter

BUDGEE™ AND BUDGEE™ TRANSMITTER ANATOMY COMPONENTS

- **Head-** Contains the robot's Head Button, Eyes, and Receivers
- **Head Button-** The red button on top of Budgee™'s head that switches the robot between modes of operation
- **Eyes-** The LED display that can indicate any number of different meanings to alert the user to the robot's current state
- **Receivers-** The two sonar circuits located in Budgee™'s ears, these receivers are what Budgee™ uses to communicate with the transmitter
- **Upper Fold Lock-** The topmost buttons on either side of Budgee™'s neck; push these in to fold the robot's head into its neck
- **Lower Fold Lock-** The bottom buttons on either side of the base of Budgee™'s neck; push these in to fold the robot's neck into its base
- **Lift Handles-** The two handles in the robot's neck that are used to lift Budgee™ once it has been properly folded
- **Basket-** The bag attached to Budgee™'s neck and base; it is capable of carrying up to a 50 lb. payload
- **Basket Support-** The two arms on either side of the basket; they are attached to the sides of the robot's base for extra support
- **Basket Stop-** The plastic lip attached to the front of the base; it is designed to prevent the basket from slipping forward and interfering with the front facing halo sensors
- **Halo Sensors-** There are four forward facing and one rear facing halo sensor; these circuits detect obstacles within a 28 cm radius of the robot
- **Cliff Sensors-** There are two forward facing and one rear facing cliff sensor; these circuits detect cliffs and other uneven terrain
- **Anti-Tip Caster Wheels-** These two forward facing wheels are designed to prevent the robot from tipping forward while operating on a declined surface or while carrying a heavy payload
- **Rear Caster Wheel-** This is the single rear facing wheel
- **Power Switch (Budgee™)-** The power button located on the underside of the robot's base near the rear caster wheel

- **Power Switch (Transmitter)**- The power button located on the side of the transmitter next to the Power Indicator LED
- **Charge Port**- Located on the back of the robot, this is where the user can connect Budgee™'s wall-charger power cord and charge the robot
- **Power Indicator LED (Transmitter)**- The light next to the Power Switch on the transmitter; this will turn green when the transmitter is powered on, blue when hitched to the robot, and gray when powered off
- **Charge Indicator LED (Transmitter)**- The light next to the Micro USB Charge Port; this will turn red when low on battery power, green when fully charged, and gray when the battery has died
- **Micro USB Charge Port (Transmitter)**- Located next to the Charge Indicator LED on the transmitter, this is where the user can connect the micro USB cord to charge the transmitter

BUDGEE™ COMMONLY USED TERMS

Some commonly used words or phrases within the Budgee™ Robotic Assistant Owner's Manual may be unfamiliar to the average user, so a more in-depth description of these terms can be referenced below.

- **Hitch:** When Budgee™ syncs up with the transmitter and the two devices are able to communicate with each other, they are referred to as being hitched. To operate Budgee™ in Follow Mode, the user must power on the robot and place it in Follow Mode (if it isn't already in Follow Mode), then power on the transmitter and face it directly in front of the robot within the set Follow Distance (the default Follow Distance is 80 cm [or 31 in]). The transmitter's power indicator LED will flash green, then red, and finally blue. Once the robot and transmitter have hitched properly, the robot's LED eye display will begin to flash on/off simultaneously. Budgee™ should hitch forward when connected.
- **Follow Distance:** The Follow Distance is the distance which Budgee™ will keep between itself and the transmitter while in Follow Mode. The default Follow Distance is set at 80 cm (or 31 in). The Follow Distance can only be modified through the

Budgee™ App. To change the Follow Distance, please refer to page 32 for Android devices, or page 49 for iOS devices.

- **Budgee™ Sings!:** This refers to the option within the Android version of the Budgee™ App of enabling or disabling all of the robot generated alert sounds. Budgee™ Sings! only affects the audio tones emitted by the robot, it does not affect the voice alerts generated by the user's handheld device. The user must have the Budgee™ App downloaded on a device in order to disable the robot generated alert sounds. To enable/disable the robot's audio tones, refer to page 42 for Android devices or page 56 for iOS devices (referred to as Budgee™ sounds).
- **Voice Alerts:** A voice alert occurs when Budgee™ has encountered an error and needs to alert the user of the problem. When the Budgee™ App is in use and the robot encounters an error the device will audibly tell the user of the alert and an accompanying alert message will appear onscreen. If the user does not have the Budgee™ App downloaded to a device, the robot will alert the user of the problem by emitting an audio jingle specific to the alert.

IMPORTANT TIPS

*It is recommended that the user charge both Budgee™ and the transmitter overnight before first-time use. Budgee™ and Budgee™ accessories contain electronic parts. **DO NOT** submerge or spray with water. Clean with a dry cloth only.*

Turning Budgee™ on and off

- To turn Budgee™ on, locate the power switch beneath the robot (see image below). Click the switch towards the front of the robot. Then, locate the button on top of the robot's head (see image below). Press and hold this button until the robot's eyes illuminate. NOTE: Budgee™ always starts in Manual Mode. Additional steps are required to have the robot begin to follow the user.
- To turn Budgee™ off, press and hold the robot's head button until the robot's eyes are no longer illuminated. Then, locate the power switch beneath the robot. Click the switch towards the rear of the robot. NOTE: If the robot is being powered off temporarily and not being charged use of the head button to power on and off is all that is required.



Turning Budgee™ Transmitter on and off

- To turn Budgee™ transmitter on, locate the power switch on the side of the transmitter and slide the switch to the on position. An indicator light will illuminate informing you that the transmitter is powered on. NOTE: Budgee™ must be placed in Follow Mode before it begins to follow the user.
- To turn Budgee™ transmitter off, locate the power switch on the side of the transmitter and slide the switch to the off position. The indicator light will no longer be illuminated signaling that the device is powered-off.



BATTERY AND CHARGING

- Charge using a standard 110V AC outlet only. Product may not be used with any type of power converter. Use of other power converters will immediately void the warranty.
- Use only the wall-charger supplied by the manufacturer to charge this device.
- Do not use a wall-charger with a damaged cord or plug. If the cord or plug is damaged, the manufacturer or similarly qualified persons must service it.
- Use only rechargeable battery packs approved by Five Elements Robotics.
- Always charge your robot and accessories before long-term storage or transportation.
- Charge indoors only.
- Your robot's charger may be protected with a surge protector in the event of severe electrical storms.
- Never handle the wall-charger with wet hands.
- Always disconnect your robot from its wall-charger before cleaning or maintaining it.
- Please ensure voltage rating for enclosed wall-charger matches standard outlet voltage.
- Used battery packs should be placed in a sealed plastic bag and disposed of safely according to local environment regulations.

BATTERY STORAGE AND CHARGING

Budgee™ and the Budgee™ accessories are powered by rechargeable batteries and can last for hundreds of cycles if cared for properly.

Battery Life

To extend battery life, Five Elements Robotics recommends always keeping Budgee™ and the Budgee™ accessories charged. Recharge as soon as possible following use; waiting several days can damage the battery.

Charging Budgee™

To charge Budgee™, connect the wall-adapter cord to the Budgee™ charge port and then plug the wall-adapter into a standard 110V AC outlet. Press the power switch on the underside of the robot and verify that the LED eye display is glowing on/off to indicate the robot is charging.



1. Connect the wall-adapter cord to the Budgee™ charge port.



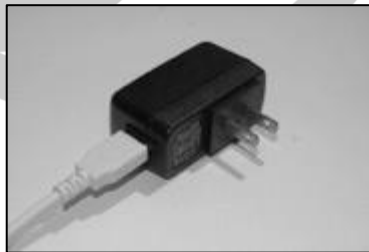
2. Plug the wall-adapter into a standard 110v AC outlet.

Charging Budgee™ Transmitter

To charge Budgee™ Transmitter, connect the supplied micro-USB cable to the micro-USB port on the transmitter. Connect the end of the USB cable to the USB wall-charger and then plug the wall-charger into a standard 110V AC outlet.



1. Connect the micro-USB cable to the micro-USB port on the transmitter.



2. Connect the USB cable to the USB wall-charger.



3. Plug the wall-charger into a standard 110V AC outlet.

QUICK START: USING YOUR BUDGEE™

Your Budgee™ takes just a few steps in order to get it up and running. In no time you will be integrating Budgee™ into your everyday life. Before getting started, please be sure that you have fully charged both the robot and the transmitter. Skipping the full battery charge could permanently reduce battery life.

NOTE: We have instructional videos of these procedures available at <http://www.5elementsrobotics.com/training>

Step 1: Unfolding Budgee™



1. Press and hold the lower fold lock while lifting the neck until it locks into place.



2. Press and hold the upper fold lock while lifting the head until it locks into place.

Step 2: Turning Budgee™ on



1. Press the power switch located on the bottom of the base.

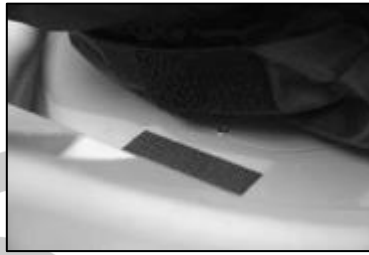


2. Press and hold the head button until the LED eye display lights up. Both eyes should be on solid, indicating the robot is in Manual Mode.

Step 3: Attaching the Basket



1. Attach the neck bracket on the basket to the basket mount on Budgee™'s neck.



2. Align the Velcro on the bottom of the bag with the Velcro strip on Budgee™'s base.



3. Attach the left and right arm brackets on the basket to the screws on either side of the base.

Step 4: Turning Budgee™ Transmitter on and Switching to Follow Mode



1. Slide the Power Switch on. The Power Indicator LED will flash green, then red, and then green again if working properly.



2. Press the Head Button to switch to Follow Mode. Both eyes should be blinking.



3. Verify that Budgee™ hitches to the transmitter. Budgee™ will move towards the transmitter and his LED eye display will blink simultaneously when hitched.

Step 5: Turning Budgee™ Transmitter off and Switching to Manual Mode



1. Slide the Power Switch off. The Power Indicator LED will turn off.

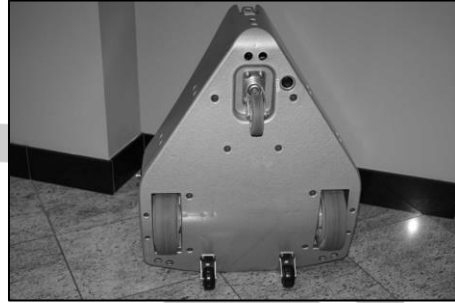


2. Press the Head Button to switch to Manual Mode. The eyes should both be on.

Step 6: Turning Budgee™ off



1. Press and hold the head button until the LED eye display goes out.



2. Press the power switch located on the bottom of the base.

Step 7: Folding Budgee™



1. Remove the Budgee™ bag from the robot. Press and hold the upper fold locks while pressing down on the head until it locks into place.



2. Press and hold the lower fold lock while pressing down on the neck until it locks into place.

BUDGEE™ SAFETY FEATURES

Your Budgee™ has been designed to be as safe as possible. It includes various safety features that will be outlined in this section. It is important that safe operations are maintained in order to protect yourself, others, and property from damage. These safety features are intended to assist you in operating Budgee™ safely.

Budgee™ Obstacle Sensors

Budgee™ is equipped with 5 proximity sensors, 4 forward facing and 1 rear facing. These sensors have been arranged to provide improved obstacle detection in all directions of maneuverability. The sensors detect obstacles within 28 centimeters, otherwise referred to as the obstacle detection zone.

Budgee™ Cliff Sensors

Budgee™ has 3 ground facing cliff sensors, 2 placed in the front of the robot and 1 placed in the back of the robot. These sensors are designed to detect uneven surfaces in Budgee™'s path, such as a curb or the end of a staircase. When the cliff sensors detect a cliff, the robot will automatically stop so that it does not tip or fall over the edge.

Obstacle and Cliff Sensor Limitations

The obstacle sensors can be set off by small confined spaces, such as in an elevator. When multiple Budgees™ are operating in the same room, their obstacle sensors may cause interference with the tracking systems of other robots. If unwanted obstacle alarms become a nuisance, the user can use the Budgee™ App to temporarily disable the obstacle sensors.

