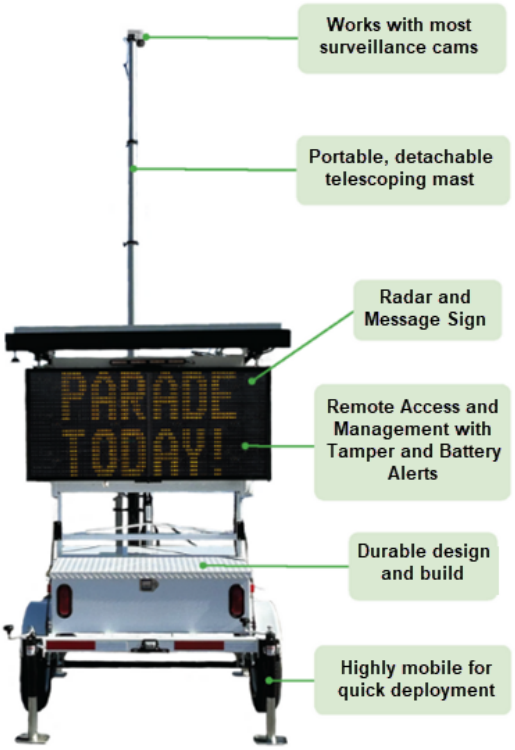
Mobile Surveillance-Ready Trailer Quick Start

Thank you for purchasing a ***Mobile Surveillance-Ready Trailer***. This guide will show you how to set up your new trailer. Please follow all of the steps in order. The trailer is typically outfitted with an ATS SpeedAlert 24 Radar Message Sign or InstAlert 24 Variable Message Sign and a hitch-mounted, portable telescoping mast. Onboard equipment is powered by maintenance-free AGM lead acid batteries. For TraffiCloud documentation, TraffiCloud Suite Software subscribers should refer to the *TraffiCloud User Guide*. On the TraffiCloud **Help** menu, click the **Getting Started Guides** link. Local access only customers with data-enabled signs should refer to the configuration sections of the *Quick Start Guides* for your signs, for details about TraffiCloud Sign Manager for Windows and the TraffiCloud Mobile app.



Initial Mobile Surveillance-Ready Trailer setup

IMPORTANT: Review the *Safe Trailering Guidelines* on the next page and then perform the following setup steps:

Check over the trailer

Upon receiving your new Mobile Surveillance-Ready Trailer, check to ensure that you have all of the items ordered. If you notice any damaged or missing items, contact ATS Customer Support immediately. Here's a summary of what's typically included with your trailer. Check your packing slip for details.

What's included

The Mobile Surveillance-Ready Trailer includes the following:

- The trailer, with four pairs of maintenance-free AGM lead acid batteries, and 12-VDC AC smart charger,
- The hitch-mounted portable telescoping mast, Equipment Mounting Assembly, storage bag, and manufacturer's comprehensive operation and maintenance manual. Please refer to it for more detailed information.
- A solar controller with low-voltage disconnect to prevent deep discharging, running on a lower voltage than intended, or overcharging,
- An additional locking battery box for expanded battery capacity, including third-party system equipment area with access panel and optional recessed camera compartment,
- A SpeedAlert 18 or 24 Radar Message Sign, InstAlert 18 or 24 Variable Message Sign, or Shield 15 Radar Sign (signs sold separately).

What you'll need

- A vehicle equipped with a trailer hitch for towing a load of up to 1,500 lbs. (680 kg), including a standard hitch-mount with bracket for the safety chain, 2-inch (5-cm) ball, and flat, 4-way wiring socket. Other connection options are also available.
- A heavy duty three-pronged outdoor-rated extension cord.
- A partner for trailer hookup.
- Legal licensing or registration as required for your *jurisdiction*.

For more details, consult the latest ATS Trailers page on our website.

ATS | Chantilly, VA | United States | Tel: 1-866-366-6602 | Email: support@alltrafficsolutions.com | Web: www.alltrafficsolutions.com

Safe Trailering Guidelines

IMPORTANT: Carefully read and follow all instructions marked with warnings and cautions and read and follow all of the instructions in the quick start guides for your sign and trailer *BEFORE* you take your trailer on the road.

