

For Questions: Call Mike Reynolds 253-222-7086

Purpose: The purpose of this test is to provide a method for the ATU to check the respective connections to the ship side systems. When power is applied, the ATU will “sniff” each pin and report the pin or system status on the Spidertracks APP and the SD card. Ethier method provides similar information/status concerning the ship side connections and overall function.

NOTE: This test may be performed in the hangar. No satellite connection is required. This test should be conducted prior to any flight tests to ensure that the wire and system are functioning correctly.

Method #1: Spidertracks APP

1. Download the Spidertracks mobile APP on your Android or Apple device. The following steps are from an Android APP; however, the Apple APP should be similar.

Spidertracks

Spidertracks

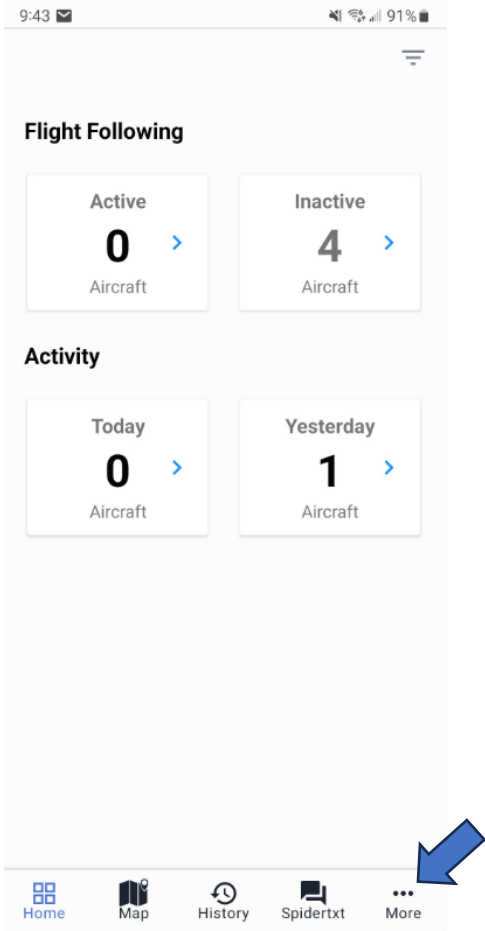
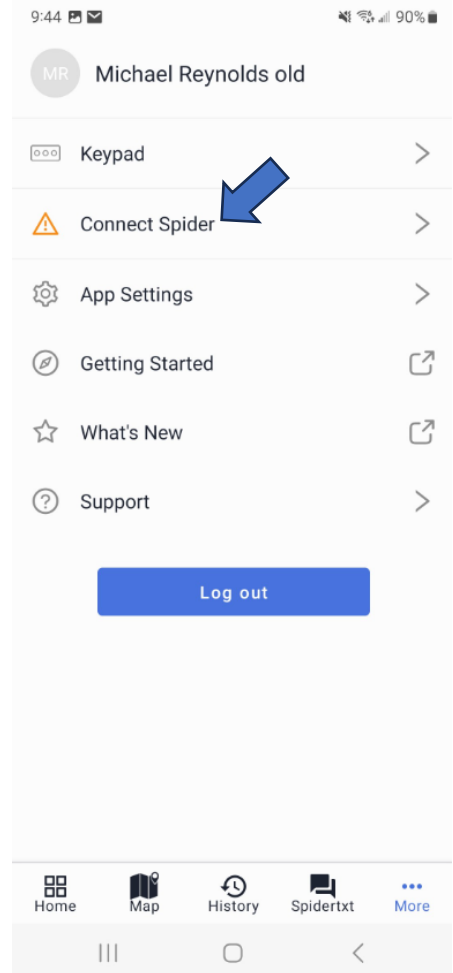
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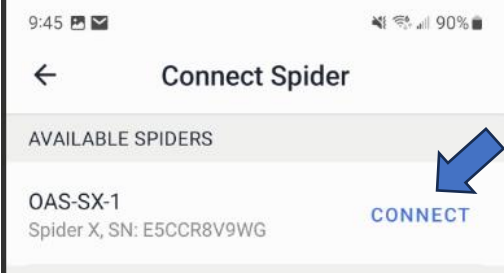
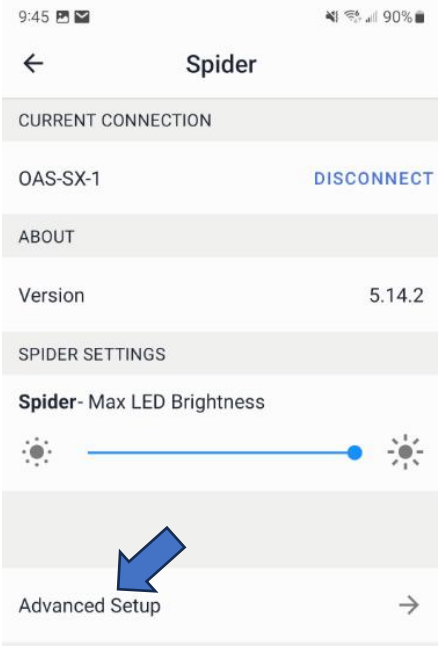
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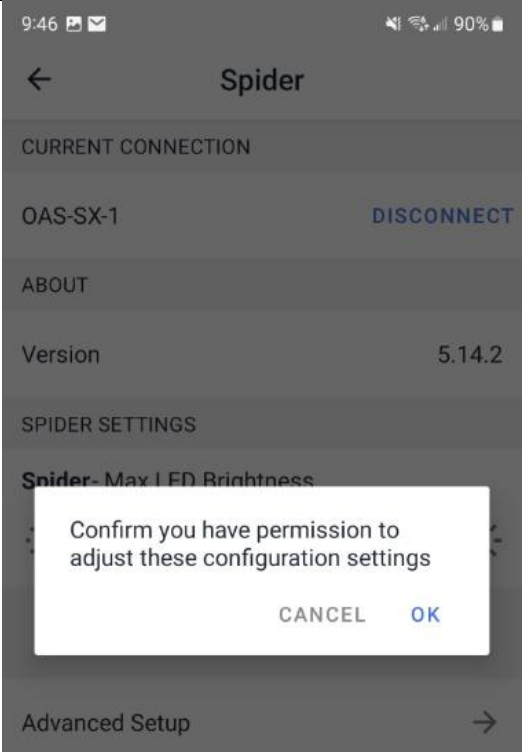
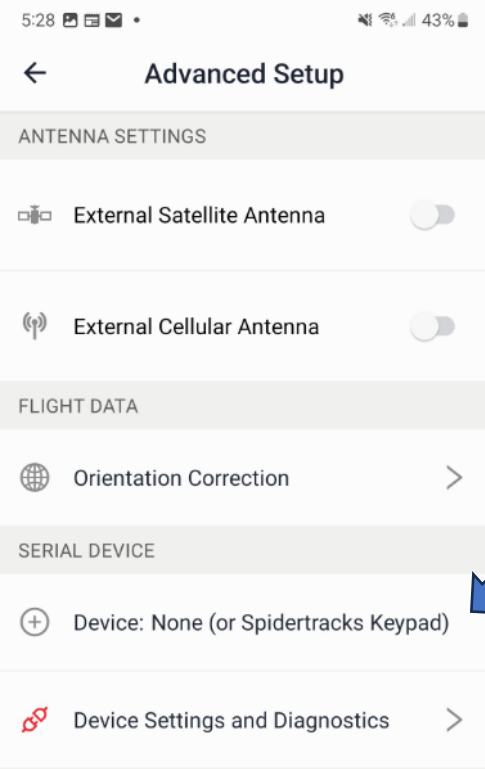
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- i. Install all the wiring per the respective wire diagram.
- ii. Apply power to the helicopter and ensure that the SX lamp (on the end of the unit) illuminates Orange
- iii. Continue with the following steps.