The cliff sensors also have their limitations. Sometimes the sensors can be overwhelmed by direct, bright sunlight. When this occurs the user is advised to use the Budgee™ App to temporarily disable the cliff sensors.

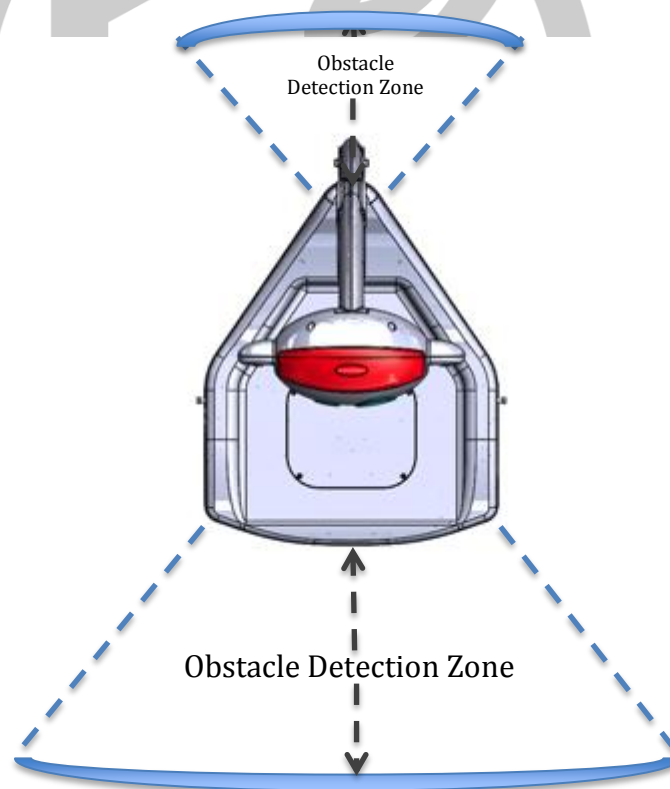
Budgee™ Anti-Tip Wheels

Budgee™ has two frontward facing anti-tip wheels which prevent the robot from tipping forward either due to operating on a decline or a front weighted payload. The wheels have a $\frac{1}{2}$ inch clearance off the ground, so that any obstacle Budgee™ approaches from a dead stop that is $\frac{1}{2}$ inch or larger may not be overcome. However, Budgee™ is capable of clearing any obstacle $\frac{3}{4}$ inch or lower with any given momentum.

Budgee™ Basket Stop

The plastic lip attached to the front of Budgee™'s base is the basket stop. It prevents the payload from shifting out in front of the robot, which would interfere with the operation of the halo sensors.

Budgee™ Obstacle Detection Zone



Many factors determine how well Budgee™ will be able to detect an obstacle. These factors include shape, size, position, location, and material. These sensors are intended as an aid in your safe operation of Budgee™.

BUDGEE™ MODES OF OPERATION

Your Budgee™ has 3 modes in which it operates. These modes can be toggled in a few different ways. The most common way to toggle modes is through a tap of the head button. You can also change modes using the Budgee™ App (section “Budgee™ App (Android)” or “Budgee™ App (iOS)”) or Budgee™ Remote (sold separately). The following sections will outline the features of each operational mode.

Table 1 - Mode Identification

Operating Mode	Budgee™ Eye Status	
<i>Manual Mode</i>	<i>Both Eyes Illuminated</i>	
<i>Follow Mode</i>	<i>Big Eye On, Small Eye Off</i>	<i>Transmitter off or out of range</i>
	<i>Big Eye On, Small Eye Blinking</i>	<i>Transmitter on</i>
	<i>Both Eyes Blinking Together</i>	<i>Transmitter on and hitched (active follow)</i>
<i>Action Required Mode</i>	<i>Both Eyes Blinking Back and Forth (one eye at a time)</i>	

Budgee™ Modes: Follow Mode

Your Budgee™ will follow you around in follow mode. To determine if Budgee™ is in follow mode see Table 1 above.

To enter follow mode:

- Ensure Budgee™ is powered on.
- Locate the button on top of Budgee™ head.
- Press and release the head button until Budgee™ eyes show follow status (see Table 1 above).

There are multiple ways to leave follow mode and the user should determine which way works best for their situation. All methods produce the same result of stopping Budgee™ from following until the mode is switched back. Here are a few ways to leave follow mode:

Table 2 - Leaving Follow Mode

How do I switch mode?	What does it do?	What will I see?	Additional Notification?
Press and release the button on top of Budgee™ head	Places Budgee™ into Manual Mode	Both Eyes On	State Change Notification thru Budgee™ App or Budgee™ Remote
Turn off Budgee™ Transmitter (see “To Turn off Budgee™ Transmitter”)	Budgee™ remains in Follow Mode	One Eye on, other Eye off	Connection Lost Notification thru Budgee™ App or Budgee™ Remote
Press Mode button in Budgee™ App	Places Budgee™ into Manual Mode	Both Eyes On	State Change Notification thru Budgee™ App or Budgee™ Remote
Press Mode button on Budgee™ Remote (sold separately)	Places Budgee™ into Manual Mode	Both Eyes On	State Change Notification thru Budgee™ App or Budgee™ Remote

Follow Mode Safety Tips

- Budgee™ Transmitter must always face Budgee™ and be unobstructed. The transmitter is typically worn on the belt, waistband, or back pocket using the provided transmitter clips.
- NOTE: Budgee™ will not be able to follow the transmitter if it is obstructed by clothing, jackets, bags, and/or other materials.
- YOU are Budgee™'s first level of obstacle detection. Choose a path that Budgee™ will be able to safely follow. Avoid obstacles, curbs, steps, or other obstructions that could cause damage or unsafe operations. Be aware of your surroundings.
- If Budgee™ detects an obstacle that he cannot overcome he will come to a stop. His eyes will blink one at a time and an audible alert will be made. He will not be able to continue on this path until that obstacle is cleared or until you steer him in a different direction with a cleared path.
- Walk in a controlled manner as erratic movement can cause Budgee™ to lose track of the signal or deplete battery level at an increased rate.
- Start off slowly at first until you are comfortable with the way Budgee™ follows.
- You are responsible for the safe operations of your robot. Budgee™ has been designed to trust you, your path, and your guidance.
- Additional training materials and videos are available on our website: <http://www.5elementsrobotics.com>

Budgee™ Modes: Manual Mode

Your Budgee™ has a Manual Mode, which is the state it will be in when you power on your Budgee™. You can tell you are in Manual Mode because both of Budgee™ eyes will be illuminated solid (not blinking). Manual Mode allows for remote control of your Budgee™ movements through the Budgee™ App (available for Android or iOS) or the Budgee™ Remote (sold separately). In addition to remote control, Manual Mode can also be thought of as an emergency stop mode. While in this mode

Budgee™ will ignore the Budgee™ Transmitter and will not be able to follow. *NOTE: Controlling Budgee™ in Manual Mode is covered in section “Budgee™ App” below or in your Budgee™ Remote (sold separately) user manual.*

Budgee™ Modes: Action Required Mode

Your Budgee™ has one additional mode that it will enter called Action Required Mode. You can always tell that Budgee™ has entered Action Required Mode because the eyes will be flashing on and off one at a time, much like a railroad crossing signal. There is no user interface or button to press to enter Action Required Mode. Budgee™ can enter Action Required Mode from any of the other operating modes due to any issues:

- Obstacles detected
- Cliff detected
- Other issues (e.g. overheating)

Budgee™ will stay in Action Required Mode until the problem is corrected. In all cases Action Required Mode will require some kind of action from you. For instance, if Budgee™ is following you and detects an obstacle it will:

- Come to a stop
- Enter Action Required Mode
- Eyes will flash, one at a time

At that point you would have to move the obstacle from Budgee™ path or backup moving Budgee™ away from the obstacle and follow a different, cleared path.

BUDGEE™ APP (ANDROID)



Opening the App

Once the Budgee™ App has been downloaded onto the Android phone, the user can access the app by touching the Budgee™ App Icon. Power Budgee™ on if you haven't already done so. For a detailed explanation on how to start Budgee™, refer to Section "Quick Start: Using Your Budgee™".

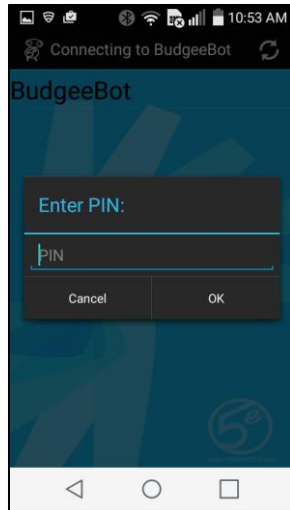


Connecting to the Robot

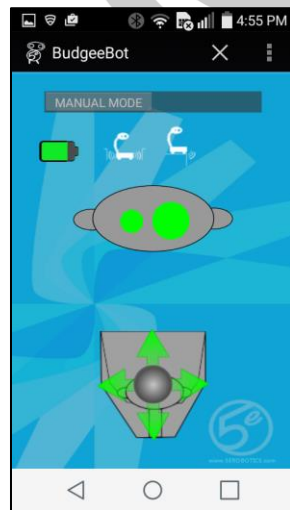
The app will open and start scanning for robots.



Once the scan is completed, the app will show all available robots that the user can connect with. There should only be one robot available (unless the user has more than one Budgee™), and the user should select BudgeeBot. (BudgeeBot is the default name of the robot, but the user can refer to Section "Robot Name" to customize their Budgee™'s name.)

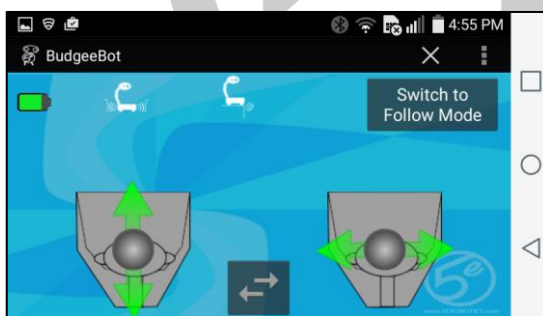


A window will pop up and prompt the user to enter a PIN number, which will be included in Budgee™'s packaging. Enter the four digit PIN number and touch Ok. The Budgee™ App will only prompt you to enter the PIN number on the first use.



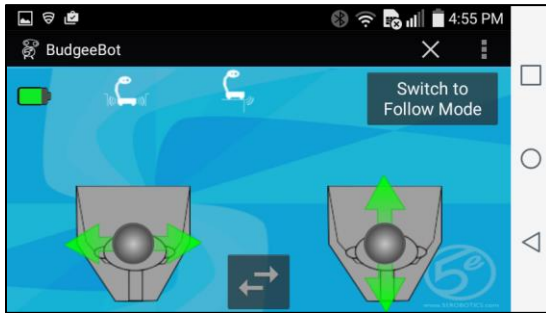
Manual Mode

The app will open to whichever mode Budgee™ was last left in, whether that is Manual Mode or Follow Mode. If the app is not already in Manual Mode, swipe the Follow Mode button to the left. Budgee™'s eyes will both be on and the user can steer him by using the joystick.



Vertical Mode versus Horizontal Mode

A handheld device is in Vertical Mode when it is held upright (pictured above). When it is positioned on its side (pictured on the left), it is considered to be in Horizontal Mode. When the user holds their handheld device in Horizontal Mode while the Budgee™ App is in Manual Mode, they will have two joysticks to steer Budgee™. The left joystick moves Budgee™ back and forward, and the right joystick moves him left and right.

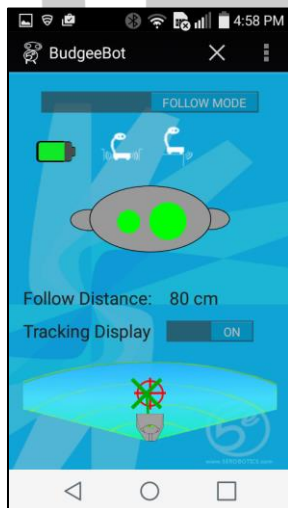


The bottom button with alternating arrows will switch the positions of the joysticks (pictured on the left). Touching the Switch to Follow Mode button in the top right corner will switch the app to Follow Mode, and will force the screen's perspective back into Vertical Mode.



