

Anabat Swift Instructions Acoustic Transects

Acoustic Program Background:

GA DNR Mobile Acoustic Route Program:

- Sampling should occur twice each year, once in June AND once in July.
- Sampling should begin **30** minutes after sunset.
- Sampling should only occur on nights suitable for bat activity (low wind, no rain or fog, appropriate temperatures—above 60 degrees).
- Transects should be run at 20 mph

GA NABat Mobile Acoustic Route Program:

- Sampling should occur within one 5-night period in June OR July. During this 5-night period this route should be completed twice.
- Sampling should begin **45** minutes after sunset.
- Sampling should only occur on nights suitable for bat activity (low wind, no rain or fog, appropriate temperatures—above 60 degrees).
- Transects should be run at 20 mph

Survey Equipment:



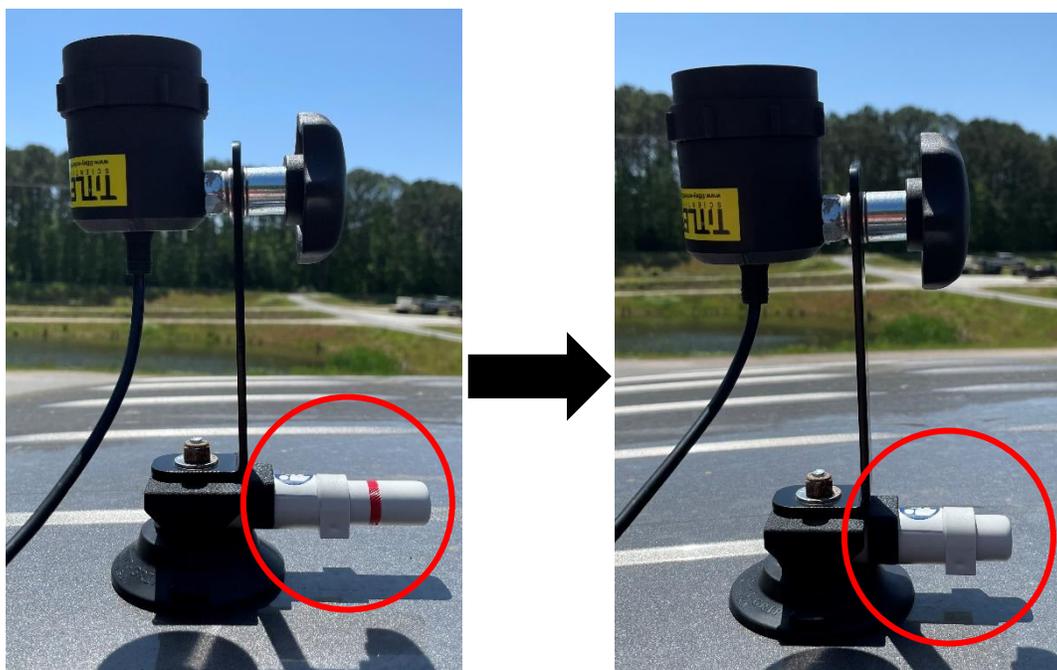
Before Beginning: Planning for Your Survey

1. Communicate with your group and coordinator to pick up the Anabat case from your designated retrieval point.
2. Charge the rechargeable batteries that are in the case using the provided wall plugin. Charge the provided speaker using the provided usb cable and power block.

