

FREQUENTLY ASKED QUESTIONS

TITAN

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BLUEHALO

How do I set up my Titan?

Before you begin using the system, make sure you have the unit, accessories (antennas, battery, cables), tablet, quick start, and user guide in front of you.



The first step is to make sure that all antennas are securely tightened to the unit following the visual diagram in the User Interface or the provided User Guide. It is critical to make sure they're all tight - loose antennas will result in signal loss or unmitigated drones. Pay close attention to the frequency selection screen to ensure you have correctly connected the antennas to the RX/TX/Wi-Fi and GPS ports.

Next, connect the power supplies to each Titan and the systems will power on. It takes approximately 2 minutes to boot up and ensure all services are operating correctly.

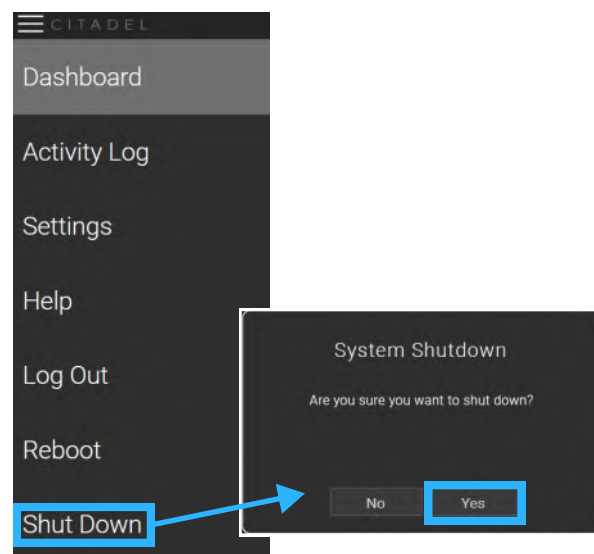
Next, connect system to the tablet using the Ethernet cable. Power on the tablet and click the **Dashboard** icon located on the tablet's screen. The username and password information in your documentation will allow you to access the UI. Once loaded, the system is mission capable and ready for operation.



How do I shut down correctly?

Method 1) To correctly shut down the system, choose **Shut Down** in the user interface left-hand menu. Click **Yes** on the confirmation popup.

Method 2) Momentarily depress the Power Switch; the system will take approx. 10-20 seconds to turn off. Please ensure that these methods are followed, as it prevents file corruption and potential system damage.



What drone signals can Titan detect?

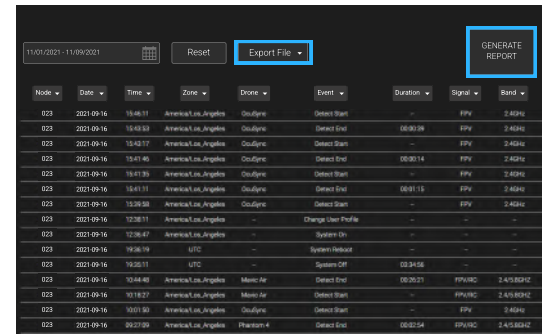
The standard system can detect control protocols in the 2.4GHz and 5.8GHz portions of the spectrum, regardless of encryption or frequency-hopping, including Wi-Fi, Radio Control (RC) and First-Person View (FPV). Also available is an extended frequency antenna kit which supports 433 MHz, 868 MHz, 915 MHz, and 1.2 GHz control frequencies.

What information does the system log?

Node:	Unit ID of the detecting/engaging system
Date:	Date a specific activity is logged
Time:	Time a specific activity is logged
Zone:	Time zone the unit is in (based on GPS location)
Drone:	Protocol the drone is operating on
Engage Profile:	Identifies operator-selected mitigation (Minimal, Limited, High)
Whitelist:	Were detected drone/s whitelisted
Event:	Specific system events (System on/off, Detection or Engage start/end)
Signal:	Type of signal from drone (FPV, RC, Wi-Fi)
Band:	Frequency band drone is operating on
Frequency:	Specific frequency drone is operating on
Duration:	Calculated time for an event (e.g. detect / engage duration for a drone)
Threat Level:	Relative threat level based on signal strength and elapsed time
RSSI:	Recorded RSSI (received signal strength indicator) from the system
ID:	MAC address (Wi-Fi drones)
Operator:	Type of engage used; FPV/RC auto or manual selection
Noise:	RF noise detected in the unit's operating area
User Profile:	System account logged in as viewer, operator, or admin
Lat & Long/MGRS:	Latitude, longitude & MGRS coordinates reported from GPS

How do I export event data?