2. Open the APP with your login. Click “More”	3. Click “Connect Spider”
	

4. Click "Connect"	5. Click "Advanced Setup"
	

6. Click "OK"	7. Click "Device"
	

Once the app is working through Step 10, page 4 above, perform the following:

BUCKET

1. Power OFF aircraft
2. Position CONFIG Switch to Bucket
3. Install a 1.5V battery in the C-40 connector as shown in Figure 1 (below) (**OPTIONAL***)
4. Hold bucket OPEN switch (maintain this bucket OPEN condition)
5. Apply aircraft power and keep bucket OPEN switch ON for about 30 seconds. Then release switch.
6. Activate the Spidertracks App and proceed to step 10, page 4 above.
7. You will see the following type of data on the Spidertracks APP (see step 11, page 4). The data displayed is updated every 10 seconds. This data is also provided on the SD card (see method 2). You can check this data for a full SX transmit and receive test.

STL+LOG=C: 1, Volts: 1.5, Gate: 1

Where:

C: This is the state of ATU P2-C.

0: not grounded

1: grounded

Volts: This is the voltage on the C-40 connector. In this case 1.5 V*

Gate: This is the state of the Bucket OPEN switch

0: No Bucket OPEN signal has been received

1: Bucket OPEN signal has been received

NOTES:

If you are receiving data as shown above, then the wiring to the SX is correct for the Transmit portion of the data transfer from the ATU to the SX. You can check the data from the SX in method 2 if required.