Warning symbols

WARNING: Warning symbols draw your attention to serious safety hazards, which can lead to injury, death, or damage to equipment.

Caution symbols

CAUTION: Cautions advise users of specific actions that could result in damage to equipment or loss of data.

Swaying

WARNING: Swaying is a moderate back and forth movement of a trailer behind a tow vehicle and can lead to dangerous whipping unless you slow down.

Whipping

WARNING: Whipping is the violent back and forth movement of a trailer behind a tow vehicle. Whipping can be caused by excessive speed for the driving conditions, turbulence, over-steering, passing vehicles, uneven roadways, or other issues. There is very little time to recover should whipping occur.

Combination disturbance

WARNING: A combination disturbance is swaying or whipping of a trailer AND the tow vehicle (the combination), caused by issues such as excessive speed for the driving conditions or load, turbulence, over-steering, passing vehicles, uneven roadways, or other issues.

Flat tire

WARNING: In the event of a flat tire, DO NOT BRAKE. Take your foot off the gas pedal, slow down to below 25 mph (40 kph), and drive to a safe location where you can stop and change the tire. If necessary, you may need to drive on the flat tire until you can stop safely.

Wheel off the roadway

WARNING: If a wheel goes off the roadway, DO NOT BRAKE. Take your foot off the gas pedal, turn on your hazard lights, and slow down to below 25 mph (40 kph). Then slowly steer back onto the roadway when it's safe to do so.

Towing checklist

Go over the following checklist before you go on the road:

Checklist item	What to do
Your tow vehicle	Ensure the following: » the tow vehicle is equipped with a suitable trailer hitch and properly maintained. Consult your vehicle manufacturer, an authorized repair facility, or hitch installation company. » The vehicle has adequate towing capacity for the trailer, with a load capacity of up to 1,000 lbs. (454 kg) for ATS 3 and ATS 5 trailers, or 1,500 lbs (680 kg) for trailers with two battery boxes: ATS 5 FLEX Mobile Power Trailers, ALPR Camera-Ready Trailers, and Mobile Surveillance-Ready Trailers.
	» Consult the vehicle owner's manual for vehicle capacity and any other instructions.

Checklist item	What to do
	» Any modifications to the vehicle are approved for towing by an authorized dealer or inspector.
Trailer hitch	Ensure that the trailer hitch and ball are securely installed and suited to the tow vehicle. Ensure that the coupler and ball are fastened together securely.
Safety chains	Ensure that the safety chains are » crossed over under the tongue and hitch, » securely hooked to the tow vehicle, and » not dragging on the pavement.
	WARNING: **Pay close attention to safety chain hookup and do not tow the trailer without the safety chains attached. If the trailer tongue becomes detached from the hitch ball while you are driving, properly attached safety chains can prevent a serious accident by supporting the tongue and keeping the trailer attached to your vehicle temporarily until you can come to an emergency stop.**
Electrical harnesses	Ensure that the electrical harnesses are properly connected and the signal, tail, and brake lights are working.
Tires	Ensure that all tires on the tow vehicle and trailer are properly inflated. Consult the information on the tire sidewalls and your vehicle's door decal for inflation pressures.
Traveling with your sign	For the ATS 5 family of trailers, fold the upper frame and solar panel into the travel position and secured with locking pins and tie downs. For ATS 3 Trailers, turn the solar panel and sign sideways, into the travel position, parallel to the road. See *Packing up for redeployment*, on page 10.
Loading	Never load cargo on the bed of the trailer.

Safe driving practices

Use the following checklist for safe driving practices with a trailer:

Checklist item	Best practice
Speed	Slow down to avoid accidents and drive defensively. Drive slower than you would without a trailer. The maximum recommended speed with a trailer is 55 mph (90 kph). Anticipate slowdowns in traffic and stops and apply your brakes well in advance. Slow down for curves, road hazards, roadwork, and difficult weather conditions. Don't speed with the trailer. Driving at high speeds can result in sway and whipping if hazards are present. See *Whipping*, on the previous page. Your towing vehicle and trailer combination has much higher mass and length than your vehicle by itself. Allow extra distance between your vehicle and vehicles ahead and allow extra distance for braking.
Assisted driving	Avoid using cruise control, overdrive, and other assisted driving technologies while towing a trailer.
What to avoid	Never drink or take drugs affecting alertness or sobriety and drive. Never text and drive or allow mobile devices to become distractions while you are driving. Pull over or wait for stops as needed to use them.

