BSA Alpha Pilot Participants Guide

Thank you for participating in our Alpha Pilot Focus group. This guide provides details of what to do and how to do it for the next six weeks.

You should be spending some time each week on drone activities as described below.

You should have already received your drone kit.

Your area coordinators are:

- Texas participants: Craig Nehrkorn (512) 740-3740
- North Carolina participants: Mike Gerard (704) 724-24876
- Arizona/California participants: Dave McKeehan (520) 289-4475

If you need technical help, or cannot get in touch with your area coordinator, please call the drone help number (512) 829-8465 for any questions or issues.

Each week, you will receive an email survey with questions about your experiences that week and room for you to provide your feedback on both the drone and guides/instructional modules. Please take the time each week to fill this out to provide us with feedback.

This pilot program will run for 6 weeks. We have some specific maneuvers we would like you to learn and report on. In addition, we want you to fly as much as possible and have fun with this drone! Accidents are inevitable and normal for all drone pilots. This drone is designed to be easy to repair even after very hard crashes – we have included a repair kit in your pilot program bundle. If you need additional repair kits, please contact your area coordinator or call the help number.

While you are learning and testing your drone, be sure to fly in as many different locations as possible (but do keep in mind that the drone is NOT designed to fly in the rain). Fly it mainly outdoors, but if you have access to a large indoor space (like a school gymnasium), try it indoors as well. *Warning: If the drone does not get a GPS lock indoors, it will be harder to fly and have to be flown in "Manual" flight mode.*

Please remember that this is a system that is still being developed. There will be areas that have bugs, are not finished, or are not polished for final publication. The purpose of this focus group is to capture feedback on assembly, flight performance and the basic introductory instructional modules.

At the end of this guide is a list of all the guides and instructional modules available to you for this alpha test.

The following is a recommended set of activities for each week. Please feel free to do more or move faster through these steps, if you wish!

All Instructional Modules can be found under at http://guinnpartners.com/BSATrials/

1. **Week-1:** Focus on building your drone, getting the software setup, and take the drone on its first flight
    a. Set up both apps on your iPhone or Android-based phone (QGroundControl and B4UFLY)
    b. Assemble your drone
    c. Register with the FAA
    d. Try a simple first flight in an open area

    Week-1 Modules

    ● Assembly Instructions for the BSA Drone
        ○ Drone Assembly Photo Guide
        ○ Drone Assembly Video Chapter 1 Overview
        ○ Drone Assembly Video Chapter 5 Final Assembly
        ○ Drone Photo Parts List
    ● Guide to Navigating the BSA app
    ● Guide to Navigating Flight Mode App Screens
    ● RC Controller Guide
    ● Preflight & Postflight checklists
    ● Alpha Pilot Participant's Guide (this document)

Drone Assembly

1. Open your browser and go to http://quinnpartners.com/BSATrials This is where all guides and learning modules are stored.

2. Under the Beginner section, you will find four files to use in assembly.
    a. The Drone Photo Parts List provides a quick way to identify each part.
    b. The Drone Assembly Photo Guide is your main guide and instructions to assemble your drone.
    c. Watch the Drone Assembly Video Chapter 1 Overview for a quick overview of the drone parts and what the final drone will look like.
    d. When you get to the final assembly stage in the Photo Assembly Guide, you should also watch the Drone Assembly Video Guide Chapter 5 Final Assembly to see how to place the top panel which can be tricky, and the front/side body panels.
3. Please keep track of the time it takes you to assemble the drone (we will ask you to report that on the week 1 survey!).
4. Once you have completed the assembly, you have a few more steps to do before you fly.
    a. Download the QGroundControl app.
    b. Register with the FAA
    c. Check motor rotation. See Section 4 in the **Introduction to the Drone Flight Controller - Part 1.**
    d. Calibrate your drone and the RC controller. See Section 5 in the **Introduction to the Drone Flight Controller - Part 1.**

App Set Up

If you haven't already, Set up your apps on an Apple iPhone or Android-based phone. If you have already installed both apps, skip to the FAA Registration section.

You will be installing 2 apps in total (QGroundCntrol and B4UFLY).