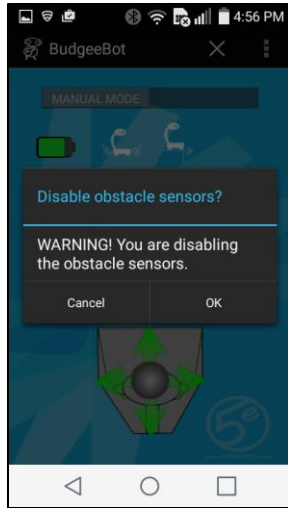
Follow Mode

Swiping the Manual Mode button to the right will switch the app to Follow Mode. Budgee™'s eyes will blink and he will say, "I am now in Follow Mode. Let's get going!" Budgee™ will now follow the transmitter (if it is powered on, see Section "Quick Start: Using Your Budgee™"), so the user should attach it to their pocket or belt.



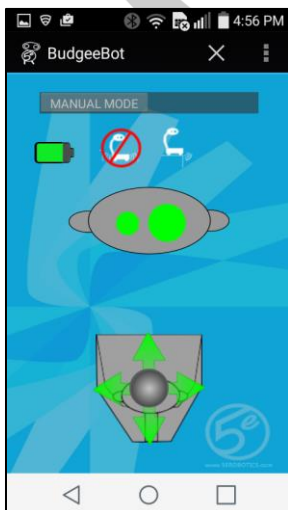
Adjusting the Follow Distance

The user may adjust the distance between Budgee™ and the transmitter by changing the Follow Distance. Simply swipe the Tracking Display button to ON and move the red crosshair to the desired position, and the Follow Distance will automatically adjust. The Follow Distance range is 30-150 cm.

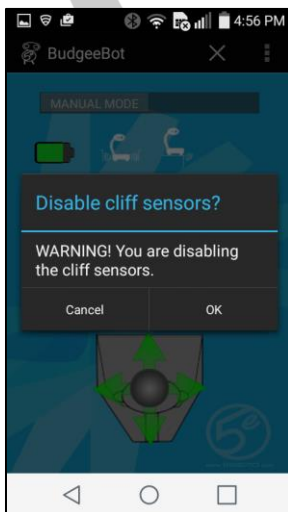


Disabling Obstacle Sensors

The small white Budgee™ icon next to the battery display icon is the Obstacle Sensor button. To disable the obstacle sensors, press the Obstacle Sensor button. A window will appear with a warning, and the user must press OK to disable.

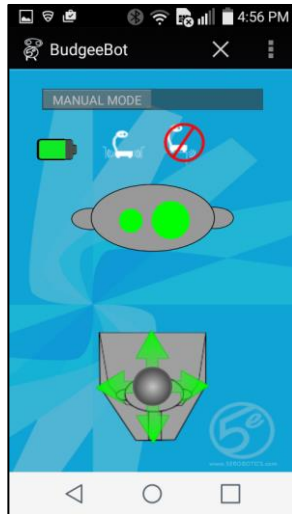


Once the obstacle sensors have been disabled, the Obstacle Sensor button will have a red line through it, as pictured here. The red line will disappear once the obstacle sensors have been enabled again.

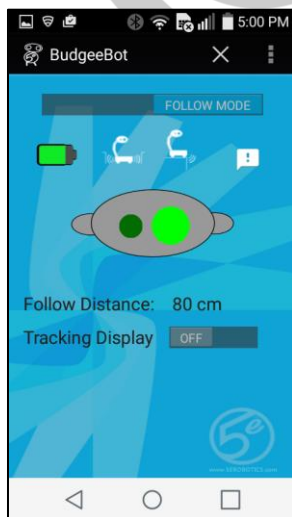


Disabling Cliff Sensors

The small white Budgee™ icon next to the Obstacle Sensor button is the Cliff Sensor button. To disable the cliff sensors, press the Cliff Sensor button. A window will appear with a warning, and the user must press OK to disable.

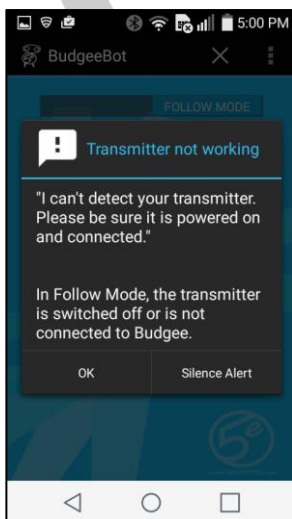


Once the cliff sensors have been disabled, the Cliff Sensor button will have a red line through it, as pictured here. The red line will disappear once the cliff sensors have been enabled again.



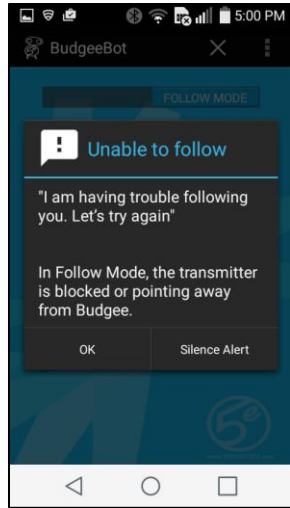
Alert Messages

If an "!" appears onscreen, Budgee™ has encountered a problem and requires assistance. This may be accompanied by a voice alert, but the user can also touch the "!" to receive a reading of the alert and how to fix it.



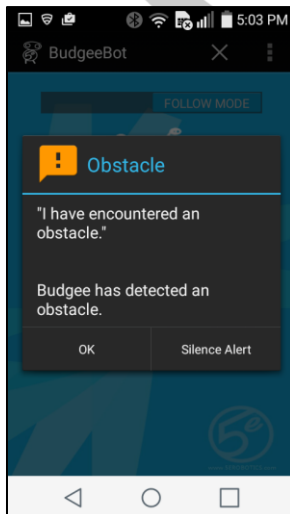
Alert Messages: Transmitter Not Working

If the transmitter is not working, this alert message will pop up and the Budgee™ App will say, "Your transmitter is not working. Are you sure it is powered on and connected?" This means that Budgee™ is not receiving a signal from the transmitter. The user should verify that the transmitter is powered on and synced with the robot.



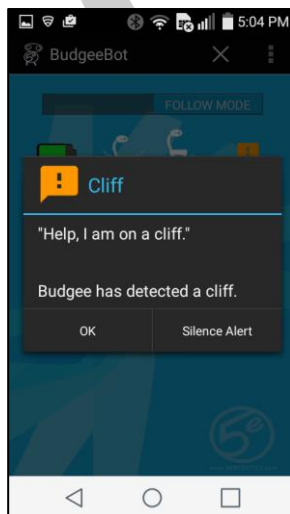
Alert Messages: Unable to Follow

If the robot is unable to follow the user, the Budgee™ App will say, “I am having trouble following you. Let’s try again.” The user should verify that the transmitter is facing the robot and that they are standing within the set Follow Distance (the default Follow Distance is 80 cm).



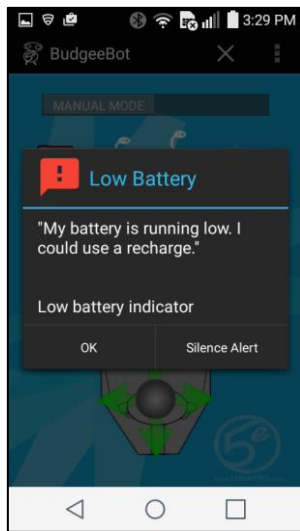
Alert Messages: Obstacle

When Budgee™ detects an obstacle, the Budgee™ App will say, “I have encountered an obstacle.” This can be caused by any object in Budgee™’s path. The user can reposition Budgee™ away from the obstacle by using either the transmitter in Follow Mode or the joystick in Manual Mode.



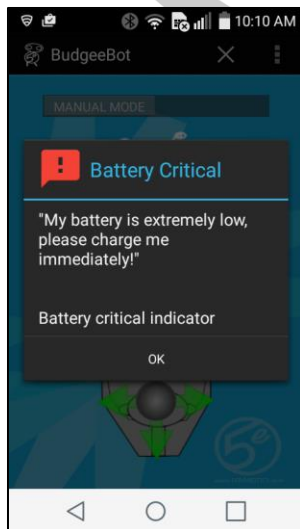
Alert Messages: Cliff

When Budgee™ detects a cliff, the Budgee™ App will say, “Help, I am on a cliff.” The user will not be able to operate Budgee™ unless they dismiss the alert by switching modes, which can be accomplished by either touching the head button or using the Budgee™ App.



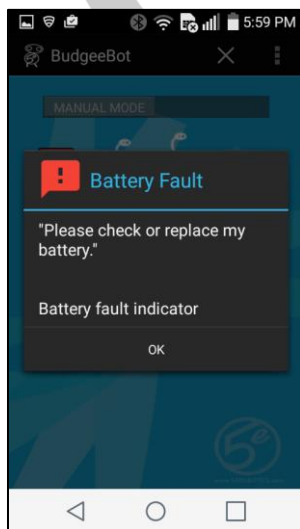
Alert Messages: Low Battery

If Budgee™ is running low on battery power, this alert message will pop up and the Budgee™ App will say, “My battery is getting low. I could use a recharge.” This occurs when the battery level falls below 15%, and the error message will disappear once Budgee™ has been charged. Once the battery level reaches 8%, Budgee™ will not have enough power to move in either Manual or Follow modes.



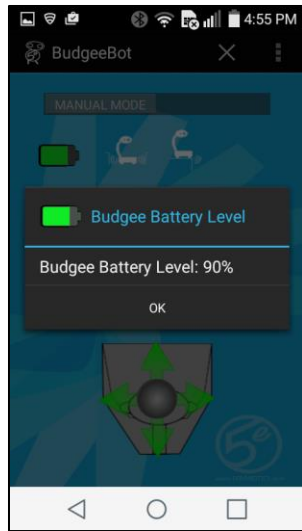
Alert Messages: Battery Critical

When Budgee™'s battery power reaches 10%, the Battery Critical alert message will display onscreen. The user should recharge their robot as soon as possible to dismiss the alert.



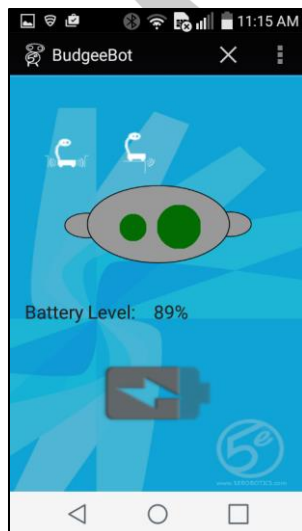
Alert Messages: Battery Fault

The Budgee™ App will display a Battery Fault alert message when the battery power reaches less than 6%, or when the battery needs to be replaced. If the user charges the battery after first receiving the message and the Battery Fault alert message persists, it is advised that they contact Five Elements Robotics Technical Support or their distributor for further assistance.

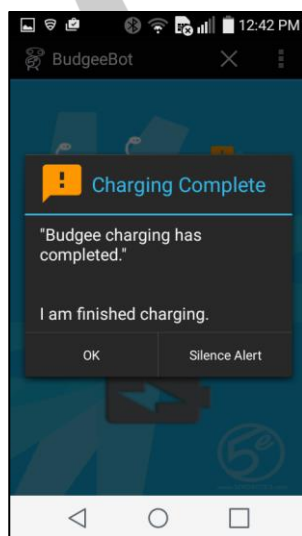


Battery Display

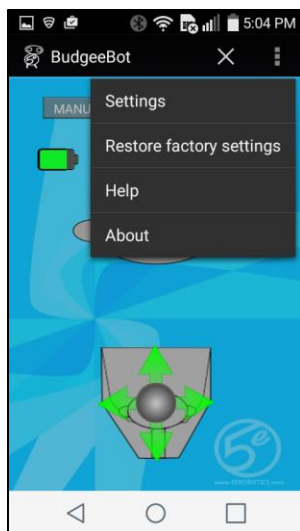
The battery icon is located in the top left corner above the Budgee™ head icon. The user can touch the battery icon to see the current Battery Level (pictured left). The color of the battery icon indicates how much battery power is remaining: green is 40-100%, yellow is 20-39%, and red is 0-19%.