Checklist item	Best practice
For longer trips	Inspect the vehicle and trailer connections at each stop.
Difficult weather conditions	In difficult weather, adjust your driving for the conditions, allowing additional time and space between vehicles.
Backing up	If you need to back the trailer into position, practice beforehand, and have a partner assist you if necessary. Backing up with a trailer is a skill that can take time to learn.

Step 1 Selecting a physical location

The site you select for the Surveillance Trailer will vary with your requirements, however you should generally adhere to the following guidelines:

Guideline	What to do
Choose the optimal surveillance location	Park the Surveillance Trailer at a site that gives you the best angle towards the site you'll be monitoring, avoiding glare from the sun or other light sources. Check the documentation included with your surveillance device for site guidelines.
Choose a flat location	Choose a location on a flat straight road section, directly adjacent to the roadway, where the line of sight from the Surveillance Trailer to the roadway will be uninterrupted by other traffic lanes, parked vehicles, or sidewalks. Consider how the location may develop with time, such as growth of trees or construction of other new structures that may block the Surveillance Trailer or solar panel.
Ensure appropriate sunlight	Choose a location where the solar panel will remain unobstructed in terms of sunlight throughout the day.
Choose the distance from the roadway	Ideally, place the Surveillance Trailer within 12 ft. (3.7 m) of the roadway.
Use a stable structure	Deploy the Surveillance Trailer on firm ground. Avoid locations that are likely to be affected by wind or rain.

Step 2 Inspecting and charging the trailer's batteries

CAUTION: **Before deployment, use the smart AC charger to fully charge the batteries. Charging may take 24 to 48 hours with the extra battery option. The smart charger indicates the battery charge status during charging.**

The batteries are one of the most important parts of the trailer. They consist of pairs of maintenance-free AGM 6V deep cycle batteries wired together to deliver 12V. Each battery pair adds more power and capacity to the trailer. The batteries are wired in series and parallel, which doubles both capacity and voltage. A slow-blow fuse is installed between the batteries and the load to protect your devices.

Solar assist panels will extend your sign's run time. Trailers outfitted with light to moderate system loads should achieve adequate run times.

CAUTION: Using batteries, cables, chargers or other components that do not meet All Traffic Solutions specifications may render the product warranty null and void.

To check battery charge levels:

Check the power level displayed using any of the following:

- The TraffiCloud Equipment page or Dashboard,
- The TraffiCloud Mobile app for Android,
- On message signs, during the sign start up display sequence.
- Once the smart charger is hooked up, check the charge indicator.

To charge the batteries:

A. Make sure the trailer is **POWERED OFF** and located in a well-ventilated area. The power switch is located inside the battery compartment, as shown above. See also *Step 6 Powering the surveillance device and optional sign* on page 10.

B. Plug a heavy duty three-pronged outdoor-rated extension cord into the external AC plug on the battery enclosure and plug the other end into a power outlet.

   Charging can take between 24 to 48 hours with the extra battery option.

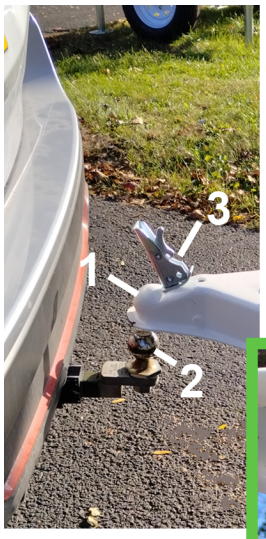
Step 3 Hooking up the trailer

Use the instructions in this step for help with hooking up the trailer.

Moving the vehicle and trailer into position

Use the steps in this section for details about moving the towing vehicle into position and preparing for hookup.

To move the trailer and vehicle into position for hookup:



A. Move the trailer into position on a flat surface so that you can back your vehicle up to it.

B. Lower all four jacks to securely support the trailer. Pull the locking pins and rotate the jacks to the deployed (vertical) position.