1. Download and install QGroundControl from the App Store for iPhones and the Play Store for Android.

2. In the Apple App Store, there may be several options to download. Download the app shown below, NOT the ALTA version. In the Google Play Store there is only one app to choose from.
    Apple App Store   **Google Play Store**
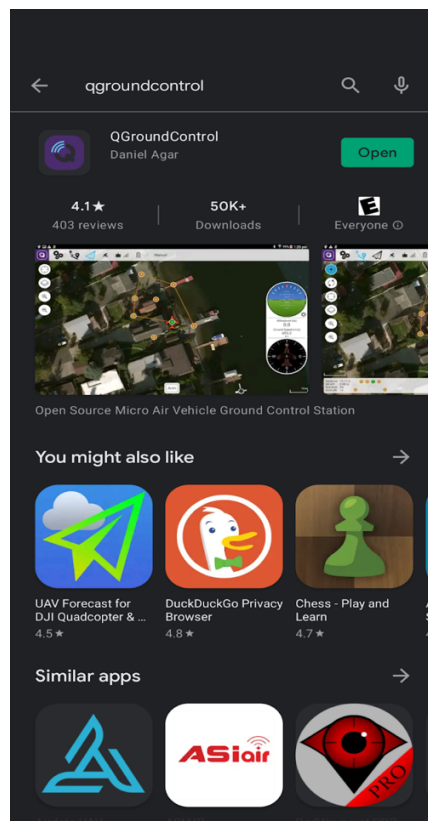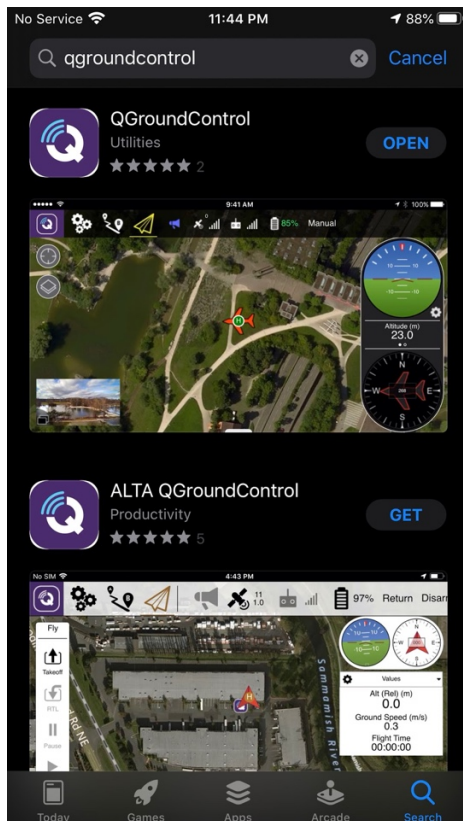
4. When you open QGroundControl, you will notice that the app is not connected to your drone and shows a notice saying "Waiting for Vehicle Connection":
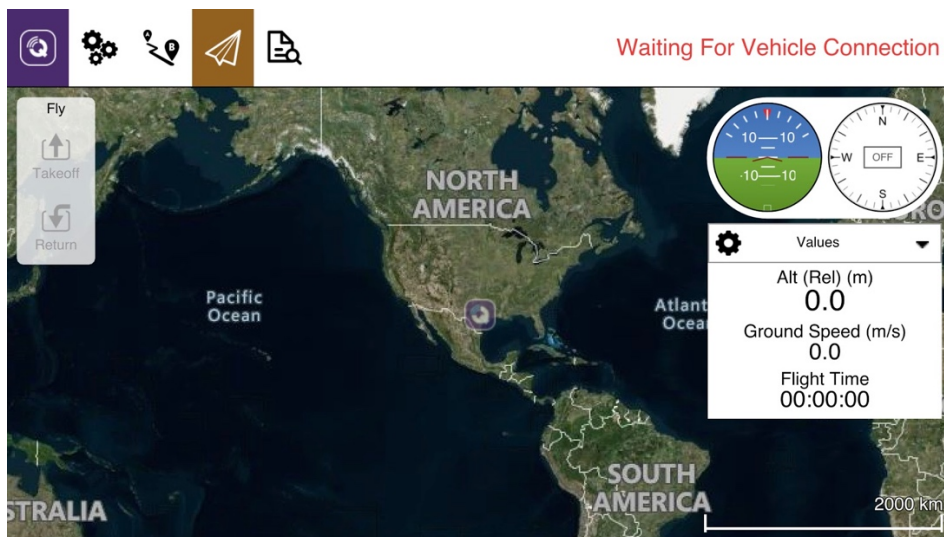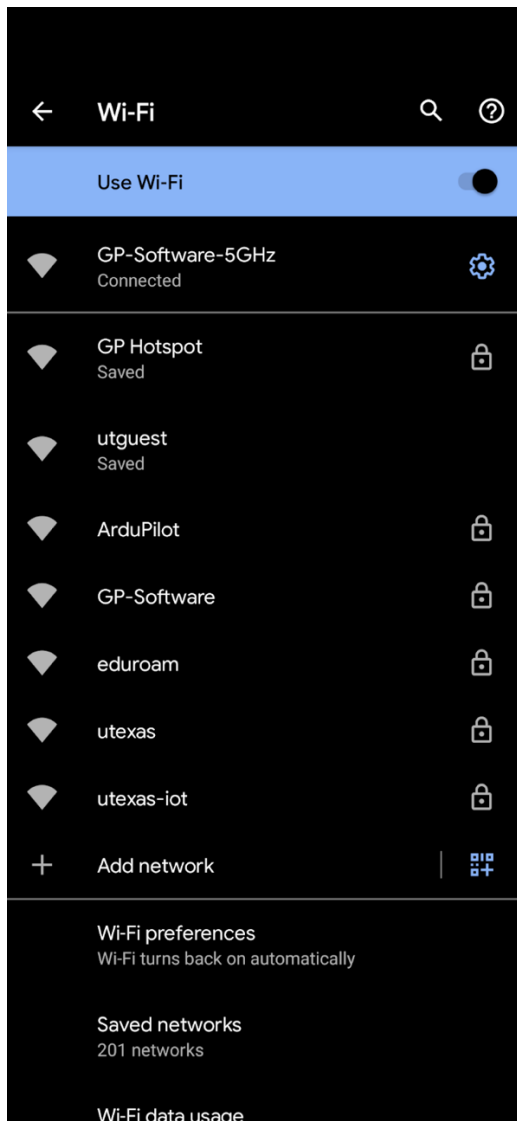