When Budgee™ is charging, the app will show a gray battery icon and a Battery Level Percentage (pictured left). Budgee™'s eyes will glow and the battery icon will show the battery percentage. Budgee™ cannot be operated while he is charging, although the Budgee™ App will still be displayed.

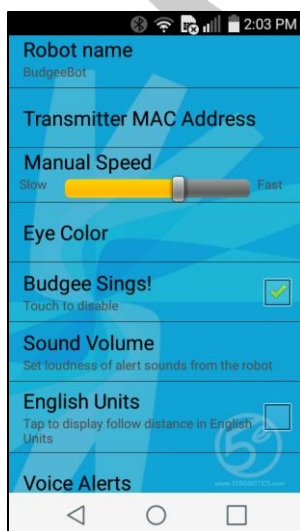


Once Budgee™ has finished charging, a window will appear onscreen confirming that the battery charge has been completed and the user may disconnect the robot from the charger.



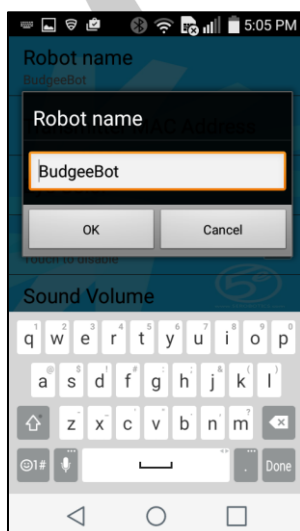
Main Menu

To access the menu, touch the Android Menu button. There are a few variations on the location of the Android Menu button, so the user should consult their Android phone manual if they are unsure. Here the user can access Settings, Restore Factory Settings, Help, and About, all of which we will go into more detail down below.



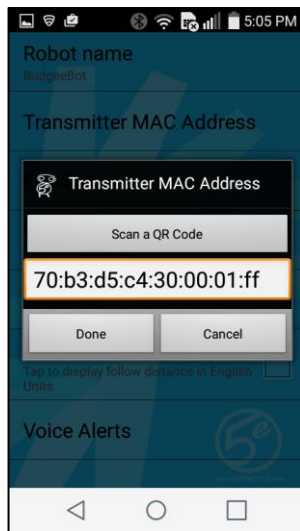
Settings Menu

The Settings menu contains the Robot Name, Transmitter MAC Address, Robot Speed, Eye Color, Budgee Sings!, Sound Volume, English Units, and Voice Alerts submenus, which will be explained in their own sections below.



Robot Name

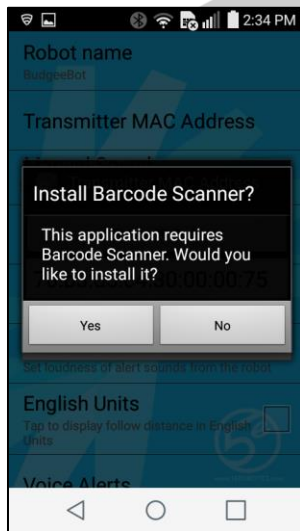
The default Robot Name will be BudgeeBot, but the user can personalize their Budgee™'s name on this screen by typing in a new name and touching Ok.



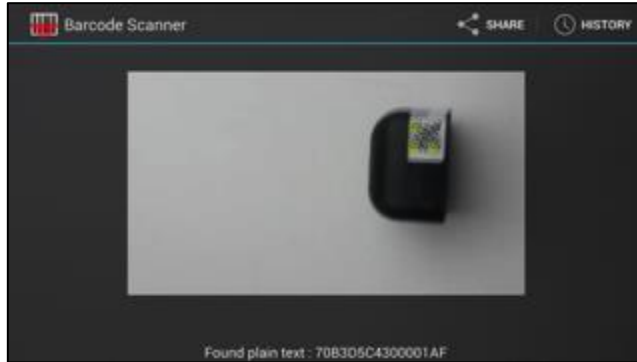
Transmitter MAC Address

The Transmitter MAC Address screen allows the user to scan the QR code located on the transmitter so that it may sync with Budgee™. To Use the Transmitter MAC Address QR Scan:

1. Touch Transmitter MAC Address
2. Touch Scan a QR Code button



3. A window will pop up and prompt the user to install a Barcode Scanner (if it hasn't already been installed). Touch the Yes button
4. The Barcode Scanner App will open. Touch the Install button
5. Touch the Accept button to allow the Barcode Scanner App to have access to the phone
6. Once the Barcode Scanner App is finished downloading, minimize the app and reopen the Budgee™ App



7. The Barcode Scanner will automatically open in the Budgee™ App, so the user can scan the QR Code located on the transmitter

8. Verify the MAC Address is displayed after scanning the QR Code

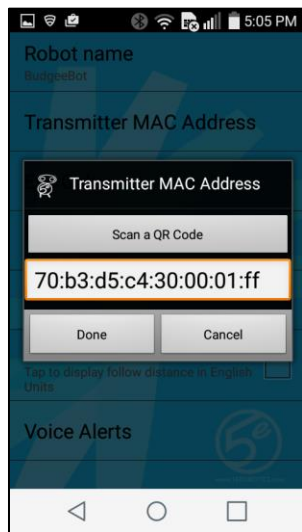
9. Touch the Done button

10. Exit the Settings menu and place the robot in Follow Mode

11. Verify the transmitter is powered on

12. Verify the robot's LED eye display is blinking simultaneously

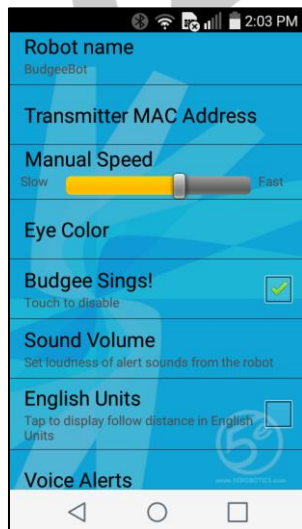
13. Verify the robot hitches with and follows the transmitter (For an in-depth explanation of hitch, refer to Section "Quick Start: Using Your Budgee™")



Transmitter MAC Address: Manual Entry

The user also has the option to manually enter the MAC Address. To use the Transmitter MAC Address Manual Entry:

1. Touch Transmitter MAC Address
2. Manually enter the MAC Address of the transmitter (including semi-colons)
3. Touch the Done button
4. Exit the Settings menu and place the robot in Follow Mode
5. Verify the transmitter is powered on
6. Verify the robot's LED eye display is blinking simultaneously
7. Verify the robot hitches with and follows the transmitter (For an in-depth explanation of hitch, refer to Section "Quick Start: Using Your Budgee™")



Manual Speed

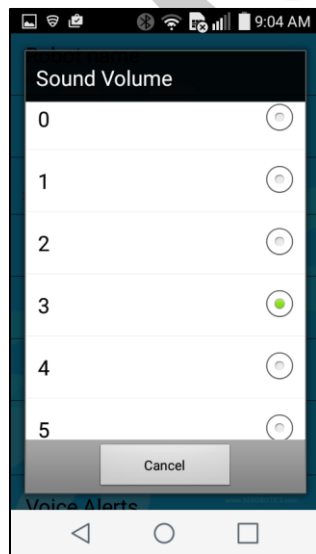
The user can modify the pace at which their Budgee™ operates in Manual Mode by adjusting the Manual Speed bar.

(Note: The Manual Speed bar only affects the speed of the robot in Manual Mode.)



Eye Color

The Eye Color screen is where the user can create a customized eye color for their Budgee™ by swiping the red, green, and blue color palettes to achieve the desired effect.

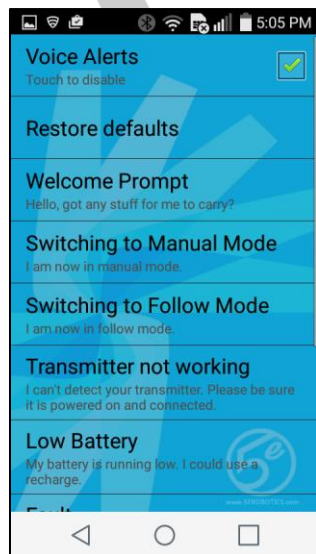


Sound Volume

The Sound Volume screen will only affect Budgee Sings! and not the Voice Alerts. The default Sound Volume is 3, but the user can select their preferred volume.

Budgee Sings!

Budgee Sings! does not have a menu screen, but the user can check the box to either enable or disable Budgee™'s robot-generated alert sounds.

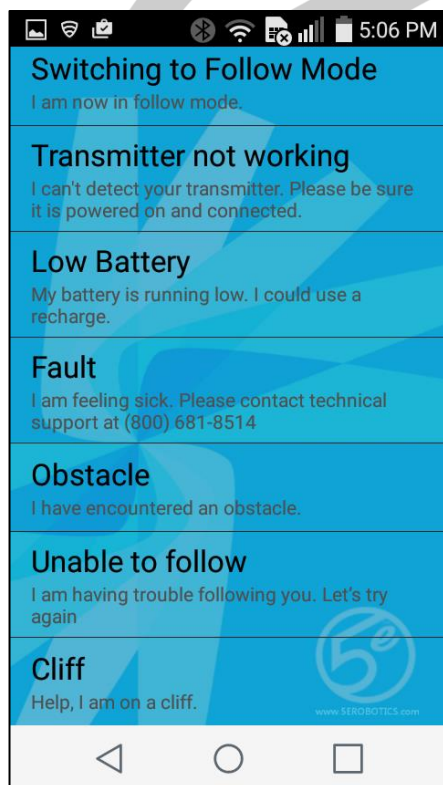
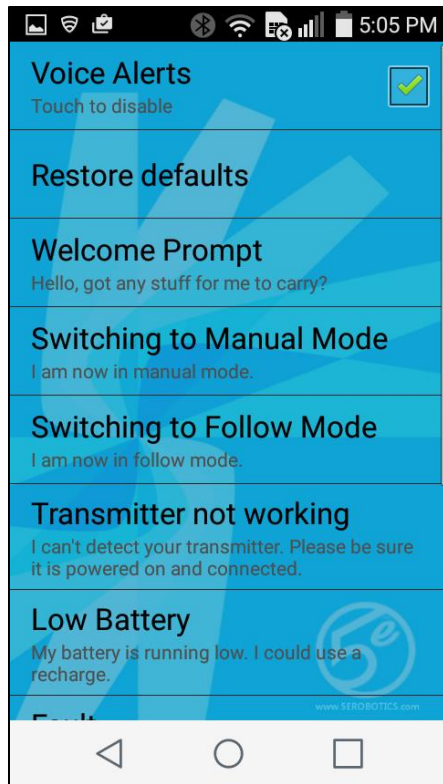


English Units

English Units does not have a menu screen, but the user can check or uncheck the box to enable the Follow Distance to be displayed in inches or centimeters.

Voice Alerts

The Voice Alerts screen allows the user to enable or disable all voice alerts and restore the default voice alerts. The user can also touch an alert to customize how the Budgee™ App will respond.



Individual Voice Alerts

Welcome Prompt

Hello, got any stuff for me to carry?

The Welcome Prompt occurs when Budgee™ is first powered on.

Switching to Manual Mode

I am now in manual mode.

This alert occurs when Budgee™ is switched to Manual Mode.

Switching to Follow Mode

I am now in follow mode.

This occurs when Budgee™ is switched to Follow Mode.

Transmitter Not Working

I can't detect your transmitter. Please be sure it is powered on and connected.

Budgee™ says this when he cannot receive a signal from the transmitter.

Low Battery

My battery is getting low. I could use a recharge.

This voice alert occurs when Budgee™ is almost out of battery power.

Fault

I am feeling sick. Please contact technical support at (800) 681-8514.

Budgee™ says this when there is a hardware fault.