C. Remove the locking pin from the tongue receiver tube (see photo on page 10).

D. Remove the trailer tongue from storage inside the battery box and slide it into the receiver tube.

E. Secure the trailer tongue in the receiver tube using the locking pin.

F. Crank the front jack handles to lift the trailer until the coupler (1) is above the height of the hitch ball (2).

G. Back the vehicle up to the trailer so that the hitch ball (2) is just in front of the coupler (1). If necessary, have a partner guide you or use a backup camera if it provides a clear view. When your vehicle is in position, shift into park, apply the parking brake, and turn off the engine.

Lowering the trailer onto the hitch

Use this section for detailed steps about lowering the trailer onto the hitch.

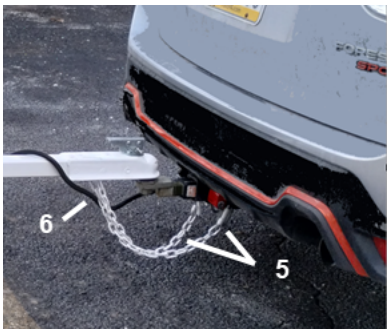
WARNING: Pay close attention to safety chain hookup and do not tow the trailer without the safety chains attached.

If the trailer tongue becomes detached from the hitch ball while you are driving, the safety chains can prevent a serious accident by supporting the tongue and keeping the trailer attached to your vehicle temporarily until you can come to an emergency stop.

To lower the trailer onto the hitch:

A. Crank the front jacks down to lower the coupler (1, see previous page) onto the hitch ball.

B. Close the tongue latch (3) to secure the ball clamp (4) around the ball.



CAUTION: Ensure that the ball clamp is securely wrapped around the ball. If necessary, release the tongue latch and reposition the tongue on the hitch ball, or adjust the ball clamp with a wrench.

C. Optionally, lock the tongue latch with a padlock (not included).

D. Crank all four jacks back up, then pull the locking pins, rotate them up to the travel position (horizontal), and secure them in place.

E. Attach the trailer safety chains (5) to the hitch frame, crossing them under the tongue and looping the S-hooks back onto the chain. Leave enough slack in the chains to allow for cornering, but make sure they don't drag on the roadway.

F. Connect the wiring harnesses (6).

G. Test to ensure that the trailer signal lights, taillights, and brake lights are functioning properly. Work with a partner if necessary.

H. Inspect the hitch connections to ensure that the trailer hookup is complete, and then proceed to the next step. Once all preparations are completed, you're ready to take to the road.

Step 4 Setting up at the roadside

Use the instructions in this step for roadside trailer setup and aiming of the sign.

To set up the trailer at the roadside:

WARNING: RISK OF ACCIDENT, INJURY, OR DEATH. Do not obstruct the roadway: Always choose a location for the trailer that is far enough away from moving vehicles so as not to interfere with passing traffic or put personnel at risk. When possible, the trailer should be placed off the shoulder, behind barriers or traffic cones. Before you start towing, remember to read *Safe Trailering Guidelines*, on page 2.

A. **Tow the trailer to your chosen location:** Ensure that the surface is stable. To enhance accuracy and visibility, position the trailer so that the sign will be visible to motorists, yet the trailer is off the shoulder.

B. **If you need to back up**: Hold one hand on the bottom of the steering wheel and move your hand left to turn the trailer to the left. To turn the trailer right, move your hand to the right. If the trailer turns the wrong way, pull ahead until the vehicle and trailer are in a straight line and start again.

C. **Aim the sign:** Point the sign as directly as possible towards the traffic lanes you want to monitor, making sure there are no obstructions.

D. **Deploy all four jacks**: Park the trailer, then stabilize it with the jacks. Rotate all four jacks down from the travel position and crank them up until the trailer wheels lift off the ground.

To unhitch the trailer:

A. Disconnect the wiring harness.
B. Unhook the safety chains, and hook them back on the trailer.
C. Open the tongue latch.
D. Using the front jack or by hand, lift the trailer off the hitch ball.
E. Move the tow vehicle away from the trailer.

Positioning the solar panel or panels

Use these steps to position the solar panel (or panels) **before you raise the trailer's upper frame**. Remember to avoid installations in the shade.