Navigate to the Activity Log menu option; from within that screen, selecting KML or CSV will download a file of all stored events to the tablet's desktop for analysis or removal, and the Generate Report button creates a formatted PDF report. Files are copied to the tablet's downloads folder - a USB thumb drive can be used to retrieve the files.



Node	Date	Time	Zone	Drone	Event	Duration	Signal	Band
023	2021-09-16	15:48:11	American.Los Angeles	Outgoing	Detected Start	--	PPV	2.4GHz
023	2021-09-16	15:48:53	American.Los Angeles	Outgoing	Detected End	00:00:39	PPV	2.4GHz
023	2021-09-16	15:42:17	American.Los Angeles	Outgoing	Detected Start	--	PPV	2.4GHz
023	2021-09-16	15:41:46	American.Los Angeles	Outgoing	Detected End	00:00:14	PPV	2.4GHz
023	2021-09-16	15:41:35	American.Los Angeles	Outgoing	Detected Start	--	PPV	2.4GHz
023	2021-09-16	15:41:11	American.Los Angeles	Outgoing	Detected End	00:00:15	PPV	2.4GHz
023	2021-09-16	15:38:38	American.Los Angeles	Outgoing	Detected Start	--	PPV	2.4GHz
023	2021-09-16	12:38:11	American.Los Angeles	--	Change User Profile	--	--	--
023	2021-09-16	12:38:07	American.Los Angeles	--	System On	--	--	--
023	2021-09-16	15:38:19	UTC	--	System Reboot	--	--	--
023	2021-09-16	15:38:11	UTC	--	System Off	00:34:58	--	--
023	2021-09-16	15:44:40	American.Los Angeles	Manual	Detected End	00:00:21	PPV/HD	2.4GHz/2.4GHz
023	2021-09-16	15:18:27	American.Los Angeles	Manual	Detected Start	--	PPV/HD	2.4GHz/2.4GHz
023	2021-09-16	15:01:30	American.Los Angeles	Outgoing	Detected Start	--	PPV	2.4GHz
023	2021-09-16	15:01:30	American.Los Angeles	Random	Detected End	00:00:54	PPV/HD	2.4GHz/2.4GHz

What regular maintenance steps are recommended to extend system life?

Fan filters on the bottom of the unit should be checked and cleaned regularly and the interval will be based on the system's operating environment. In a sandy, dusty location the interval should be weekly for removal and cleaning to maintain optimal cooling performance. In less challenging environments the filters should be manually inspected for debris accumulation every month.



The system contains sensitive, calibrated electronics, and while it is engineered to endure far greater than average wear and tear, care should be taken not to drop or subject the unit to any additional impact or shaking than is necessary. Please use the padded case to move the unit between locations.

In the event the unit is deployed in a maritime environment, for preventative maintenance it is recommended that the unit be coated with corrosion inhibitor spray to prevent saltwater and salty air from corroding the metal.

This would be a similar preventative maintenance procedure to other equipment aboard a Navy vessel.

Do I need to use the provided tablet to view system activity?

While Titan comes with a dedicated tablet, an external computer system can be used to display the User Interface. Please note that if you wish to use an external system the tablet is still needed to initially configure / view the main unit's IP address. Please see the detailed User Manual for full DHCP/IP Configuration Instructions.

How should I interpret the threat level (Red, Yellow) reported by the system?

The system uses RSSI (Received Signal Strength Indicator) values to approximate the distance between an operating drone and the Titan units. A **Red threat** level indicates that a drone is within 2-3k meters of the unit, and a **Yellow threat** level indicates that a drone is detected at or near 3k meters. Please note that RSSI values can vary significantly based on environmental conditions, and the term Threat Level is used as an approximate, relative measure. Red Threat Level typically indicates that the signal strength of the drone is strong and/or increasing.



Factors that can influence RSSI values include transmitted power, receive sensitivity, physical obstacles, distance between transmitter & receiver, interference from access points in radio environment, radio interferences, and orientation of the antenna.

Is my system's data secure?

The system has a number of hardware, software and network-based security safeguards to prevent unauthorized use or compromise of data to either Titan or connected systems. The system is DIACAP accredited and listed in eMASS.