Obstacle

I have encountered an obstacle.

This occurs when Budgee™ is blocked by an object and can't move.

Unable to Follow

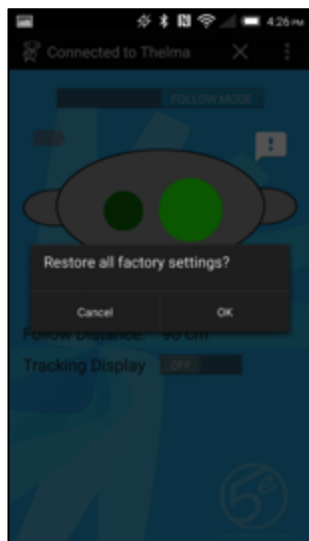
I am having trouble following you. Let's try again.

This voice alert occurs when the transmitter is blocked, pointing away from Budgee™, or the user is standing too far away.

Cliff

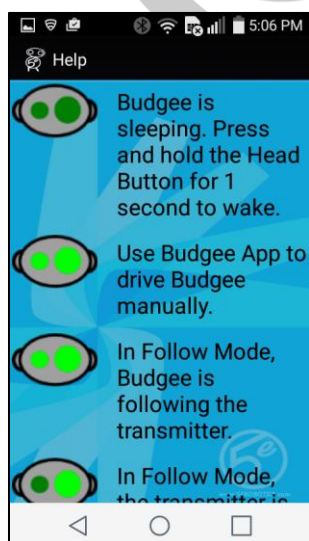
Help, I am on a cliff.

This occurs when Budgee™ detects a cliff. The user should move Budgee™ away from the cliff.



Restore Factory Settings

The Restore Factory Settings option on the main menu allows the user to reset all of the customizable portions of the app back to their original format. Simply touch Restore Factory Settings and then touch Ok.



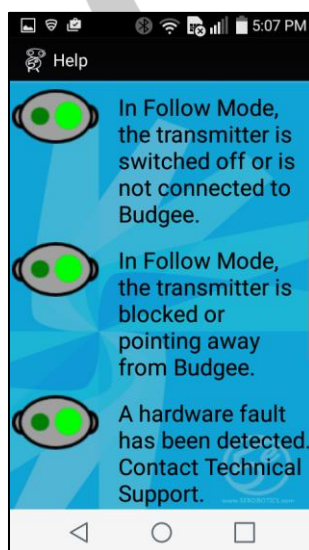
Help

The Help screen demonstrates all of Budgee™'s LED displays and their meaning:

Budgee™ is sleeping. Press and hold the Head Button for 1 second to wake. *Both eyes are off.*

Use Budgee™ App to drive Budgee™ manually. *Both eyes are on.*

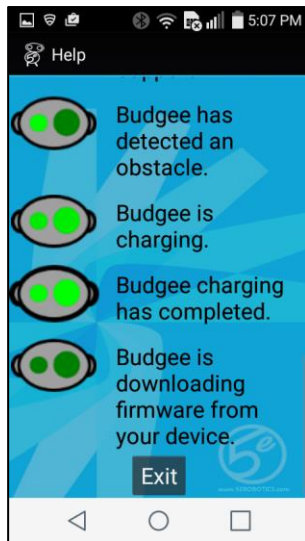
In Follow Mode, Budgee™ is following the transmitter. *Both eyes are blinking.*



In Follow Mode, the transmitter is switched off or is not connected to Budgee™. *The big eye is on, and the little eye is off.*

In Follow Mode, the transmitter is blocked or pointing away from Budgee™. *The big eye is on, and the little eye is blinking.*

A hardware fault has been detected. Contact Technical Support. *The big eye is blinking, and the little eye is off.*

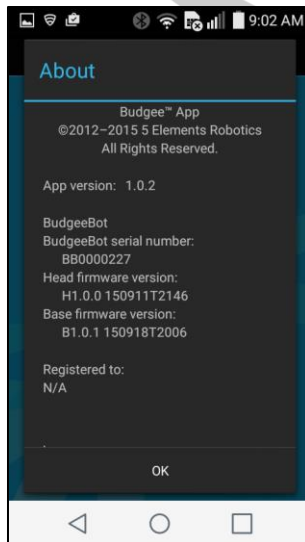


Budgee™ has detected an obstacle (or cliff). *Both eyes are alternately blinking.*

Budgee™ is charging. *Both eyes are glowing.*

Budgee™ charging has completed. *Both eyes blip.*

Budgee™ is downloading firmware from your device. *Both eyes are rapidly blinking.*



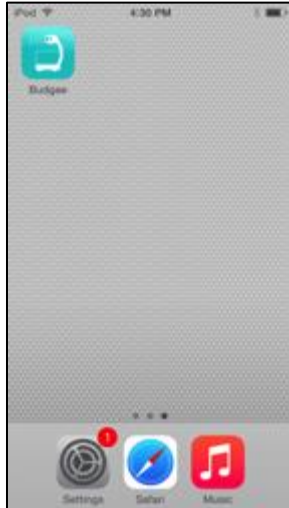
About

The About screen displays the App version, Budgee™ name, serial number, head and base firmware version, and registration.

Closing the App

To close the Budgee™ App, the user should touch the square Overview button in the bottom right corner of the screen. This will minimize the Budgee™ App and the user can swipe the app to close it completely.

BUDGEE™ APP (iOS)



Opening the App

Once the Budgee™ App has been downloaded onto the iPhone, the user can access the app by touching the Budgee™ App Icon. Power Budgee™ on if you haven't already done so. For a detailed explanation on how to start Budgee™, refer to Section "Quick Start: Using Your Budgee™".



Welcome to Budgee!

The Budgee™ App will open with a tutorial, which the user can either follow along with by swiping left, or skip by selecting Skip.

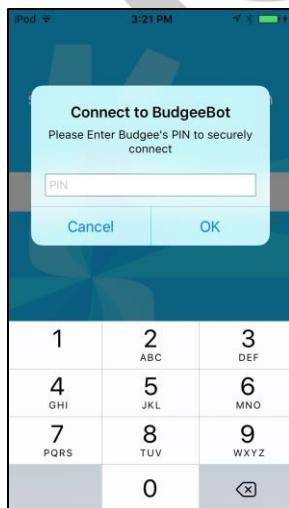


Connecting to the Robot

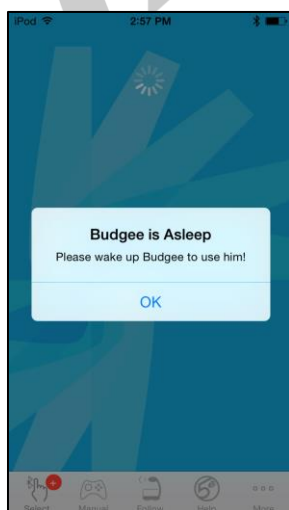
The app will start scanning for robots.



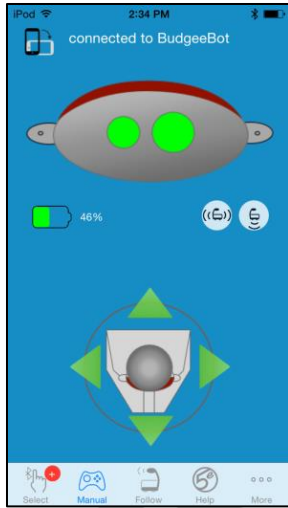
Once the scan is completed, the app will show all available robots that the user can connect with. There should only be one robot available (unless the user has more than one Budgee™), and the user should select BudgeeBot. (BudgeeBot is the default name of the robot, but the user can refer to Section “Robot Name” to customize their Budgee™’s name.)



A window will pop up and prompt the user to enter a PIN number, which will be included in Budgee™’s packaging. Enter the four digit PIN number and touch Ok. The Budgee™ App will only prompt you to enter the PIN number on the first use.

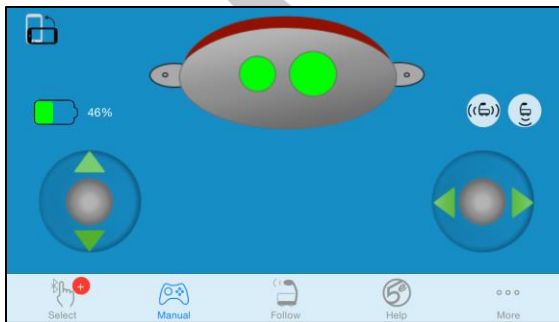


If the user tries to connect with a robot that is in Sleep Mode, a pop up window will appear onscreen. Press the head button until the LED eye display lights up and attempt to reconnect again.



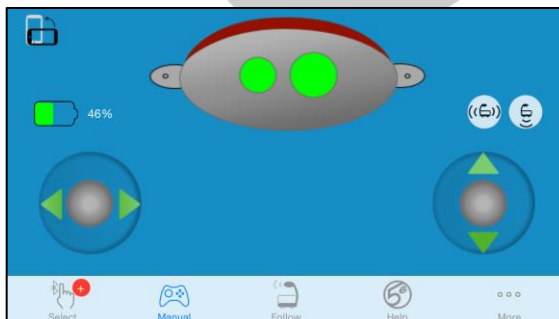
Manual Mode

The app will open in whichever mode Budgee™ is currently in, whether that is Manual Mode or Follow Mode. If the app is not already in Manual Mode, touch the Manual menu tab on the menu bar at the bottom of the screen. Budgee™'s eyes will both be on and the user can steer him by using the joystick.

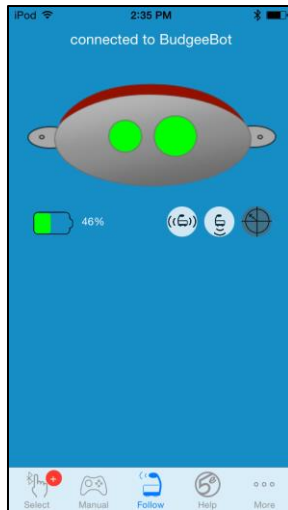


Vertical Mode versus Horizontal Mode

A handheld device is in Vertical Mode when it is held upright (pictured above). When it is positioned on its side (pictured on the left), it is considered to be in Horizontal Mode. When the user holds their handheld device in Horizontal Mode while the Budgee™ App is in Manual Mode, they will have two joysticks to steer Budgee™. The left joystick moves Budgee™ back and forward, and the right joystick moves him left and right.

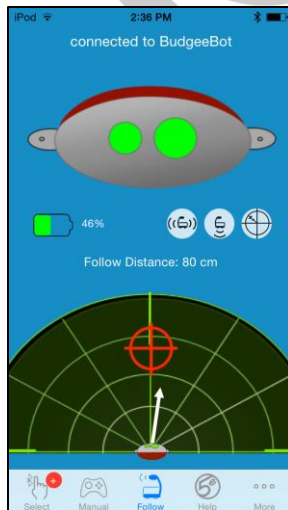


Turning the phone 180° will reverse the positions of the joysticks so that the left joystick moves Budgee™ to the left and right, and the right joystick moves him back and forward (pictured on the left).



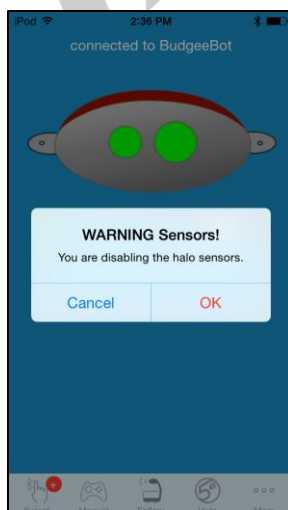
Follow Mode

Pressing the Follow button at the bottom of the screen will switch the robot to Follow Mode. Budgee™'s eyes will blink and he will say, "I am in Follow Mode." Budgee™ will now follow the transmitter (if it is powered on, see Section "Quick Start: Using Your Budgee™"), so the user should attach it to their pocket or belt.