5. To connect to your drone, you need to first power on your drone, using the ARM button located on the top of your drone and connect to its WiFi access point. For both iPhone and Android, the WiFi name is called **ArduPilot** and the password is **ardupilot** all lowercase.
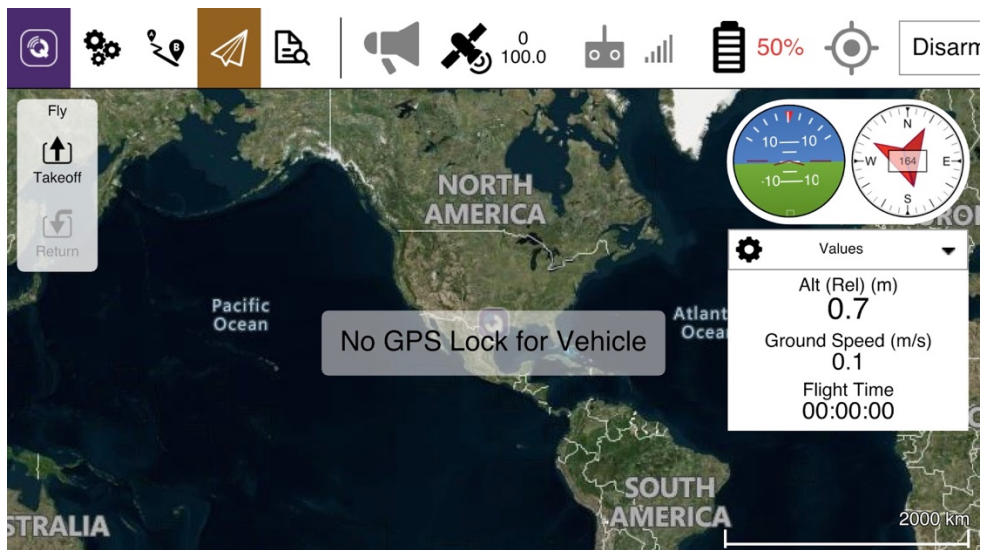
6. For iPhone, go to the Settings > WiFi and connect to ArduPilot:
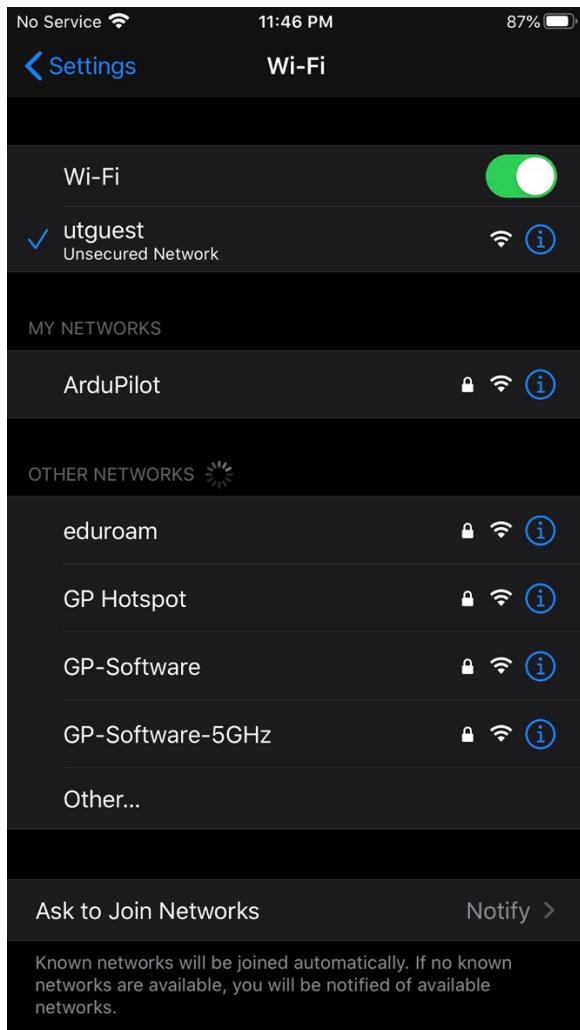
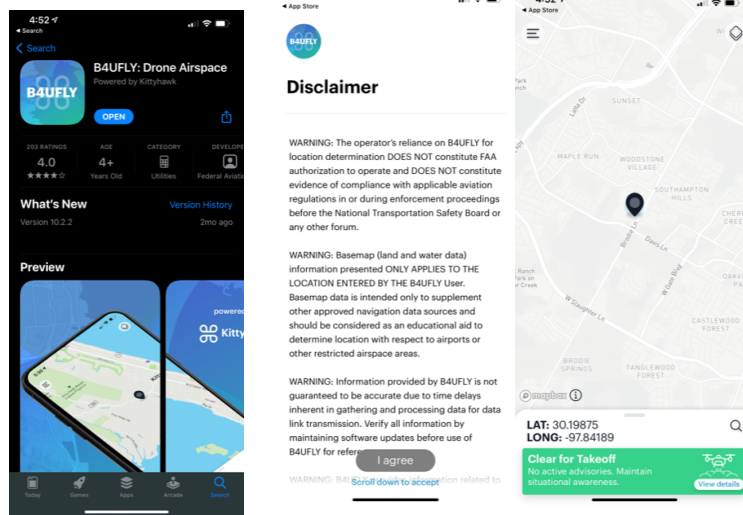7.   For Android, go to Settings > Network & Internet:

8. After you connect via WiFi and open the app, you will see that it is connected:

Install the B4UFLY App (3)
1. Go to the Apple AppStore on your phone and download the B4UFLY app
2. Accept the Disclaimer
3. Verify that you are in a space that is "Clear for Takeoff" in the B4UFLY app before flying your drone.

FAA Registration

1. If you already have an FAA recreational drone owner's registration number, you can use that number and do not have to re-register with the FAA. Skip to step 6d.
2. You need to register your drone with the FAA to make it legal to fly. You will need to provide your name, email address, home address and be prepared to pay a $5.00 fee with a credit or debit card.
3. Go to: https://faadronezone.faa.gov/#/
   a. Select the "Register" button under Recreational Flyers
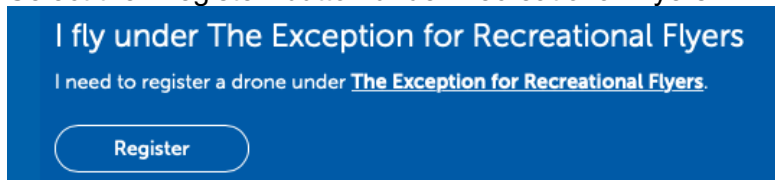
   b. Create an account with your email and a password - you will get a confirmation email that you have to open and click on the link. Once you confirm your account, you can then login.
   c. Fill out the information and then click on "Proceed to Checkout"
   d. You will need a debit or credit card for checkout - the fee is $5.00 and the registration is good for 3 years.
   e. You will be given a registration number. Print it and keep a copy with you whenever you fly. This registration number may be used for as many different drones as you own.
   f. You must mark this registration number on the outside of your drone using a permanent marker (a sharpie works!).

5. **Week-2: 2/8-2/14**: Focus on learning how to fly
    a. Read through the following knowledge guides at the web site.
        i. ***Flight Safety and Regulatory Rules***
        ii. ***Essential Drone Knowledge***
        iii. ***Planning a Drone Flight*** & ***BSA Flight Planning Template***
        iv. ***Preflight Checklist*** & ***Postflight Checklist***
    b. Review the ***Basic Flight Maneuvers Module***
    c. Use the planning guidelines in ***Planning a Drone Flight module*** to plan a flight to learn and practice the Basic Flight Maneuvers.
    d. Practice the Basic Flight Maneuvers until you have good control of the drone.
    e. Review your experience and give us feedback through the survey we email you.

    Week-2 Modules
    ● Flight Safety and Regulatory Rules
    ● Essential Drone Knowledge
    ● Planning a Drone Flight
    ● BSA Flight Planning Template V1
    ● Basic Flight Maneuvers
    ● Preflight & Postflight checklist

6. **Week-3: 2/15-2/21**: Focus on building your flying proficiency
    a. Continue to practice the Basic Flight Maneuvers.
    b. Plan a couple of flights in your area to practice flying and have fun with your new drone!
    c. If you are in the Austin, TX area, you can contact Craig Nehrkorn at (512) 740-3740 to fly the beginner's race course, using the ***Beginner's Competition Guide.***
    d. Review your experience and give us feedback through the survey we email you.

    Week-3 Modules
    ● Beginners Competition
    ● Preflight & Postflight checklist
    ● Events & Competitions Handbook

7. **Week-4: 2/22-2/28**: Focus on building your flight proficiency and if ready, move up to the ***Intermediate Flight Maneuvers Module***
    a. If you are a novice drone operator it will probably take you 2-3 weeks to get good at these maneuvers
    b. Learn and practice the Intermediate Flight Maneuvers.
    c. Plan a couple of flights, go flying and have fun!
    d. Review your experience and give us feedback through the survey we email you.

    Week-4 Modules
    ● Intermediate flight Maneuvers
    ● Preflight & Post flight checklist

8. **Week-5: 3/1-3/7**: Focus on building your flight proficiency and continue learning and practicing the Intermediate Flight Maneuvers
    a. Continue to learn and practice the Intermediate Flight Maneuvers.
    b. Plan a couple of flights, go flying and have fun (are you seeing a pattern here?)!
    c. Review your experience and give us feedback through the survey we email you.

- Intermediate Flight Maneuvers
- Intermediate Race
- Preflight & Postflight checklist
- Events & Competition Handbook

9. **Week-6: 3/8-3/14**: Focus on building your flight proficiency and continue learning and practicing the Intermediate Flight Maneuvers
   a. Continue to practice the Intermediate Flight Maneuvers.
   b. If you are in the Austin, TX area, you can contact Craig Nehrkorn at (512) 740-3740 to fly the intermediate race course using the ***Intermediate Competition Guide.***
   c. Plan a couple of flights, go flying and have fun!
   d. Review your experience and give us feedback through the survey we email you. This is the final week of the pilot program.