What do each of the status icons on the dashboard represent?



During testing, operators requested shortcuts and access to information that can improve situational awareness. Each status icon represents a setting within the situation that provides the operator important information that can improve their use of the system. A detailed listing of the status and capabilities available through the Status Menu follow;

- RF Noise Environment: Relative level of RF noise in area; excessive noise can impact system performance
- Operating Temp: If internal temp rises above 85° C unit will present a warning & shut down
- Alert Sound: Enable/disable audible detection alert
- System Status Check: If red, click to determine which subsystem has an error
- Tablet Battery: Tablet battery state of charge
- Detected Wi-Fi Networks: Titan can manually engage nearby Wi-Fi networks / Wi-Fi drone control devices
- Engage Profile: Toggle between minimal, limited, and high RF spectral impact
- Fan Mode: Cooling fan speed modes, in increasing order; Listening / Mission / Performance
- Whitelist: Shortcut enables drone type exclusions – Icon is Green when enabled
- Safe Mode: Protects electronics near other jammers (**Red is enabled**), detection/mitigation capability disabled
- User Profile: Selectable Viewer, Operator or Admin operating profiles
- Reload UI: Restart/reload the user interface

Available User Profiles:

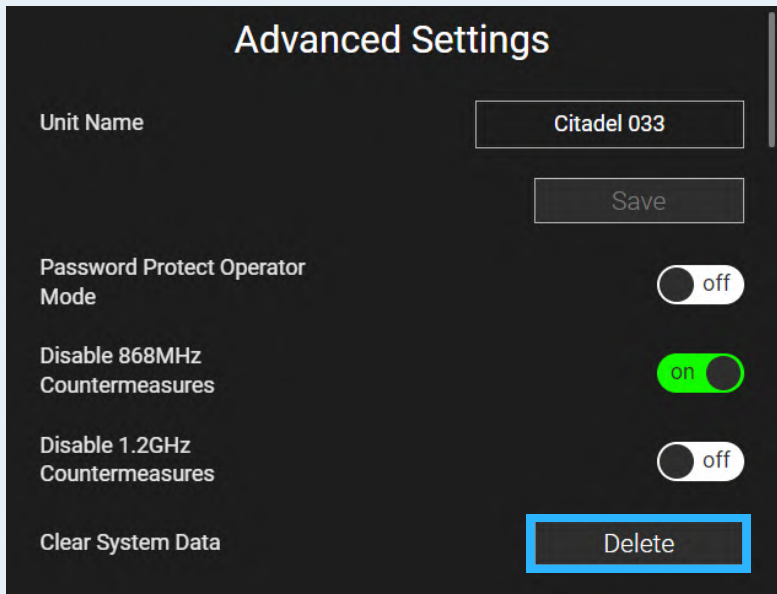
- Viewer:** Can view all areas, change whitelist settings & run reports. Cannot enable/disable engage commands.
- Operator:** Can view and operate all commands within the application except Advanced Settings.
- Admin:** Can view and operate all commands within the application – password protected access

How do I upgrade the system's software when changes are available?

Please refer to the detailed user manual **Section P: Software Updates** for the detailed procedure. Please contact us at titanhelp@bluehalo.com if you need further details or are not aware of your unit(s) upgrade schedule.

How do I delete all data from the system?

To protect customer-critical information, there is an Advanced Settings option to Clear System Data that allows users to erase all data from the system. This will wipe all logged data and is irreversible.



To access the Advanced Settings menu, use the top-left “hamburger” menu drop down, and go to **Settings / Advanced Settings** submenu.

How do I order replacement parts if there is a failure?

What is the best way to contact a Titan Specialist for Technical Support?

Contact Citadel with any questions, issues or replacement item needs:

EMAIL: titanhelp@bluehalo.com



Scanning the QR code on the top of the Titan tablet or bottom of the system itself will bring up the Help page with additional specific contact information.



What are the different Engage Profiles that Titan offers?

Configurable engage profiles were developed in partnership with operators to address their needs in different situations and environments. The key tradeoffs for each layer are *spectral impact* and *protection robustness*.

Engage Profiles:

Minimal:

Only uses mitigation techniques that do not impact Wi-Fi and BLE (Bluetooth Low Energy). For drones that cannot be defeated using these techniques, the user will be prompted to escalate to Limited or High.

