



# TO. ACSL SOTEN owners

January 16, 2025

# Service Letter ACSL-SOTEN-SB24-018

ACSL TAKEOFF for SOTEN Version 1.16.0 Release Notes

Thank you for your continued use of ACSL SOTEN. On December 19, 2024, ACSL TAKEOFF for SOTEN version 1.16.0 was released with the improvements described in this document. Please read this document thoroughly and then follow the instructions in the TAKEOFF User Manual to update ACSL TAKEOFF on your devices and the firmware of your ACSL SOTEN aircraft and accessories.

The ACSL TAKEOFF for SOTEN ground control application version 1.16.0 includes SOTEN aircraft (Nx) firmware version 1.2.10, CX-GB100, CX-GB300, and CX-GB400 camera firmware version 1.20, and CX-GB200 camera firmware version 1.21. When the SOTEN aircraft is successfully updated, the "System Information" tab in the "Settings" view of the TAKEOFF application should indicate "Nx 1.2.10" as shown in Figure 1.

If updating from TAKEOFF v1.13.6 or earlier, updating to this version of TAKEOFF will include an over-the-air update of the SOTEN aircraft, standard controller, cameras, and battery. If updating from TAKEOFF v1.14.4, there will not be any update of the standard controller and battery.

😤 Connected   Position	~	53% (13:15)	<b>(</b> • >	2	<b>ک</b> ر (۱۰۰)	III TLM	III RC	19:34	R
Drone ^	System Version	n							
General	Nx	1.2.10							
System Information	NA .	1.2.10							
Firmware	Transmitter	1.15							
Flight Calibration	Falcon	1.1.1 (v30)							
Maintenance									
Lifespan Management	List of serial nu	umbers connected to t	he drone						
Restriction (GPS)									
Safety Features			Versior	ו Che	ck				
Controller									

Figure 1. ACSL TAKEOFF ground control application "System Information" tab. \*Note that "Falcon 1.0.9" may be displayed without any change in functionality.



#### Ensure aircraft battery and controller are fully charged before starting the firmware update.

If 'BATTERY FIRMWARE OLD' appears on the controller's LCD during the SOTEN firmware update, the battery firmware will update automatically after the aircraft firmware is successfully updated and the aircraft is powered on again.

## Major Firmware Updates

1. Enhanced Video Quality

Several improvements have been implemented to improve the camera vibration resistance and overall quality for the real-time video stream and recorded footage.

2. Optimized Electronic Image Stabilization (EIS) for Upper Camera Mount\*

The accuracy of electronic image stabilization (EIS) has been enhanced when using the CX-GB400 optical zoom camera on the upper camera mount.

\*Note: This update applies exclusively to the CX-GB400 optical zoom camera. The same improvement for the CX-GB100 standard camera was implemented in a previous version of TAKEOFF.

3. Refined "Navigation Calc. Error" Trigger

The detection criteria for the "Navigation calc. error" notification have been refined to reduce unnecessary alerts that do not impact aircraft performance.

### Precautions

When updating using the ACSL TENSO controller, **be sure to remove the SD card from the TENSO**, uninstall the TAKEOFF app before installing the latest TAKEOFF app, then perform the aircraft firmware update procedure.

When the SOTEN aircraft is updated with the firmware that is included with this version of TAKEOFF some of the aircraft settings will be automatically reset to their default values. Any previous changes to those aircraft settings will not be retained. If you wish to keep the current settings, make a record of the settings prior to the update and reenter those settings after the update. The settings that will be reset are summarized in the screenshots below.



• Restrictions (GPS) settings will reset those shown in Figure 2.

TAKEOFF				- [	
😤 Connected   Position	57%(14:15)	( <b>۰۰)</b>	all TLM all RC	23:31	2
App ^	Auto control parameters				
General					
Comm Links	Maximum autonomous yaw rate	45	deg/s		
Offline Maps	Maximum autonomous translation acceleration/deceleration				
MAVLink	Maximum autonomous translation acceleration/deceleration	9.8	ft/s2		
Remote ID	Maximum manual horizontal flight speed	33.5	mph		
Drone ^					
General	Maximum manual descent speed	4.4	mph		
System Information	Maximum manual yaw rate	60	deg/s		
Firmware		00			
Flight Calibration	Maximum manual ascent speed	6.7	mph		
Maintenance	Automatic takeoff altitude	0.0			
Lifespan Management		9.8	ft		
Restriction (GPS)	Automatic takeoff speed	2.24	mph		
Safety Features					
Gimbal Adjustment	Automatic landing speed	2.24	mph		
Stick Sensitivity Adju	Go Home altitude	33.3	ft		
Option		55.5			
Data Erasure	Go Home horizontal speed	11.18	mph		
Reset Transmitter Bi	Go Home vertical speed				
LTE	Go nome vertical speed	4.47	mph		
	Maximum altitude relative to ground	0.0	ft		
	Load	lrite	)		

Figure 2. The Restrictions (GPS) default settings.