3. Go to this [Google Drive](#) to download your route map and directions. Review these carefully before you go out so you know where you are going!
 - a. To do this, select the appropriate folder (NABat_MobileRoutes or GADNRMobileRoutes) for your route. Within that folder you will find a datasheet folder, route information folder, and instructions for how to run that type of route. The NABat datasheet folder includes datasheets that are route-specific so be sure to download the correct one (we printed backups and put them in the Anabat folders)! Within the information folders for each route type, you will find individual folders for each named route that contain directions and maps for your route.
 - b. If you want, you can download your route map to a free app that you can install on your phone called Avenza Maps. Instructions for that process can be found in the Google Drive.
4. Plan for how to submit your data to GA DNR: Using paper datasheets or virtually.
 - a. Paper datasheets and timesheets are included in the folder of each Anabat unit. Electronic copies can also be found in the Google Drive (link above) and printed prior to starting your route.
 - b. Those running GA DNR Mobile routes can electronically enter your datasheet information in the field at <https://arcg.is/0b0SPW>. If you are running a NABat Mobile Route, then you can only use the paper datasheet. ANYONE can use this link to virtually enter your timesheet: <https://arcg.is/0jbvb9>.
5. Determine where your route begins and how long it will take for you to get there from your home. We advise that you do a test-drive of your route during the daytime before you conduct your survey. This will allow you to familiarize yourself with the turns and verify road conditions have not changed since the route was established.
6. Check what time sunset will be for that area and monitor the weather: Routes cannot be driven in the rain. Plan when to leave your house so that you give yourself enough time to get to your route starting point and set up the equipment before your route start time.
 - a. GA DNR Mobile Routes should begin 30 minutes after sunset.
 - b. NABat Mobile Routes should begin 45 minutes after sunset.

At Survey Start: Setting up Anabat, Microphone, and Speaker

1. Remove the Anabat Swift, speaker, and microphone from the box. Ensure that all other accessories stay in the box and are returned with the Anabat.
2. Attach microphone to the roof of your vehicle. The roof should be clear of dirt and debris so the base can establish a good connection. Depress the plunger on the suction cup until the red line is no longer visible (picture below).



- Use the adjustment knob to turn the microphone until it is pointing straight up. Ensure that the microphone is securely attached to the vehicle. Feed the microphone cord through a cracked window or car door to have the end piece of it inside the vehicle.
- Fill out data sheet (excluding start time and ending data). You can use a weather app on your phone, and the tables provided on the datasheet, to get that information. Attach “Survey in Progress” signs to vehicle. Ensure the sign is placed on a flat surface and attached well before driving. If you have a newer model car, then the magnet may not attach securely to your vehicle. If that occurs, place it in your back window so it is still visible while you drive.



- Plug the microphone cord into the front of the Anabat microphone socket (picture below). **DO NOT TWIST THE PLUG TO GET IT STARTED!** This can break the connection pins. You should push the plug into the connection terminal instead. There is a silver arrow (picture below) on the end of the microphone cord. The arrow aligns with the notched portion of the plug connection on the Anabat. Once you have the pins securely fitted into the plug, you can gently twist and tighten the knurled ring (silver piece) on the cord until it tightens in the Anabat unit. **DO NOT TWIST THE BLACK PLASTIC**, only the silver ring. Your microphone should now be firmly plugged into the Anabat unit.

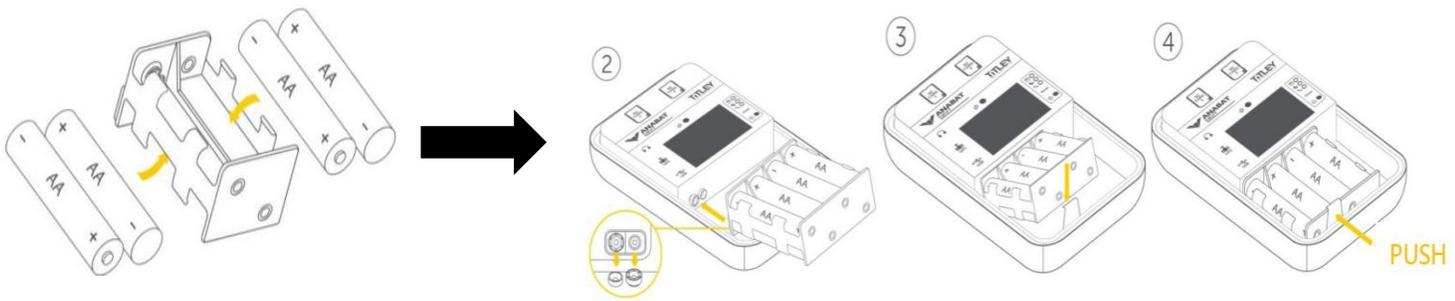


Placement of microphone cable on front cover of Anabat Swift unit.