Limited:

Uses mitigation techniques that do not impact Wi-Fi and BLE. For drones that cannot be defeated using these techniques, a broadband jam will be applied which may impact other comms signals. This engage profile offers more protection to the operator.

High:

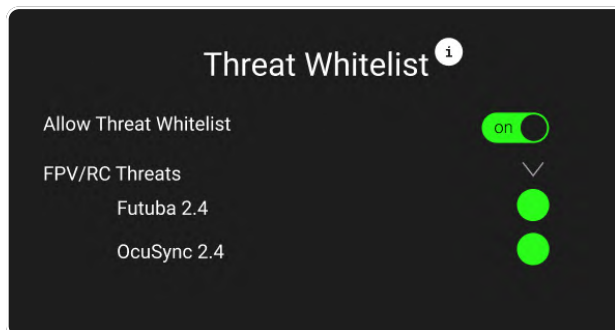
Offers operators the most protection and prioritizes broadband mitigation techniques over more surgical countermeasures. Local communications devices will be impacted.

Note: These settings can be configured in the Operator Controls section of the Settings Menu, please see the full User Guide

Can I select a specific drone that I want to engage if multiple drones are detected?

The system is designed for autonomous or manual use as an operator may not always be available to watch the system. However, when the **Auto Engage** button is turned off, an operator has the ability to selectively Engage any drone that is detected on the dashboard. This provides the operator the ability to selectively mitigate a drone that may be deemed a threat without fully targeting another drone that may be friendly or less of a threat.

Additionally, the User Interface Setting Menu provides the ability to selectively “Whitelist” specific drone models & protocols. Please refer to **section J of the User Manual**.



A Titan will not power on. What should I do?

Verify that the system is properly connected to both the unit *and* a valid power source.

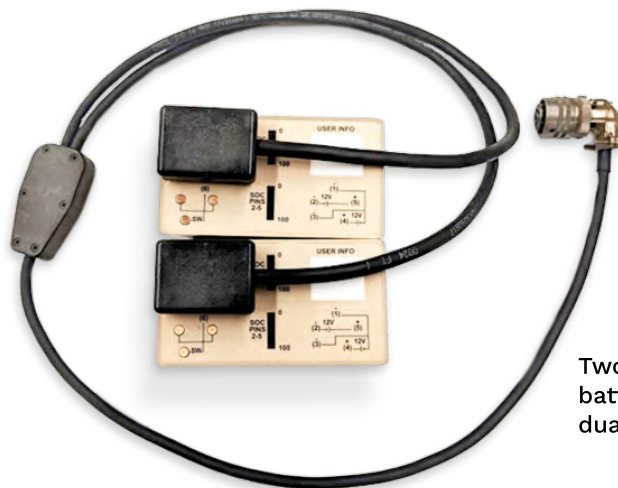
Remove and re-insert the power connector into the bottom panel jack, and verify that that the AC outlet the supply is connected to is live.



Via the same bottom panel jack, connect two 10AH 5590 batteries per system using the provided dual battery cables. (Connect the batteries to the cable before plugging into the Titan.)

If the system powers on, the power supply may be faulty. Please contact customer support for a replacement.

If the system still does not power on, please contact Customer Support at titanhelp@bluehalo.com for help.



Two 5590 Rechargeable batteries and installed Titan dual-head battery cable

How can I improve the performance of my system?

CHECK SETUP

It is important to make sure that all of your antennas are tightly fastened to the unit (see *diagram on page 2* or refer to *User Manual / Quick Start Cards*) and that they are connected to the **correct antenna ports**. An intermittent or loose antenna connection is a common cause of performance issues, as is confusing antenna ports.



