eBee-plus checklist

Beforehand

- ❑❑❑❑ Create Mission on eMotion (mission blocks, start, at least one possible landing location, RTK/PPK)
- ❑❑❑❑ **Charge** 2 batteries to 100%
- ❑❑❑❑ Make sure laptop is charged
- ❑❑❑❑ Download map data in eMotion
- ❑❑❑❑ **Clear** SD card
- ❑❑❑❑ Make sure weather is temp below 95 wind speed below 26.8mph (12m/s) and no precipitation (conversion: 1 m/s = 3.6 km/h = 2.24 mph = 1.94 kts (nm/h)).

Items to Bring

- ❑❑❑❑ Drone (whole case), check contents
  ❑❑❑❑ Body, ❑❑❑❑ wings, ❑❑❑❑ battery x 2, ❑❑❑❑ modem, ❑❑❑❑ remote control, ❑❑❑❑ modem cord
- ❑❑❑❑ Camera (whole case) and test pattern
- ❑❑❑❑ Laptop and cable
- ❑❑❑❑ Inverter (to power laptop off of car)

- ❑❑❑❑ tripod and holder for modem

Pre-Startup

- ❑ ❑ ❑ ❑ Check landing zone to make sure it is clear of debris
- ❑ ❑ ❑ ❑ Rubber bands have no signs of damage
- ❑ ❑ ❑ ❑ No visual damage (see Ebee manual **section 9.1** for details)
- ❑ ❑ ❑ ❑ Connect ground modem to laptop
- ❑ ❑ ❑ ❑ Attach wings
- ❑ ❑ ❑ ❑ Make sure servos are secure
- ❑ ❑ ❑ ❑ Turn phones to airplane mode
- ❑ ❑ ❑ ❑ Make sure ground modem is a few feet off the ground in an open area with its antenna pointing perpendicular to the flight path
- ❑ ❑ ❑ ❑ Check in eMotion that the landing approach is into the wind and the mission block is perpendicular to the wind
- ❑ ❑ ❑ ❑ Attach battery
- ❑ ❑ ❑ ❑ Place remote control unit next to/near computer for easy access

Post-Startup

- ❑ ❑ ❑ ❑ Let drone sit still in the open while it completes preflight checks (until the status light turns green)
- ❑ ❑ ❑ ❑ Make sure drone is connected in eMotion
- ❑ ❑ ❑ ❑ Assign mission to drone (mission blocks, take-off, start, home, landing zone).
- ❑ ❑ ❑ ❑ Make sure mission block is perpendicular to the wind
- ❑ ❑ ❑ ❑ Under RTK/PPK choose standalone/PPK

Camera calibration

- ❑ ❑ ❑ ❑ Mount camera on drone (remember to attach lens covering and make sure lenses and covering are clean)
- ❑ ❑ ❑ ❑ **Once the drone is running the camera will start heating up. The camera is cooled by the passage of air during flight, so the steps prior to takeoff must be done without lollygagging.**

- ❑ ❑ ❑ ❑ Make sure the multispectral sensor light flashes purple
- ❑ ❑ ❑ ❑ Turn drone in a counterclockwise circle (propeller is 6 and nose is 12) until the multispectral sensor light flashes green
- ❑ ❑ ❑ ❑ Flip drone over nose to tail until the multispectral sensor light flashes blue
- ❑ ❑ ❑ ❑ Flip drone over the left wing until multispectral sensor light changes color
- ❑ ❑ ❑ ❑ Sunshine sensor light is solid green (indicating GPS/GNSS connectivity)
- ❑ ❑ ❑ ❑ Place test pattern on flat surface in the sunlight, hold drone above, click calibrate in eMotion

Launch Sequence

- ❑ ❑ ❑ ❑ Point yourself and the drone into the wind
- ❑ ❑ ❑ ❑ Hold drone out in front of you
- ❑ ❑ ❑ ❑ Shake forwards and backwards 3 times in 3 seconds
- ❑ ❑ ❑ ❑ The status LED will pulse blue until the motor is fully powered up and ready for take-off at which point it will start blinking green (should only take a few seconds)
- ❑ ❑ ❑ ❑ Angle the drone 45 degrees upwards (light should turn solid green).
- ❑ ❑ ❑ ❑ Take two steps forward and gently push forwards as you release it.
- ❑ ❑ ❑ ❑ If you turn on the remote control the drone will automatically switch to manual

Shutdown Sequence

- ❑ ❑ ❑ ❑ Disconnect battery

Post-Shutdown Checks

- ❑ ❑ ❑ ❑ No visual damage on drone
- ❑ ❑ ❑ ❑ Servos are secure
- ❑ ❑ ❑ ❑ Camera took photos

Bad Stuff (preflight)

- ❑ ❑ ❑ ❑ If the drone status light blinks red preflight checks failed, disconnect battery and try again
- ❑ ❑ ❑ ❑ if any parts overheat, disconnect battery and let parts sit in the shade for a couple minutes
- ❑ ❑ ❑ ❑ Re-shake Ebee three times to abort take-off

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Bad Stuff (during flight)

❑ ❑ ❑ ❑ If eMotion gives a warning, acknowledge warning
❑ ❑ ❑ ❑ Battery below 20%, go to home then land
❑ ❑ ❑ ❑ bird attack: take evasive action, fast descent, fast climb, roll. If bird persists, land immediately
❑ ❑ ❑ ❑ if other aircraft enters airspace, fast descent, then go to home if home appears to be out of harm's way, otherwise if drone is threatened by said aircraft, land immediately
❑ ❑ ❑ ❑ eMotion is reporting lost connection. Check modem, if all three lights are blinking, connection has been lost; if one or more lights are solid, try plugging the modem into a different USB port
❑ ❑ ❑ ❑ If the drone keeps circling start and isn't starting the mission, make sure mission is assigned, and the after take-off option is set to start or resume mission, click the resume mission button, click the reset mission button

Manual Mode

❑ ❑ ❑ ❑ If plan to use manual mode, do pre-flight testing on ground (see 10.12 in User manual)
❑ ❑ ❑ ❑ eMotion should indicate whether assisted manual or full manual mode is selected
❑ ❑ ❑ ❑ Full Manual: The sticks of the remote control directly set the motor power and the angle of the ailerons of the drone.
❑ ❑ ❑ ❑ Assisted Manual: The sticks of the remote control are used to set the speed, turn rate and climborsinkrate.
❑ ❑ ❑ ❑ As soon as you turn on the remote control, the drone will switch to manual mode