Silver arrow on microphone cable end showing proper orientation of cable inserted into the Anabat unit with silver ring tightened.

- Open up the Anabat and insert 4 AA batteries into the battery holder. Place the holder into the Anabat unit.



- Turn on the Anabat by holding down the gray power button (picture below) in the center of the left segment of the case. The power button is above the screen: Hold it down until you see the screen light up. If a popup message appears upon startup, then see below for troubleshooting tips. If there is no popup message on the screen you can continue to the next step.
 - When you turn on the unit the screen will display a message stating it is checking the space on the SD card. This is normal and in a few moments this message will disappear, and you will get an "In Use #G free" message within the SD card shape.
 - If on the bottom left corner of the screen you see a "Check microphone" message, refer to the bottom of this document for troubleshooting tips. A "Check microphone" message should not appear if the microphone is connected correctly.
 - The screen will time out after a few seconds of inactivity.** It will give you a popup warning before it does and you can tell it then to sleep or stay on. Making no selection will put the Swift to sleep automatically. If you need to use the screen after it has timed out and is black, you can tap the power button to wake it up.
- Assure the Continuous recording mode  (picture below) is selected by seeing if there is a glowing red light beside it. If so, continue to the next step. If another one of the symbols is highlighted instead, see the troubleshooting section at the bottom of the document.

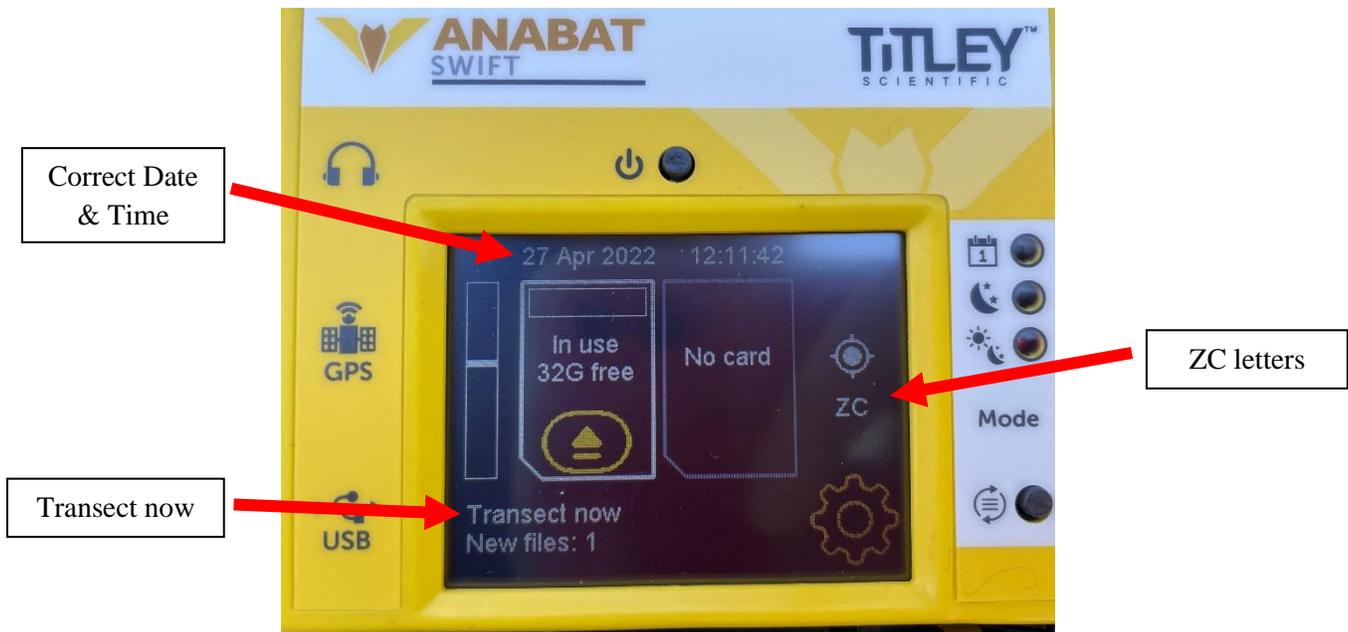


- Wait for the GPS signal to be obtained -- this should begin automatically. Verify that the GPS signal is locked using the steps below.
 - The bottom left corner of the screen (picture below) will say "Waiting for GPS" until it is locked. It can take up to a few minutes for the GPS signal to lock. Do not begin your transect until this message goes away and changes to say "Transect now," then you can begin the route. If you are having trouble getting the GPS signal to lock after several minutes, or if your

unit does not display the “Waiting for GPS” text, see the troubleshooting tips at the bottom of this document.