To unfold the solar panel:

A. Pull out the locking pins on either side of the solar panel(s).
B. Slide out the second panel.
C. Rotate the panel(s) to the ready-to-raise position as shown at right, and replace the locking pins.

Raising the trailer's upper frame

Follow the steps below to raise the trailer's upper frame. On trailers with the 380-watt panels, the lift assist shocks under the panels will help to raise them.

WARNING: RISK OF CAPSIZING. As mentioned above, before you raise the trailer's upper frame, make sure that all four jacks are down at least far enough to prevent capsizing.

A. Remove the lifting handle from its storage position inside the battery box.
B. Slide the lifting handle into the lifting mount, and secure the handle into the mount using the supplied locking pin.
C. Open the rubber tie-down (see page 10), and pull the two locking pins holding the upper frame in the down position.
D. Pull down on the lifting handle, raising the trailer's upper frame until the solar panels lift fully into position, parallel to the ground, as shown on page 1. This is the recommended position for solar charging in any location.
E. Replace the locking pins to secure the frame in place.

Step 5 Installing the mast

Use the steps in the following sections for help with installing and setting up the mast on the trailer.

Attaching the hitch mount

First, attach the hitch mount to the trailer:

A. Insert the black mast hitch mount (1) into the trailer's tongue receiver tube (2), sliding the mast stabilization bracket (3) onto the trailer's upright post (4), as shown.

B. Secure the hitch mount into the tongue receiver tube using the locking pin (5).

C. Push the two upper locking pins (6) attached to the trailer's upright post through the holes in the stabilization bracket and behind the upright post.

D. Tighten the mast stabilization bracket to the trailer's upright post using the thumbscrews (7) on the back of the bracket.

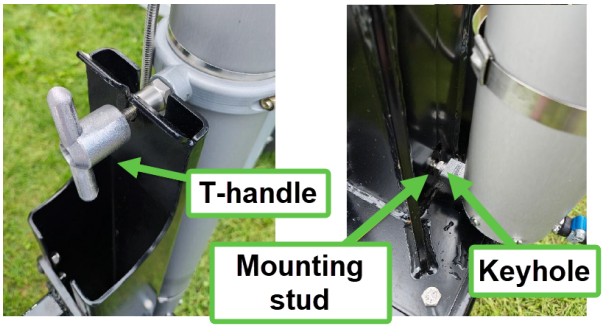
Mounting the mast on the hitch mount

Use these steps and photos for help with mounting the mast on the hitch mount.

A. Loosen the T-handle nut as far as it will go.

B. Slide the T-handle stud into the upper slot of the mount and the lower mounting stud into the keyhole.

C. Once the mast is resting on the mount, secure it by tightening the T-handle to the mast.



Connecting the PoE cable

The mast connects to power through a PoE (Power over Ethernet) cable from the PoE injector in the battery box. The connection is an in-line waterproof Ethernet coupler.

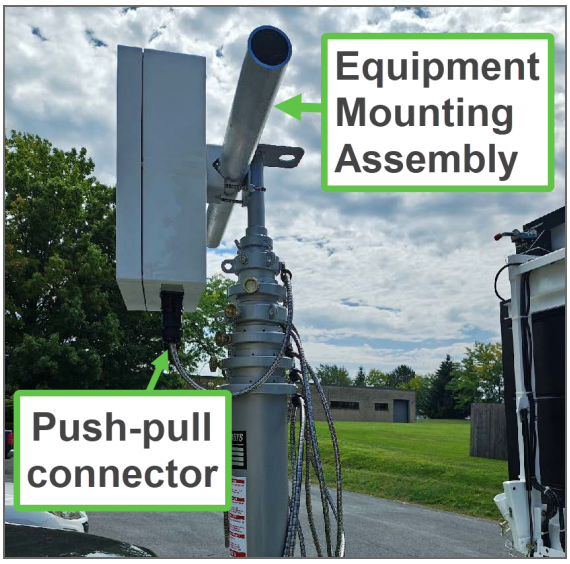
To connect the cable:

- Plug the Ethernet cable into the trailer box (shown above) by sliding the front ring forward.