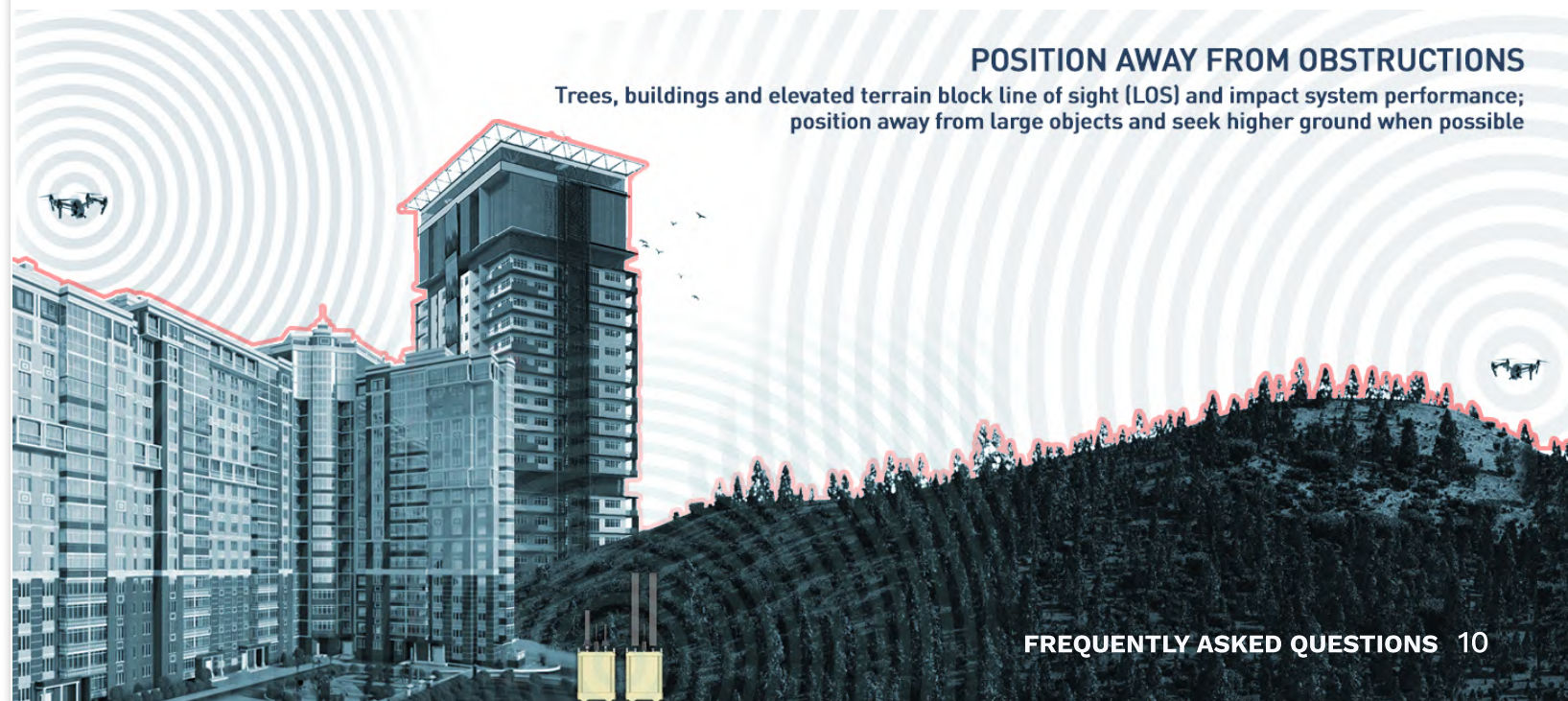
VERIFY PROPER OPERATION

Once you have verified that the antennas are tightly fastened and on the correct ports, connect system power and turn on the tablet. Verify that the system status for the unit shows all green indicator icons. If there is a red X icon the system will have issues detecting or defeating drones – refresh the browser, reboot the system or perform a full restart if you see any errors. Often the system will self-correct any errors after rebooting.

OPTIMIZE SYSTEM PLACEMENT

POSITION AWAY FROM OBSTRUCTIONS

Trees, buildings and elevated terrain block line of sight (LOS) and impact system performance; position away from large objects and seek higher ground when possible

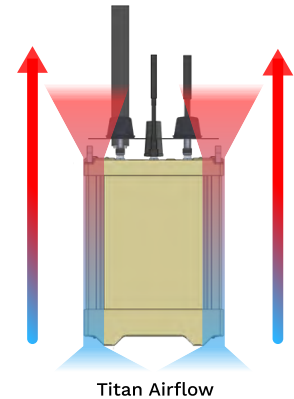


The System is reporting temperature above 80° C.

Make sure nothing is blocking the system fans on the bottom of the unit. For optimum cooling, ensure the unit is the upright position with nothing blocking the sides, bottom or top ventilation holes. If the system remains hot and all airways are clear, perform a shutdown to allow the unit to cool down.