10. Plug in the speaker to the left of the screen by the headphone jack symbol. Turn on the speaker using the On/Off button on its side.
 - a. At this point, you can test if the speaker is working by snapping your fingers above the microphone: You should hear a static response sound verifying the noise is being picked up by the device. If you do not hear anything, and the speaker is switched to the On position with the volume turned up, see the troubleshooting guidance at the bottom of the document.
11. As a final check of the equipment setup, confirm that your screen looks like the below image.
 - a. Verify the time and date are correct, that the bottom left corner says “Transect now,” and that you can see the letters ZC on the right side of the screen. If these are all correct, then move on to the next step and begin your route.
 - b. If any of these is incorrect or missing, then refer to the troubleshooting section at the end of the document under the “Screen Display Incorrect” header for next steps.
12. Now your Anabat unit should be setup and you should be ready to go!
13. Enter your vehicle being careful not to shut the microphone cord in the door or dislodge survey equipment. You can roll up the window but do not roll it up all the way and pinch the cord. Place the Anabat unit in a secure location in your vehicle, such as face up on the dashboard with the included sticky pad used to hold the unit in place, to begin your driving route.
14. The red light on the front of the unit will flash when calls are being recorded. However, if the red light on the outside of the case is flashing consistently there may be an error. Check the screen inside the case for any warning messages.



If you have further questions or if your unit does not appear to be working properly, please contact Katrina Morris or Emily Ferrall at the numbers below.

Completing the Survey

1. Write down exact start time on data sheet.
2. Drive the survey route from beginning to end at 20mph. If road conditions are poor, drive as close to 20 mph as possible, allowing for safety first.
 - a. If you notice a lot of feedback static noise coming from the speaker while you are driving the route, turn down the volume on the speaker so it is less distracting. Our acoustic software program can filter out the noise calls, so you do not need to adjust any sensitivity settings on the Anabat unit to remedy this.
3. Avoid extended stops and try to maintain a constant speed.
4. Note any road changes or alterations in route on the data sheet.
5. At end of survey, turn off the Anabat by opening the case and holding down the gray Power button until you get a popup that says the unit is Powering Off and counts down until the screen goes black and the Continuous recording mode light goes out. Record the exact stop time on the data sheet.
6. Finish the ending data boxes on the data sheet and return it to the folder in the completed data sheets section.

Disassembling the Anabat Swift. Speaker, and Microphone

1. Make sure the Anabat unit is powered completely off. This is very important to avoid call data corruption.
2. Unplug the microphone from the Anabat by gently twisting the knurled ring (silver piece) on the cord until it becomes loose. Then carefully pull the black cord straight out of the Anabat. **DO NOT TWIST THE BLACK PLASTIC PIECE!**
3. Unplug the speaker from the Anabat.
4. Remove the batteries from the Anabat unit and place them in the box. Do not leave the batteries plugged into the Anabat unit.
5. Return the Anabat, speaker, and microphone to the box. Ensure that all other accessories stay in the box and are returned with the Anabat.
6. Remove the Survey in Progress signs from your vehicle.
7. Ensure all equipment, signs, data sheets, and instructions are secured before leaving the stopping point.

That's it, you have completed your Anabat route. Good work! Georgia DNR thanks you for putting in this time to help us monitor Georgia bats. You can now let your group know that you have finished your route and will be returning the Anabat unit to the designated holding facility.