  Additional equipment may be installed inside the battery box if required.

Installing the Equipment Mounting Assembly

For top-of-mast equipment powered by PoE, ATS provides an Equipment Mounting Assembly with an IP65 enclosure and post. You can position the Equipment Mounting Assembly horizontally or vertically based on your needs. The assembly protects surveillance devices by supporting easy removal for transport.



A. Insert the Equipment Mounting Assembly downward into the mast-top and tighten it with the T-headed set screw.

B. Plug in the PoE cord to the equipment box using the push-pull connector. Make sure that the cord is not looped through any of the section cord loops before connecting.

C. Slide the front ring forward until the connector is engaged and locks it into position.

To remove the connector:

- Pull to slide the ring down to unlock the connector and remove it.

Raising the mast

The mast is raised by a pneumatic bladder inside, which is inflated by the pneumatic pump. Each telescoping section has a locking collar clamp that must be loosened to extend or tightened to lock the section in place.

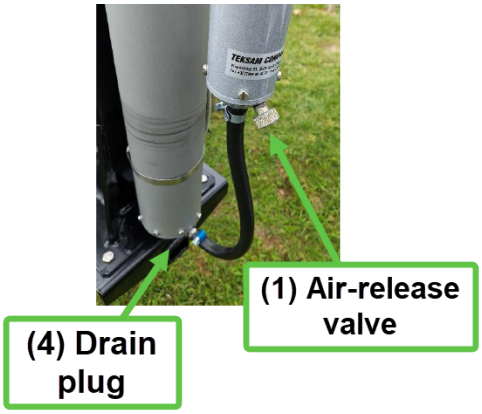
To raise the mast:

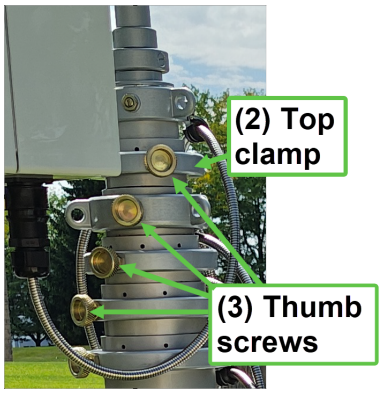
A. Close the air-release valve (1) on the bottom of the pneumatic pump.

B. Loosen the mast's top collar clamp (2) and use the thumb screws (3) to make sure the rest of the clamps are tight.

C. Use the pump to fully extend the top section of the mast.

D. Tighten the top clamp, loosen the next clamp and pump to extend the next mast section, making sure not to tangle the PoE cord.





E. Tighten the top clamp, loosen and pump up the next section, and repeat until all mast sections are fully extended.

CAUTION: Pumping up the mast on a humid day may result in condensation forming inside the bladder and can cause a harmless water spray from the air-release valve (1) when lowering the mast. Drain the condensation by removing the water drain plug (4) on the bottom of the mast tube. Replace the drain plug to seal the mast again and ensure proper operation.

Step 6 Powering the surveillance device and optional sign

Here's how to power the surveillance device and optional sign on or off.

NOTE: Make sure you charge the trailer batteries before initial deployment. See *Step 2 Inspecting and charging the trailer's batteries* on page 4. For details about sign setup, refer to the *Quick Start Guide* included with your sign and available on the Customer Support page or visit the Training Hub.

To power the surveillance device and optional sign:

A. Unlock and open the main battery box compartment to access the power switches.

B. To power on or off the surveillance device, flip the toggle switch on the right to the ON or OFF position.

C. If you have a sign, flip the sign power switch on the left inside the battery box to the ON or OFF position, as required.

Step 7 Securing the trailer

Use the steps in this section for help with securing the trailer. The trailer wheels come with pre-installed locking lug nuts (wheel locks). The key should be in the battery box.

To secure the trailer:

A. Make sure the trailer wheels are off the ground and the four jacks in position.

B. Pull the locking pin from the lifting handle and remove the handle from the trailer.

C. Secure the lift handle inside the battery box.

D. Remove the locking pin securing the trailer tongue inside the tongue receiver tube.

E. Remove the trailer tongue from the tongue receiver and secure the locking pin back in place.

F. Secure the trailer tongue inside the battery box.

G. Close and lock the battery boxes to prevent tampering and the trailer will be ready for use.

Packing up for redeployment

Use the steps in this section for help with packing up the trailer and mast to move to another location.

