1.0 Summary

1.1 Version 2.0.2 is Teal's second formal release of aircraft firmware for Black Widow and Teal Settings. This new release of BW Firmware, along with Teal Settings, includes various bug fixes, performance enhancements, and several new features.

1.2 2.0.1 is Teal Drones' first formal firmware release for the Black Widow aircraft, introducing obstacle avoidance, enhanced video clarity, and improved mission reliability. The update expands flight control options, refines camera performance, and strengthens both system stability and operator control.

2.0 Improved Features

2.1 Video Pipeline

2.1.1 With this release, there is improved performance of the video pipeline by pinning it to performant cores on the CPU. The CPU is set to its maximum clock speed and maximum HZ (with no auto throttle) while preventing rate throttling.

2.1.2 The adjusted tuning of the video pipeline allows less under-exposure in dark conditions, as well as preventing flickering in other lighting conditions.

2.2 Better Integration with the Net Warrior Ecosystem

2.2.1 The 2.0.2 release improves the integration with the Net Warrior Ecosystem by: allowing the network monitor to be the sole handler of IP settings, fixing the backend network interface issues, removing the default gateway, and allowing the network monitor to set that configuration, and properly querying the network monitor.

2.3 Over-the-Air (OTA) Firmware Updates for Drone via GCS

2.3.1 In this release, a major upgrade was made for over-the-air firmware updates for the drone via the GCS. Error Handling was introduced to help with flow and user experience.

2.3.2 Note: When performing an OTA update through teal settings, after the drone firmware finishes downloading, the upload step may report as "failed". After tapping the 'Try Again' button in the top right corner, the issue will be corrected, and you won't need to redownload the firmware. The update will then begin uploading as expected and finish the update process.

2.4 Electronic Image Stabilization

2.4.1 The 2.0.2 release also implements Electronic Image Stabilization (EIS) for

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the first time in the Black Widow. EIS v1.0 is utilized to reduce shakiness in the video feed and will continue to improve in future releases.

3.0 Fixes and Reliability

3.1 Added warning messages to the user when VOA is enabled but the drone is not in POSCTL: VOA mode.

3.2 Update security keys as per standard industry practices to protect network connections.

3.3 Updated Doodle Radio Firmware from 10.2 to 10.6.

3.4 VOA is now disabled when the user records in 4k to prevent performance issues and video dropouts.

3.5 Fixed a bug where the drone would not disarm when landing with VOA enabled.

3.6 Fixed a bug preventing USB pairing from working on ADB-locked drones.

3.7 Fixed a bug preventing the 'format drone' button in GCS from working.

3.8 Fixed a bug with the console view auto scroll.

3.9 Fixed a bug when displaying the Drone Radio IP.

3.10 Fixed a bug with the Teal Setting Screen Serial Number Display.

3.11 Fixed a bug where Teal Settings would not reflect the active Wi-Fi Connection.

3.12 Fixed a crash when navigating to radio defaults.

3.13 Fixed UI issue with Subnet Mask Dropdown extending off-screen.

3.14 Updated verbiage throughout the app.

3.15 Update security keys as per standard industry practices to protect network connections.

4.0 Revision History

Rev	Section	Paragraph	Owner	Technical Review	Summary of Change
-	All sections – Initial Release	-	Jim Cory, Senior Director, Product Line Management	Christina Raetz, Technical Writer	Initial issue

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