Troubleshooting Guidance by Issue

- **Pop-up Message Appears Upon Startup (and What to Do)**
 - Batteries are Low : Change them out for fresh ones before your route.
 - Format the SD card: **DO NOT DO THIS**. Turn off the unit and contact Emily or Trina at the numbers below.
- **Check Microphone**
 - Verify that the microphone connection to the Anabat unit is snug. If it is, you can check on the roof-mounted microphone where the cable joins the mount to see if that connection is securely tightened. To do so, unscrew the top of the microphone black case and gently pull the microphone head out of the black case. Verify the cable there is snugly tightened to the microphone attachment via the silver ring.
 - If none of this works, the microphone could be malfunctioning. Stop your route and contact Emily and Trina for guidance.
- **GPS Issues**
 - If it has been several minutes and the signal is still not locked in, then you can try turning the unit off and on again to see if that helps. Another thing to help obtain the GPS signal is placing the unit in a closed position on your vehicle dashboard so the lid is facing up where there is a clear view of the sky.
 - If you do not see the “Waiting for GPS” text on your screen, check to make sure you are in the correct recording mode (see “Mode is Incorrect” below).
- **Mode Is Incorrect**
 - Under the Mode label on the unit, use the gray button to cycle through the recording options until you see the right light glowing beside the  symbol to indicate Continuous recording is set. Another way to verify this is by looking at the bottom left corner of the screen, where you should see the words “Transect now,” to indicate that you have the correct mode selected to capture bat calls.
 - If you have the mode set to Continuous correctly and you do not see “Transect now,” the transect setting may have been turned off. To check, push the  button on the screen and navigate through the menu options as follows: Settings → Other → Transect Mode → Make sure this is set to **On**
- **Cannot Hear Anything from Speaker**
 - If you snap your fingers in front of the microphone you should see the red light on the outside front of the case flash, and if you look inside the case at the screen the bar on the left side of the screen, the bar should become filled with green to indicate data being recorded. If these two things occur, the issue is with the external speaker.
 - First, make sure the speaker is plugged firmly into the Anabat unit. If that doesn't work, the speaker may need to be turned off and on again. If audio is still not coming through, the speaker may be dead and needs recharging.
 - If you believe the speaker is charged, the issue could be that a setting on the Anabat unit has been changed. To check this, push the  button on the screen and navigate through the menu options as follows: Settings → Other → Audio Output → Make sure this is set to **On**
 - If none of the above occur when you snap your fingers, then something is wrong with your microphone setup. See the troubleshooting entry “Check Microphone” for more suggestions.
- **Excessive Feedback/Static Noise from the Speaker**
 - Push the  button on the screen and navigate through the menu options as follows: Settings → Trigger → Sensitivity. Use the arrows to lower the sensitivity slightly until the static lessens. *The sensitivity should be set to 15 when you start your survey. You need to put it back on 15 at the end of your survey if you do change it during your route!*

- **Screen Display Incorrect:**

- Date and/or Time is Incorrect
 - Date: The GPS connection should fix the date. Check the “GPS Issues” troubleshooting entry and make sure you got the GPS fix to happen correctly. You can tell the GPS fix happened correctly by checking the bottom left corner of the screen. If you see the words ‘Transect now’, then it has worked properly.
 - Time: Hit the  button on the screen and navigate through the menu options as follows: Settings → More ½ → System → Time Zone → Set to -4:00.
- Bottom left corner does not say “Transect Now”
 - Refer to the troubleshooting “Mode is Incorrect” section above and check your Transect settings and Mode.
- ZC not showing on screen
 - This likely means you see the letters FS. FS stands for Full Spectrum and means the calls are being recorded in the incorrect format. The correct format is zero-cross (ZC).. To change this push the  button on the screen and navigate through the menu options as follows: Settings → Recording → File Type → Make sure that **ZC** is selected here and not WAV.

Still Having Problems or Questions? USE THIS CONTACT INFORMATION:

- Call Trina Morris (678-836-5769) or Emily Ferrall (470-606-6666) only when troubleshooting problems that will prevent you from completing your route.
- For other questions related to your route:
 - Email katrina.morris@dnr.ga.gov or call Trina Morris’ office (706-557-3220) or cell (678-836-5769)
 - Email emily.ferrall@dnr.ga.gov or call Emily Ferrall’s office (706-557-3212) or cell (470-606-6666)