Lowering the mast

Use these steps for help with lowering the mast (please see photos above in Raising the mast).

CAUTION: **Cover the top of the mast if stored outside. With the equipment assembly removed, water can enter the opening at the top of the mast. If water does accumulate inside the mast, invert it to drain the water out.**

A. Before lowering the mast, turn OFF power to the mast and surveillance device. See *Step 6 Powering the surveillance device and optional sign*, above.

B. Make sure that the internal bladder is inflated by pumping some air to support the mast on its way down.

C. Once the bladder is full, loosen the bottom locking collar clamp and open the air-release valve at the bottom of the pump.

The largest telescoping section should begin to slowly lower as it releases air from the air-release valve.

D. Once the bottom section is fully down, tighten the collar clamp, loosen the next collar, and repeat until all sections are collapsed into the travel position. Make sure all of the collar clamps are tightened once the mast is fully retracted.

E. Pull the Ethernet cord connector ring to disconnect it.

F. Loosen the T-headed set screw for the Equipment Mounting Assembly and remove the surveillance device for transport.

G. Leave the air-release valve open while the mast is not in use.

H. Open the drain plug when the mast is not in use to prevent the possibility of precipitation accumulating inside the mast during storage.

Packing up the mast and hitch mount

Use this topic for help with removing the mast from the trailer.

A. Disconnect the PoE Ethernet connector from the battery box.

B. Replace the cap onto the trailer side of the connector.

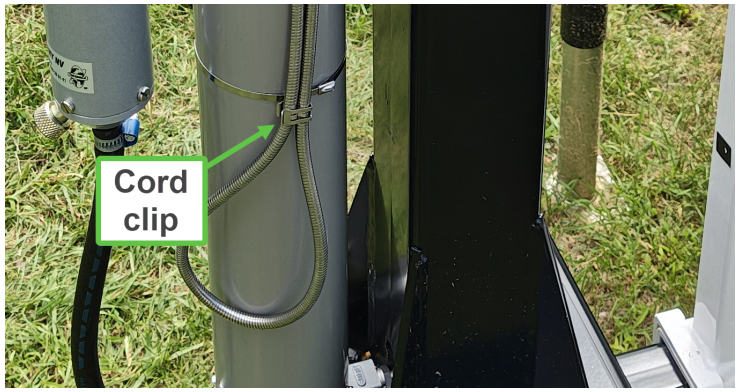
C. Clip any excess cord into the cord clips running the cord down the mast tube for secure storage.

D. Loosen the T-handled nut at the top of the hitch mount as far as it will go.

E. Lift the mast up and then do the following (see photos in *Mounting the mast on the hitch mount*, on page 8):

- Swing the support pin at the bottom out of its keyhole and
- Lift the T-handle bolt out of the slot.

F. Carefully pack the mast for transport.



G. Remove the pins holding the stabilization bracket to the trailer.

H. Remove the hitch pin in the receiver.

I. Slide the hitch mount out of the receiver and pack for transport.

J. Replace the pins on the trailer before transport.

Packing up the trailer

WARNING: RISK OF CAPSIZING. Leave all four jacks down at least far enough to prevent capsizing until you complete this procedure.

A. Power down the sign. See *Step 6 Powering the surveillance device and optional sign*, on page 10.

B. Unlock the battery box where the trailer tongue and lift handle are stored and open the lid.

C. Place the trailer's upper frame and solar panels in the folded travel position as follows (see details in *Raising the trailer's upper frame*, on page 7):

   i. Remove the lifting handle from storage inside the battery box.

   ii. Slide the lifting handle into the lifting mount.

   iii. Secure the handle in the mount using the locking pin.

   iv. Pull the two locking pins holding the upper frame in the upright position.

   v. Next, lower the upper frame.

   vi. Once the upper frame is folded down to the travel position, replace the locking pins to secure the frame in place and attach the rubber tie down (as shown below) on the front.

   vii. Rotate the solar panel into the travel position.

   viii. If you have a 380W trailer, slide the second solar panel back into the travel position and secure it with the locking pins.