*If a battery is installed per step 3 (above)

Once the app is working through Step 10, page above, perform the following:

TANK

1. Power OFF aircraft
2. Pull AFF circuit breaker (no power to Spider X or ATU)
3. Position CONFIG Switch to Tank
4. Power On Aircraft and let Helitak PLC startup (need to let air pressure for tank doors build up)

WARNING: Tank doors may strike the ground.

5. Hold Tank OPEN switch (maintain this Tank OPEN condition)
6. Apply power to ATU and Spider X and keep Tank OPEN switch ON for about 30 seconds. Then release switch.
7. Activate the Spidertracks App and proceed to step 10, page 4 above.
8. You will see the following type of data on the Spidertracks APP (see step 11, page 4). The data displayed is updated every 10 seconds. This data is also provided on the SD card (see method 2). You can check this data for a full SX transmit and receive test.
9. *You can open and close Tank Door and observe the Tank Door status in the Spider X feed.*

STL+LOG=C: 1, Tank Qty: N, Door: 1

Where:

C: This is the state of ATU P2-C.

0: not grounded

1: grounded

Tank Qty:N: Tank Qty (leading value). Example: Tank Qty 4193 Liters, N=4

Door: This is the state of the Tank Doors

0: No Bucket OPEN signal has been received

1: Bucket OPEN signal has been received

NOTES:

If you are receiving data as shown above, then the wiring to the SX is correct for the Transmit portion of the data transfer from the ATU to the SX. You can check the data from the SX in method 2 if required.

Method #2 Data collected on SD Card (BUCKET ONLY)

SD Card Location: The SD card is located on the side of the ATU within the narrow slot in the enclosure.

Remove the SD card by depressing the card and allowing it to snap back. Remove with tweezer or another tool. Replace the SD card by placing in SD card holder and depressing in, with small snap back.

Test and Results

Date: _____

Aircraft N: _____ ATU SN: _____

1. Aircraft Power Off _____
2. Put the 1.5V battery in the C-39 (pin G+ F-) connector _____ (see Figure 1 below)
3. Activate Bucket open switch _____ for about 30 seconds.
4. Apply aircraft power _____
5. Wait about 30 seconds _____ Release switch
6. Modify input states as required. The Bucket OPEN switch can be OPEN or CLOSED every 10 seconds and the new state will be recorded on the card. Data is updated every 10 seconds.
7. Shut off power _____
8. Remove SD card _____ Place into computer SD card reader. Go to the last entry in the excel file

DATA ON SD CARD (format may vary)

Column A: Power On Test Declaration

Column B: Pin C state 0 = open, 1=GND

Column C: C-39 voltage (will read voltage applied to C-39 shown below 1.5V applied)

Column D: Bucket Door State: 1=OPEN, 0=CLOSED

Column E: Spider X Handshake: 1=PASS, 0=FAIL (This test checks both transmit and receive from the Spider X. Bucket Open switch must be active during this test, so a message is sent to the SX)

	A	B	C	D	E
1					
2	PWR ON TEST	Pin C:1	Volts:1.5	Door:1	Spider X:1
3					

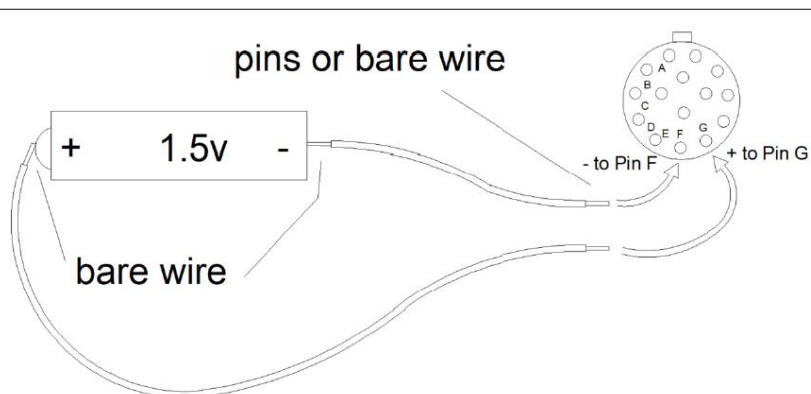


Figure 1

Revision Log

Rev	Date	Description
IR	14 Jan 2025	Original Release
R1	4 April 2025	Revise step 9 header from: Click "Spidertracks Serial API" to: Click "Device Settings and Diagnostics"
R2	9 April 2025	Page 6, Column C was C-39. Revised to C-40
R3	15 April 2025	Method #2 step 3, data fields: added in why the switch needs to be held
R4	25 March 2026	Add Helitak Tank procedure.