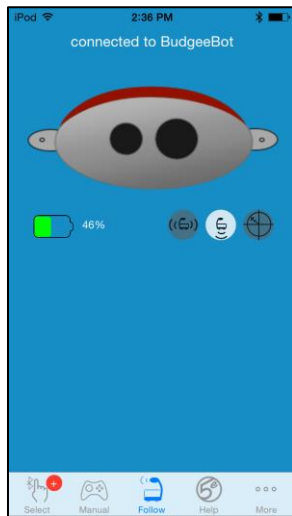
Adjusting the Follow Distance

The user may adjust the distance between Budgee™ and the transmitter by changing the Follow Distance. Simply press the radar button (the white circular button with the picture of the crosshair) to ON and move the red crosshair to the desired position, and the Follow Distance will automatically adjust. The Follow Distance range is 50-150 cm.

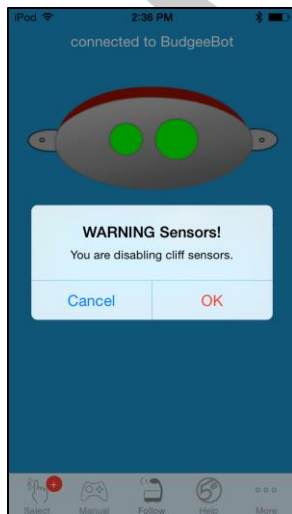


Disabling Obstacle Sensors

The small white Budgee™ icon next to the battery display icon is the Obstacle Sensor button. To disable the obstacle sensors, press the Obstacle Sensor button. A window will appear with a warning, and the user must press OK to disable.

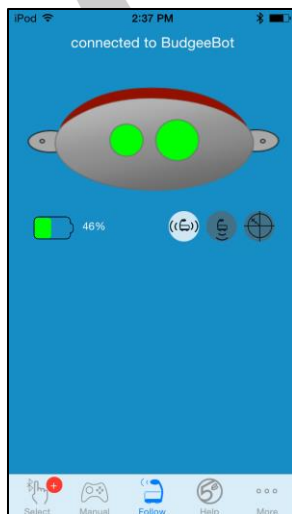


Once the obstacle sensors have been disabled, the Obstacle Sensor button will have be grayed out, as pictured here. The Obstacle Sensor button will reappear in color once the obstacle sensors have been enabled again.

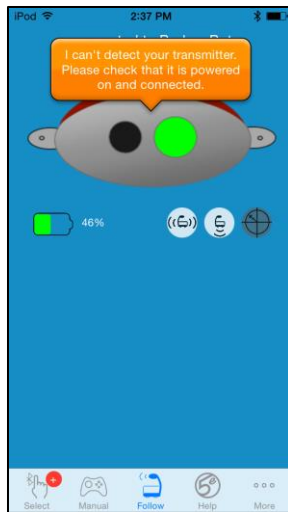


Disabling Cliff Sensors

The small white Budgee™ icon next to the Obstacle Sensor button is the Cliff Sensor button. To disable the cliff sensors, press the Cliff Sensor button. A window will appear with a warning, and the user must press OK to disable.

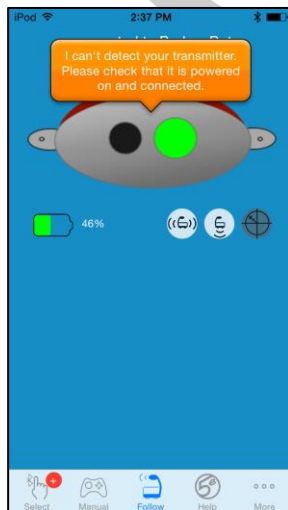


Once the cliff sensors have been disabled, the Cliff Sensor button will be grayed out, as pictured here. The Cliff Sensor button will reappear in color once the cliff sensors have been enabled again.



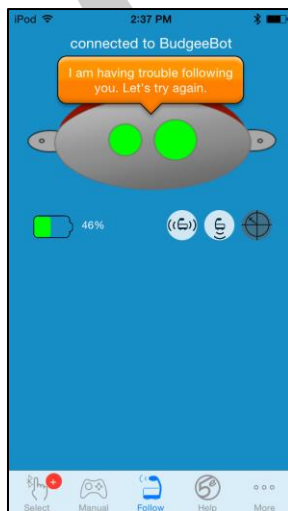
Alert Messages

If a speech bubble appears onscreen, Budgee™ has encountered a problem and requires assistance. This will be accompanied by a voice alert, but the speech bubble will also show a description of the problem. TM



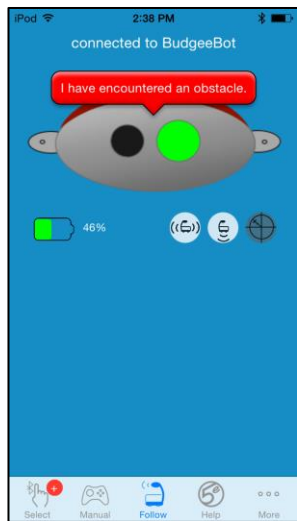
Alert Messages: Transmitter Not Working

If the transmitter is not working, this alert message will pop up and the Budgee™ App will say, “I can’t detect your transmitter. Please check that it is powered on and connected.” This means that Budgee™ is not receiving a signal from the transmitter. The user should verify that the transmitter is powered on and synced with the robot.



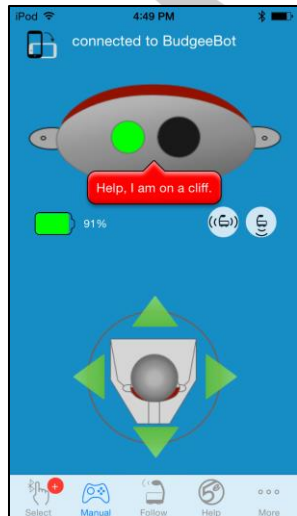
Alert Messages: Unable to Follow

If the robot is unable to follow the user, the Budgee™ App will say, “I am having trouble following you. Let’s try again.” The user should verify that the transmitter is facing the robot and that they are standing within the set Follow Distance (the default Follow Distance is 80 cm [or 31 in]).



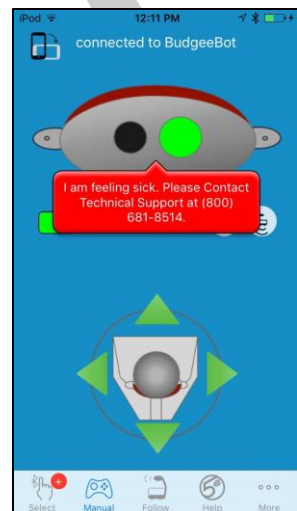
Alert Messages: Obstacle

When Budgee™ detects an obstacle, the Budgee™ App will say, “I have encountered an obstacle.” This can be caused by any object in Budgee™’s path. The user can reposition Budgee™ away from the obstacle by using either the transmitter in Follow Mode or the joystick in Manual Mode.



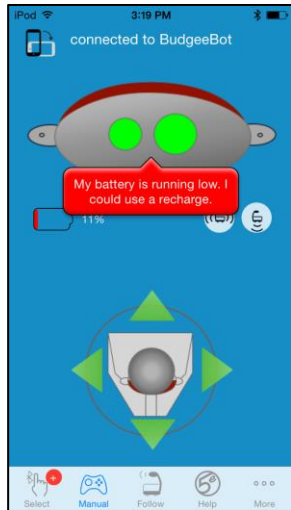
Alert Messages: Cliff

When Budgee™ detects a cliff, the Budgee™ App will say, “Help, I am on a cliff.” The user will not be able to operate Budgee™ unless they dismiss the alert by switching modes, which can be accomplished by either touching the head button or using the Budgee™ App.



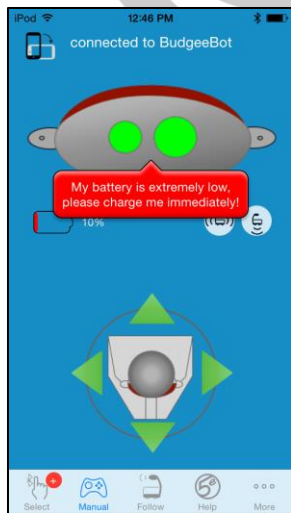
Alert Messages: Hardware Fault

If Budgee™ detects a hardware fault, the Budgee™ App will say, “I am feeling sick. Please Contact Technical Support at (800) 681-8514.” The user should either contact Five Elements Technical Support or their distributor.



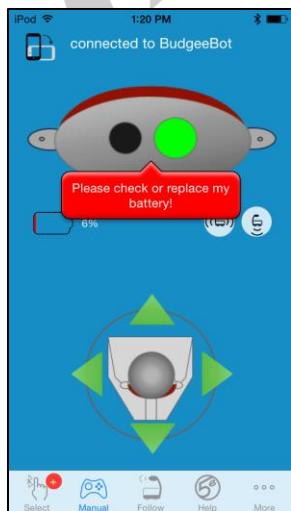
Alert Messages: Low Battery

If Budgee™ is running low on battery power, this alert message will pop up and the Budgee™ App will say, "My battery is getting low. I could use a recharge." This occurs when the battery level falls below 15%, and the alert message will disappear once Budgee™ has been charged. Once the battery level reaches 8%, Budgee™ will not have enough power to move in either Manual or Follow modes.



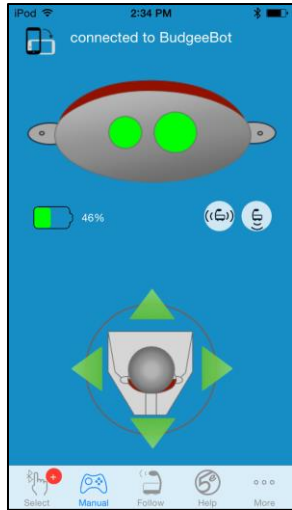
Alert Messages: Battery Critical

When Budgee™'s battery power reaches 10%, the Battery Critical alert message will display onscreen. The user should recharge their robot as soon as possible to dismiss the alert.



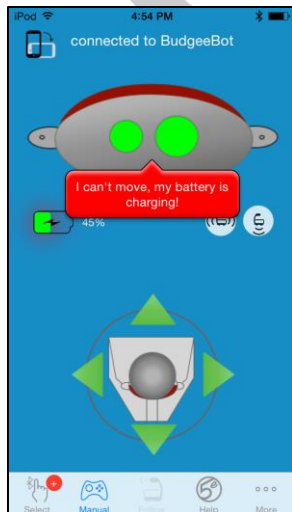
Alert Messages: Battery Fault

The Budgee™ App will display a Battery Fault alert message when the battery power reaches less than 6%, or when the battery needs to be replaced. If the user charges the battery after first receiving the message and the Battery Fault alert message persists, it is advised that they contact Five Elements Robotics Technical Support or their distributor for further assistance.

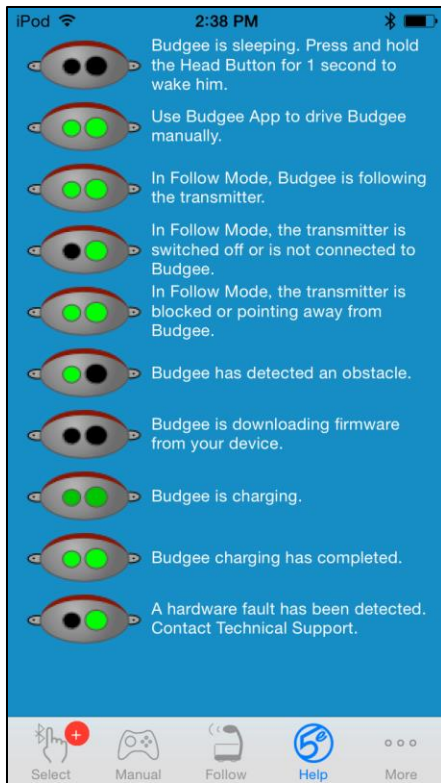


Battery Display

The battery charging icon is located to the left, underneath the Budgee™ head icon. The percentage next to the battery icon is the level of battery power remaining. The color of the battery icon indicates how much battery power is remaining: green is 40-100%, yellow is 20-39%, and red is 0-19%.



When Budgee™ is charging, the app will show a battery icon and a Battery Level Percentage (pictured left). Budgee™'s eyes will glow and the battery icon will show the battery percentage. Budgee™ cannot be operated while he is charging, although the Budgee™ App will still be displayed.