D. Remove the locking pin from the tongue receiver tube (see photo on page 10)

E. Remove the trailer tongue from the battery box and slide it into the receiver tube.

F. Secure the tongue in the tongue mount using the locking pin.

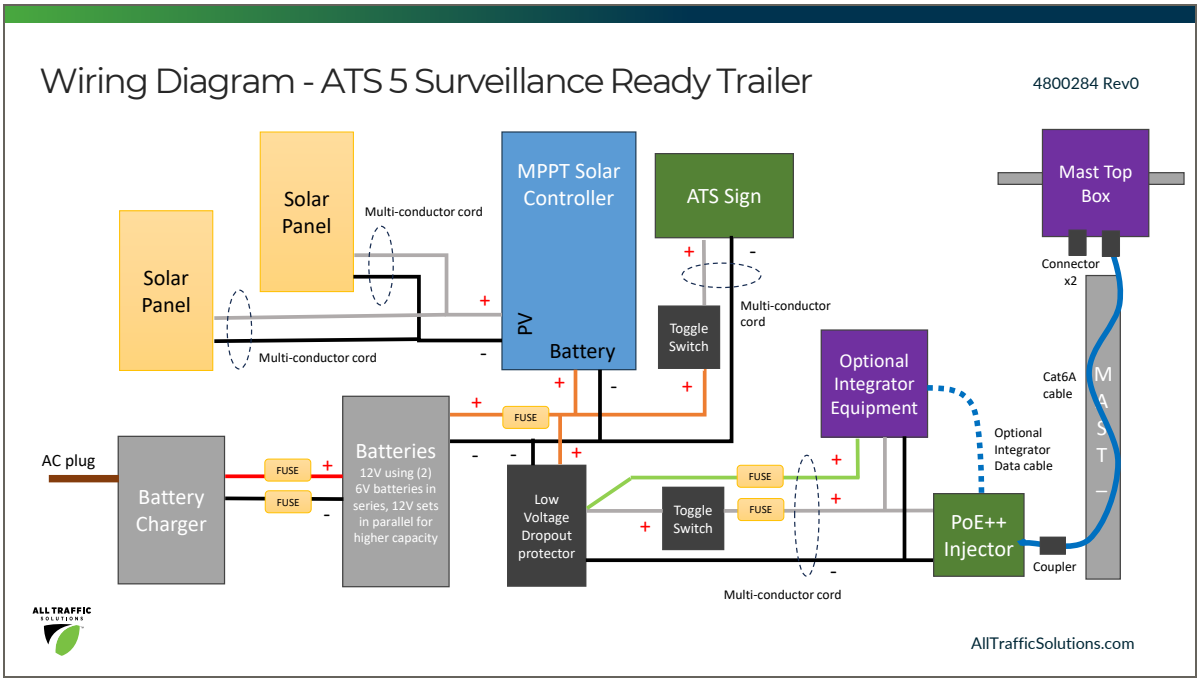
G. Secure or remove any third party equipment as needed for safe transportation.

H. Hook up the trailer to your tow vehicle for transport, as detailed in *Step 3 Hooking up the trailer*, on page 5. Make sure you follow all of the steps in order.

I. **REMINDER**: Before you tow the trailer to its next location, crank the four jacks up, rotate them to the horizontal, stowed position (as shown below with an ATS 5 Trailer), secure them in place, and make sure all connections are safe.

Appendix A Wiring diagram

Use the diagram below if you need additional information about component design.



Contacting Customer Support

For support for your All Traffic Solutions products,

- visit the Customer Support page at https://www.alltrafficsolutions.com/support/,
- send email to support@alltrafficsolutions.com, or
- call 1-866-366-6602, Option 2, anytime between 8:00 a.m. and 6:00 p.m. Eastern Time, Monday to Friday.

SCAN ME

Technical documentation and training

To view technical documentation, please click the Help icon ? at the top right of the TraffiCloud Web page.

For online training resources, please click or scan the QR code at right to visit our **TraffiCloud Training Videos Hub**. To discuss additional TraffiCloud training options, please contact Customer Support.

SCAN ME

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