The system fans are running very loudly.

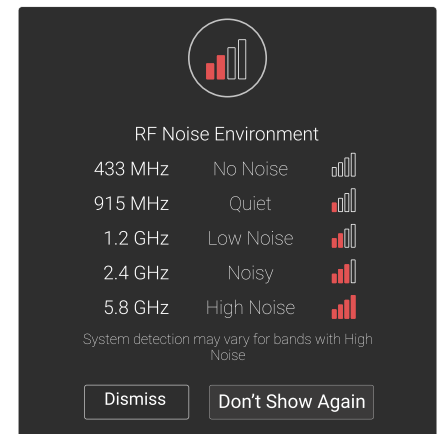
This is a function of internal temperature. Titan is sealed, and the fans on the bottom of the unit suck cool air through the bottom of each side panel to cool the heat exchangers. These fans will gradually spool up to increase air volume as internal temperature rises. Follow the steps above for high temp troubleshooting, and contact support if the condition persists.



A Noise warning keeps appearing.

If the unit is placed near a device transmitting RF energy (signal-dense urban areas, Wi-Fi routers etc.) this will message appear to indicate that the Titan's receivers need to filter more background RF noise than normal to discriminate control signals..

If other jamming equipment such as EGON or MODI is operating nearby this will also cause the warning as well. The detection function will still work, but not optimally.



The System is showing TX Failure.



If a TX (transmit) failure message displays during the startup process, the system will self-diagnose and attempt to self-correct. Please wait a few minutes for the correction process to complete; the system may reboot/restart multiple times.

Refresh the browser, reboot the system, or perform a full restart; if the warning persists it's possible one of the RF amplifier modules has failed; please contact support for service.

Titan can't connect to the network or tablet.

Ensure that the unit is powered on; the fans should be audible and power button illuminated green. Check that the Ethernet cable is fully seated in both the unit and tablet Ethernet jacks. Also check that the tablet and the unit serial numbers match; each Titan is paired to a specific tablet, and they are not interchangeable without manually reconfiguring network settings.

If you're connecting to an external network to display system information, please see **Section N of the User Manual** for full DHCP/IP Configuration Instructions.

Titan does not shut down when I tap the power button.

Earlier versions of the system don't have this one-touch power off capability; the unit should be shut down from the tablet UI's left side menu – choose **Shut Down** and **Confirm**.

Alternately, hold down the power button for several seconds to initiate a controlled shut down. Please **do not** remove power from the system until the fans have stopped and the green power light has gone out. Suddenly killing power can interrupt hard disk read/write operations and lead to data corruption.

How much space do I need between two Titans?

Titans can be operated effectively operated in close proximity as long as a minimum distance of 6 inches is maintained.



How do I adjust tablet screen brightness?

To avoid asking operators to click through multiple Windows menus, each Citadel System's tablet has two programmed hotkeys that allow easy screen brightness adjustments.

The P1/P2 buttons on the front panel will increment brightness up and down respectively.



Can I view the UI on another system?

Titan can be connected to an external system via the Ethernet port if it has a current build of the **Chrome** browser. It can obtain an IP address automatically (**DHCP**) or be assigned manually (**Static**) via Settings/Advanced Settings in the main menu depending on network requirements.

DHCP: Connect the tablet and unit individually to the local network with Ethernet cables, then open the UI on the tablet. In the top-left menu select **Settings**, then **Advanced Settings** and make sure **DHCP** is selected. Note the IP address that appears - that's the address to enter in the browser to access Titan on another computer. Type it in and hit Enter; the system's UI should now load.
(NOTE: local network must have a DHCP server for this option)

Static: To manually assign an IP address to match your local network configuration, connect the tablet and unit to the same network. Open up the UI on the tablet, and in the top-left menu select **Settings**, then **Advanced Settings** and select **Static IP**. Enter the desired IP address (beginning with HTTPS) along with the subnet mask and gateway.

Typing the static IP into the web browser should now load the unit's UI.

Using a Non-paired BlueHalo tablet: Each Titan system is paired to a dedicated tablet. If you have multiple Titan systems and need to use a non-paired tablet, you can manually enter the Titan system's default IP address into the tablet's browser. The default IP address will be HTTPS://192.168.2.1XX, where XX is the last 2 digits of the Titan unit number.