Help

The Help button on the bottom of the screen demonstrates all of Budgee™'s LED displays and their meaning:

Budgee™ is sleeping. Press and hold the Head Button for 1 second to wake him.

Both eyes are off.

Use Budgee™ App to drive Budgee™ manually.

In Follow Mode, Budgee™ is following the transmitter.

In Follow Mode, the transmitter is switched off or is not connected to Budgee™.

In Follow Mode, the transmitter is blocked or pointing away from Budgee™.

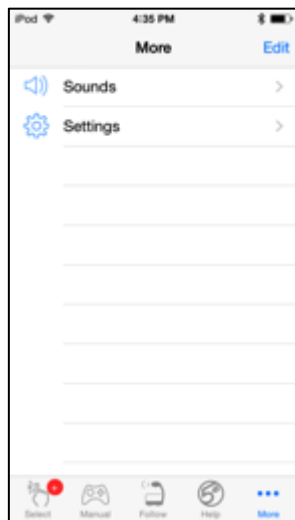
Budgee™ has detected an obstacle.

Budgee™ is downloading firmware from your device.

Budgee™ is charging.

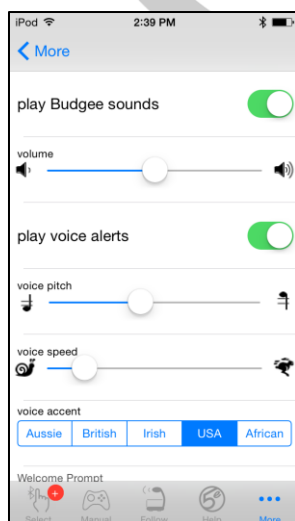
Budgee™ charging has completed.

A hardware fault has been detected. Contact Technical Support.



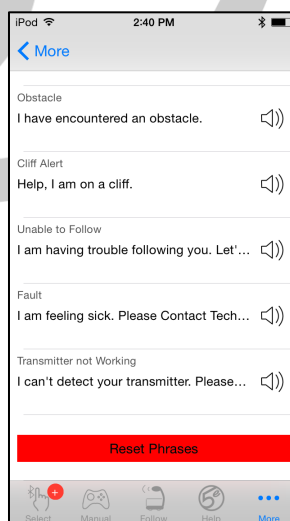
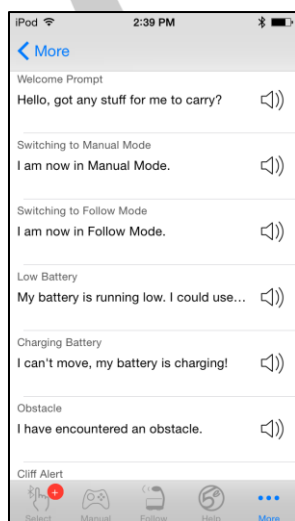
More Menu

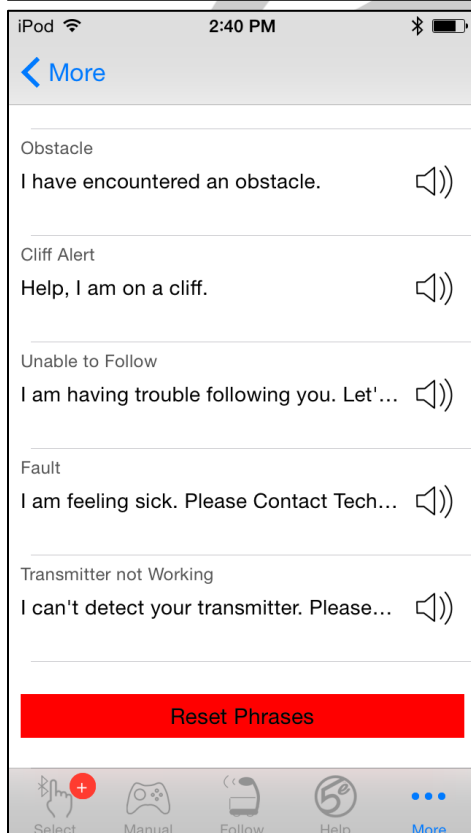
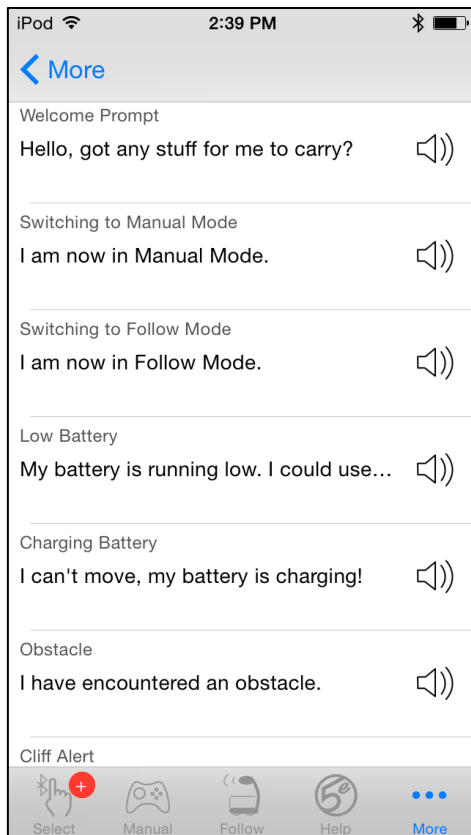
The More button on the bottom of the screen displays the Sounds and Settings submenus, all of which are covered in more detail down below.



Sounds

The Sounds submenu allows the user to enable or disable Budgee™ sounds (any robot-generated alert sounds), adjust the volume (only affects Budgee™ sounds), enable or disable voice alerts, adjust the voice pitch and voice speed, choose a voice accent, customize individual voice alerts, and reset all voice alerts to their original format by touching the Reset Phrases button at the bottom of the screen.





Individual Voice Alerts

Welcome Prompt

Hello, got any stuff for me to carry?

The Welcome Prompt occurs when the Budgee™ App is first opened.

Switching to Manual Mode

I am now in Manual Mode.

This voice alert occurs when Budgee™ is switched to Manual Mode.

Switching to Follow Mode

I am now in Follow Mode.

This occurs when Budgee™ is switched to Follow Mode.

Low Battery

My battery is getting low. I could use a recharge.

This voice alert occurs when Budgee™ has less than 20% battery power remaining.

Charging Battery

I can't move, my battery is charging!

This alert is displayed when the user attempts to operate Budgee™ while he is charging.

Obstacle

I have encountered an obstacle.

This occurs when Budgee™ is blocked by an object and can't move.

Cliff Alert

Help, I am on a cliff.

This occurs when Budgee™ detects a cliff.

Unable to Follow

I am having trouble following you. Let's try again.

This voice alert occurs when the transmitter is blocked, pointing away from Budgee™, or the user is standing too far away.

Fault

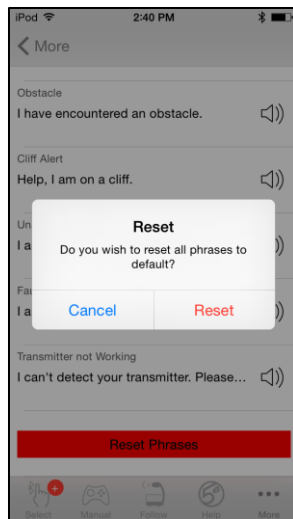
I am feeling sick. Please contact Technical Support.

Budgee™ says this when there is a hardware fault.

Transmitter Not Working

I can't detect your transmitter. Please be sure it is powered on and connected.

Budgee™ says this when he cannot receive a signal from the transmitter.



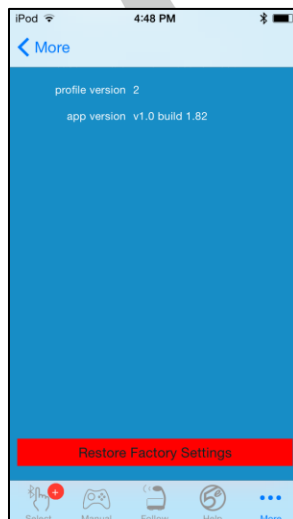
Reset Phrases

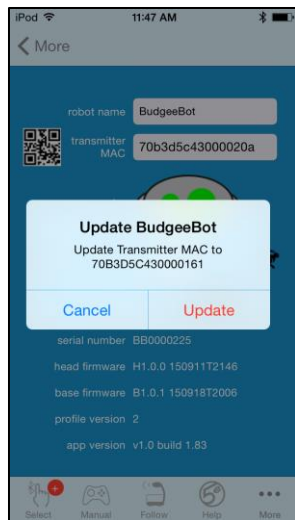
To reset the voice alerts to their default message, press the Reset Phrases button at the bottom of the Sounds menu screen. Press Reset when prompted with the pop up window.



Settings

The Settings submenu allows the user to customize the robot name, scan the QR code on the transmitter to sync with Budgee™, customize Budgee™'s eye color, change the speed of the robot in Manual Mode, and choose metric or imperial units for the Follow Distance. It also displays the serial number, head and base firmware versions, profile version, and app version. The user can scroll to the bottom of the screen to access the Restore Factory Settings button.





Transmitter MAC Address

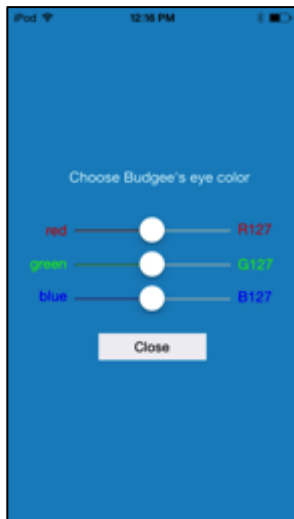
The Transmitter MAC Address bar allows the user to scan the QR code located on the transmitter so that it may sync with Budgee™. ***(Note: The robot and transmitter are already synced at the factory before being shipped out; the user does not need to scan the QR code before using Budgee™ for the first time.)***

To Use the Transmitter MAC Address QR Scan:

1. Touch the QR Code Symbol to the left of the transmitter MAC bar. This will open the camera function
2. Aim the camera viewer over the QR Code on the transmitter label. When the camera successfully reads the QR Code, it will display an Update Confirmation window with the transmitter MAC address
3. Select Update to configure the robot with the transmitter MAC address, or select Cancel to Quit

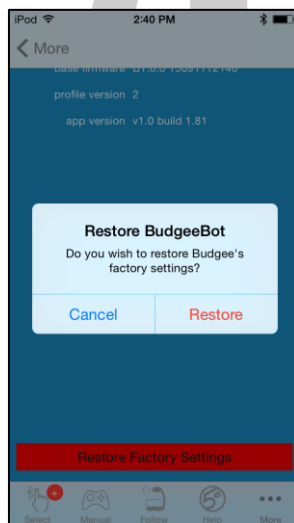


4. If Update was chosen, verify a Transmitter MAC Address confirmation screen displays. Select OK to finish



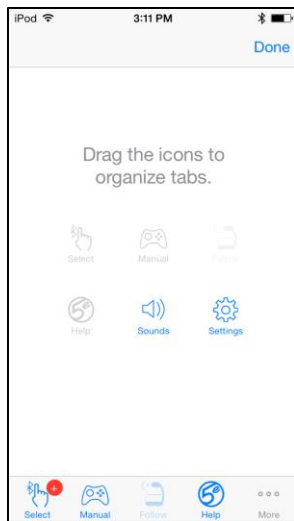
Eye Color

Touch the Budgee™ head icon to access the Eye Color submenu. The user can swipe the red, green, and blue color palettes to achieve the desired effect.



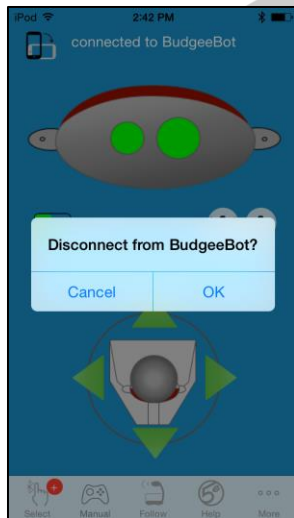
Restore Factory Settings

The Restore Factory Settings button allows the user to reset all of the customizable portions of the app back to their original format. Simply press Restore Factory Settings button and then press Restore.