• The Safety Features settings will reset to those shown in Figure 3.

TAKEOFF							- 0	×		
👾 Connected   Position	62%(15:30)		(••	<b>₽</b> ≷ <sup>16</sup> ((•))	all TLM	all RC	13:43			
Drone ^	Safety Features									
System Information Firmware	Transmitter loss tolerance time (autonomous) Time until emergency mode activation due to communication loss with	30 n the transmitter (non-LT	sec E connection)							
Flight Calibration	GCS communication loss tolerance time (autonomous)	30	sec							
Maintenance	Time until emergency mode activation due to communication loss with TAKEOFF (during LTE connection)									
Lifespan Management	Note: Emergency mode will NOT be activated if the drone and transmitt	er are connected as Pilo	t.							
Restriction (GPS)	Go Home route	Straight line								
Safety Features	GPS multipath risk detection	Off	w							
Controller	Weak radio signal detection	Off								
Gimbal Adjustment										
Stick Sensitivity Adju	Magnetic field anomaly detection	$\bigcirc$								
Option	Easy takeoff and landing (POS only)									
Data Erasure	Load	W	rite							
Reset Transmitter Bi	Load									
LTE										

Figure 3. The Safety Features default settings.

• The Gimbal Adjustment settings will reset to those shown in Figure 4.

TAKEOFF									- 🗆	×
Connected   Position	62%(15:30)				<b>(</b> ,	₽. <ৈ <sup>14</sup> ((•))	all TLM	III RC	13:43	
Drone ^	Gimbal Adjustment									T
General System Information	Operation mode ?	Mode B	•							
Firmware	Pan minimum speed	1.00	deg/s							
Flight Calibration	Pan maximum speed	10.00	deg/s							
Maintenance	Tilt minimum speed	1.00	deg/s							
Lifespan Management	nie minimum speed	1.00	005/0							
Restriction (GPS)	Tilt maximum speed	10.00	deg/s							
Safety Features										
Controller										
Gimbal Adjustment					_					
Stick Sensitivity Adju			Load	Write						
Option										

Figure 4. The Gimbal Adjustment default settings.



• The Stick Sensitivity settings will reset to those shown in Figure 5.

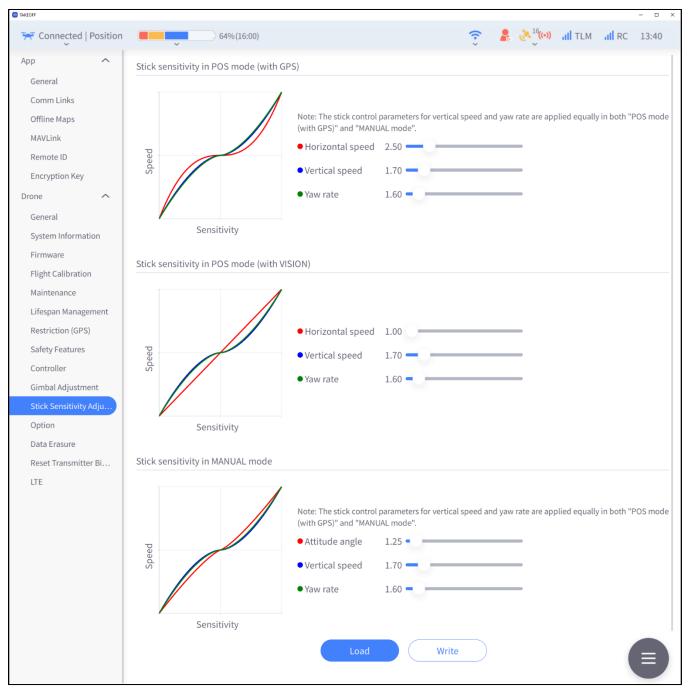


Figure 5. The Stick Sensitivity default settings



• The Option settings will reset to those shown in Figure 6.

TAKEOFF												- 0	×
Connected   Position	·	629	%(15:30)				(÷	2	ره) <sup>14</sup> ((۰))	III TLM	III RC	13:44	
Drone ^	Collision Av	oidance Sei	nsor										Τ
General System Information		voidance ble/Disable	Warning (Yellow)		Danger (Red)		Alert sound						
Firmware	Тор	$\bigcirc$	6.6	ft	3.3	ft	$\Box$						
Flight Calibration Maintenance	Bottom		6.6	ft	3.3	ft							
Lifespan Management	Forward	$\bigcirc$	11.5	ft	8.2	ft	$\Box$						
Restriction (GPS)													
Safety Features													
Controller													
Gimbal Adjustment													
Stick Sensitivity Adju					Load	W	rite						
Option													

Figure 6. The Option default settings.

Note that this update can be performed from any previous version and all updates from all previous versions will be included in the update.

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