Edit Tool

The user can customize the bottom menu bar by touching the More menu and touching the Edit button on the top right corner of the screen. Drag the preferred menu tabs to the bottom of the screen to change which tabs are displayed and which are moved under the More menu. (Note: any user accessing the Budgee™ App on an iPad will not have access to the Edit tool because the screen will be large enough to accommodate all of the menu tabs on the bottom menu bar.)



Closing the App

To close the Budgee™ App, touch the Budgee™ head icon and then touch Ok to disconnect the app from the robot. The user can then touch the home button, which will minimize the Budgee™ App and take the user back to their home screen.

REGULAR MAINTENANCE

Type of Maintenance	How to do it	When to do it
Cleaning Exterior Surface of Budgee™	Most cleaning of Budgee™ can be done with a dry cloth. In some cases it may be necessary to use a cloth dampened with water. DO NOT submerge or spray Budgee™ with any liquids.	As needed
Washing Budgee™ Fabric Bag	Budgee™ bag can be fully removed from the plastic hoop and washed in a standard washing machine. Use only cool water and air dry.	As needed
Cleaning Sensors	Budgee™ sensors can start to pick up dust and debris from daily use. Use a soft cloth to clean the sensors. Never use liquid of any kind on or near the sensors.	Visually inspect Budgee™ before each use. If dirt and debris is visible clean the sensors.

TROUBLESHOOTING

Issue	How to fix it	Description
Budgee™ won't power on	Turn the power switch off, wait a full minute, and then turn the power switch back on	Sometimes Budgee™ will not turn on when the power switch is pressed. This is a rare occurrence, and Budgee™ should always power on properly on the second try
Budgee™ won't follow in Follow Mode	<p>(1) Check that the robot is hitched to the transmitter</p> <p>(2) Verify that the transmitter is facing the robot and is unobstructed</p> <p>(3) Charge the robot if low on battery</p>	<p>(1) If the two are hitched, the robot should move towards the transmitter and the LED eye display should be blinking simultaneously</p> <p>(2) Budgee™ cannot receive a signal from the transmitter unless it is directly facing the robot</p> <p>(3) Once Budgee™'s battery level falls below 8%, it is unable to move in either Follow or Manual Modes</p>
Budgee™ is inoperable and needs to be moved	Turn off the power switch to enable the robot to free wheel. Budgee™ can now be pulled by the neck.	This can happen if Budgee™ has run out of battery power or has a hardware fault.

Debris in the wheels	For dirt and dust use a flexible brush (available at most retailers) and gently clean the areas around the wheels. For wire, string, or other item wrapped around the axle, additional clearing will be needed. In most cases simply spinning the wheels in reverse will loosen and remove the debris.	Sometimes dirt and debris will build up on and around the wheels
Budgee™ is detecting obstacles/cliffs that do not exist	Using a soft cloth, clean the sensors and the area around them. If the sensors have visible damage (e.g. dents) please contact Five Elements Robotics support.	If the sensors become damaged or covered in dirt and dust, Budgee™ may believe that there is an obstacle that doesn't exist.
Budgee™ is not detecting obstacles/cliffs	Using a soft cloth, clean the sensors and the area around them. If the sensors have visible damage (e.g. dents) please contact Five Elements Robotics Technical Support.	If the sensors become damaged or covered in dirt and dust, Budgee™ may no longer be able to detect an obstacle.
Battery life has reduced over time.	Please call Five Elements Technical Support for further assistance.	Lithium Ion batteries have high charging cycles, however proper battery maintenance is important for optimal performance.

KNOWN ISSUES

Robot Battery Charging Anomalies

When the battery pack is above 80% charge, the battery monitor circuit sometimes does not report the charge status correctly. There are several issues that will occur in this instance:

1. If the robot is powered on while connected to the charger, the robot may not report that it is connected to the charger.
WARNING: If this occurs, the robot will move in Manual and Follow Modes while connected to the charger. Always be sure to disconnect the battery charger from the robot before attempting to operate the robot.
2. If the robot is powered on while connected to the charger, the battery charge LED displays (Battery Charging and Battery Charging Complete) may not function. The battery itself will still continue to charge.
3. The Battery Charging display screen in the Budgee™ App may not function.
4. The battery percentage displayed in the Budgee™ App may not be accurate.

Most of these issues resolve themselves when the battery level drops below 80%.

Robot may not always stop in time to avoid a cliff

Budgee™ is equipped with sensors designed to detect uneven surfaces (such as a curb or the edge of a staircase) and stop the robot automatically, so the robot will not tip or fall. However, sometimes it is possible to defeat this safety feature by approaching the “cliff” at high speed. This applies to both Manual and Follow Modes, but especially to Follow Mode as the robot tends to be moving faster. To avoid this problem, remember to stop or slow down when approaching or operating Budgee™ close to such obstacles.

Infrared sensors do not function in bright sunlight or on dark surfaces

Budgee™'s cliff sensors use infrared light to detect uneven terrain. Unfortunately, the sensors can be overwhelmed by direct, bright sunlight. You may notice that Budgee™ stops when crossing from a shadowed area into direct sunlight, or that the robot fails to detect a curb in bright sunlit conditions. Please be aware of this limitation and take appropriate precautions.

Erratic robot behavior when robots operate in close proximity to one another

Budgee™ uses ultrasonic sonar technology to track you in Follow Mode and also to avoid nearby obstacles. Unfortunately, sonar pulses from multiple robots in close proximity may confuse the tracking algorithm and cause Budgee™ to move erratically while in Follow Mode. If you intend to operate multiple Budgees™ together, we recommend that you temporarily disable the obstacle sensors on all robots using the switch provided in the Android or iOS app.

Erratic robot behavior when transmitter is pointed towards ceiling

The ultrasonic sonar technology used in Budgee™'s Follow Mode requires the handheld transmitter to remain pointed at the robot. The transmitter projects a wide field, but when it is turned away from Budgee™, the robot may receive a distorted signal that causes it to move in an erratic pattern. If Budgee™ is behaving strangely, check the orientation of the transmitter. Remember, you can make Budgee™ stop moving immediately by switching the transmitter's power off.

On a related note, remember that Budgee™'s ultrasonic signal, like other sound waves, may be reflected by a smooth, flat surface, such as a wall. Avoid pointing the transmitter at walls as the reflections may confuse Budgee™ and cause the robot to move in an unexpected direction.

Android Budgee™ App Help screen displays poorly on Moto X phone

The Budgee™ App Help screen illustrates and describes the various robot LED eye displays. The LED eye displays depicted on the Motorola Moto X Model phone (Android Version 4.4.4) do not display accurately, and cannot be relied upon to correctly illustrate the robot's LED eye displays. Refer to page 56 for an accurate description of each LED eye display.

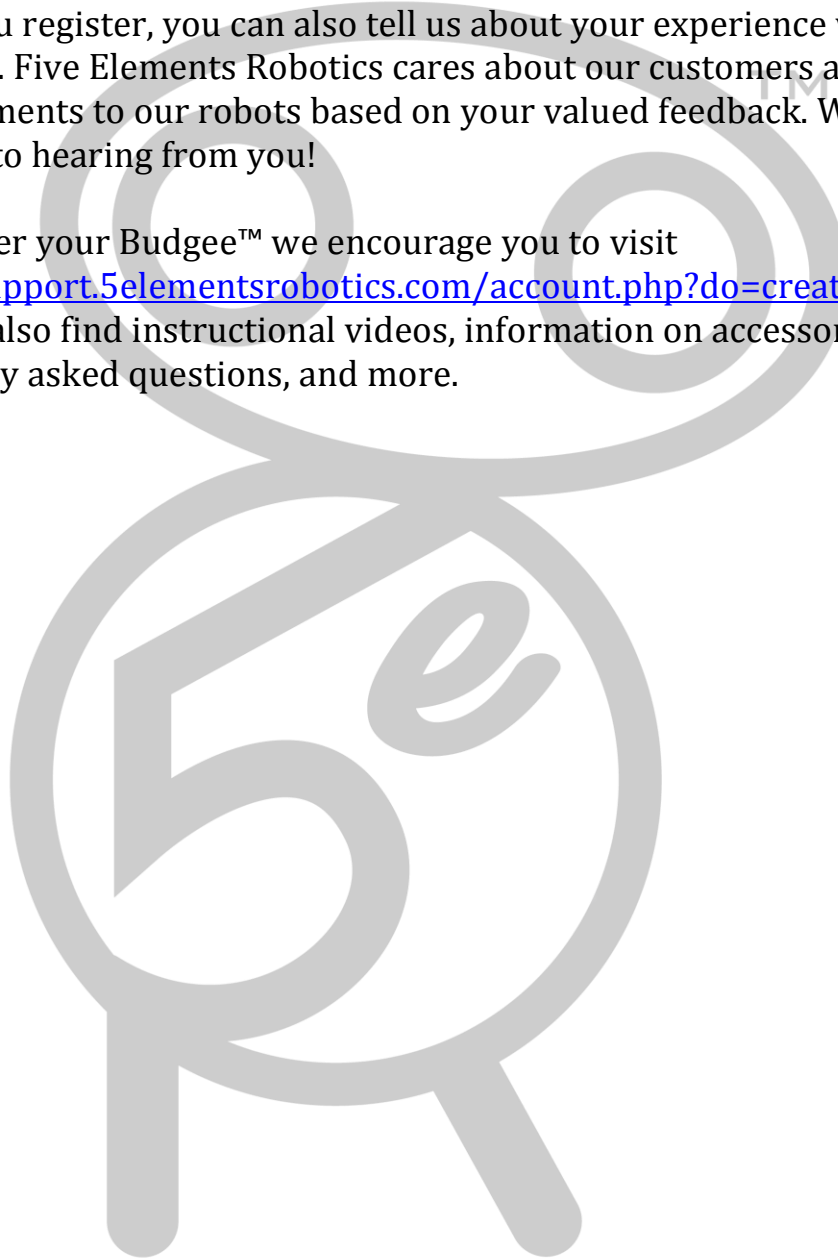


REGISTRATION

Register your Budgee™ to enjoy exclusive access to customer service, FAQ, and product updates to keep your Budgee™ running at its best.

When you register, you can also tell us about your experience with your Budgee™. Five Elements Robotics cares about our customers and makes enhancements to our robots based on your valued feedback. We look forward to hearing from you!

To register your Budgee™ we encourage you to visit <http://support.5elementsrobotics.com/account.php?do=create>. There you will also find instructional videos, information on accessories, frequently asked questions, and more.



DECLARATION OF CONFORMITY

Five Elements Robotics Budgee™ Personal Assistant Robot and Accessories

Manufacturer: Five Elements Robotics, 1333 Campus Parkway, Wall, NJ 08005, USA Declares that Budgee™ and Budgee™ Transmitter along with model M180200W111 and M050100U111 Battery Chargers, conform to the requirements of:

FCC Part 15 Subpart B, ICES003

EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3
IT Equipment

EN 300 328 (BLE Only)
All supported Low Energy Bluetooth Requirements

EN 300 328 (ZigBee Only)
WLAN 2.4GHz Requirements

EN 301 489-1/EN 301 489-17
EU Standards for EMC/Wireless Services

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 tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Operation of this equipment in a residential area is likely to cause

harmful interference in which case the user will be required to correct the interference at their own expense. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CUSTOMER SERVICE/TECHNICAL SUPPORT

If you have any questions or comments about this product, please contact Five Elements Robotics before contacting a retailer.

Please visit the Five Elements Robotics Customer Support Forum at www.support.5elementsrobotics.com for support tips, frequently asked questions and information about accessories and other Five Elements Robotics products.

For Problems or Questions Regarding Your Order:

Call our Customer Service team at 1-800-681-8514, Monday-Friday, 10AM-4PM Eastern Time; or

Email: customer_service@support.5elementsrobotics.com

For Technical Service or Questions Regarding Your Budgee™:

Email our Technical Support team: technical_support@5erobotics.com

