

ATS 5 Trailer Quick Start Guide



Thank you for purchasing an **ATS 5 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. Onboard equipment is powered by lead acid batteries and an optional solar panel assist. For TraffiCloud documentation, subscribers should refer to the *TraffiCloud User Guide*. On the TraffiCloud **Help** menu, click the **Getting Started Guides** link. Local Bluetooth access only customers with data-enabled signs should refer to the configuration sections of the *Quick Start Guides* for your signs, which include details about using TraffiCloud Sign Manager for Windows.

Initial ATS 5 Trailer setup

IMPORTANT: Review the [Safe Trailering Guidelines](#) on the next page and then perform the following setup steps:

- Step 1 [Choosing a site](#), on page 4
- Step 2 [Inspecting and charging the trailer's batteries](#), on page 5
- Step 3 [Hooking up the trailer](#), on page 6
- Step 4 [Setting up at the roadside](#), on page 7
- Step 5 [Powering the sign](#), on page 8
- Step 6 [Securing the trailer](#), on page 9

After deployment, see [Packing up the trailer for redeployment](#), on page 9.

Scan or [click](#) the QR code at right for an instructional video >>>



Check over the trailer

Upon receiving your new ATS 5 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 precise order details.

What's included	What you'll need
<p>The ATS 5 Trailer includes the following:</p> <ul style="list-style-type: none">» The trailer, with one or two pairs of lead acid batteries and an optional solar panel assist, and 12-VDC AC smart charger,» A solar controller,» A SpeedAlert 18 or 24 Radar Message Sign, InstAlert 18 or 24 Variable Message Sign, or Shield 15 Radar Sign (signs sold separately).» This <i>ATS 5 Trailer Quick Start Guide</i>. All setup and quick start (installation) guides are also posted to the ATS Customer Support page.	<ul style="list-style-type: none">» A vehicle equipped with a trailer hitch for towing a load of up to 1,000 lbs. (454 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 <i>jurisdiction</i>.

For more details, consult the latest [ATS Trailers page](#) on our website.

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	<p>Ensure the following:</p> <ul style="list-style-type: none"> » 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.
	<ul style="list-style-type: none"> » 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 <ul style="list-style-type: none"> » 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 the trailer for redeployment , on page 9.
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 Choosing a site


You'll need to set up a site for your ATS 5 Trailer so that you can collect and store traffic data and generate reports. Here are the basic steps and options you'll need to perform:

- A. **Select a street location:** Identify your planned traffic study site to start collecting traffic data so that you can create reports. You'll need to carefully consider the physical characteristics of the roadway to ensure optimal performance of the sign and solar panel. See [Selecting a physical location, below](#).
- B. **Create and assign a Site in TraffiCloud to hold your data:**

Option 1: If you have a Traffic Suite Software subscription,

- i. On the TraffiCloud Web portal, click **Sites** and then click the plus sign  to create a new Site,
- ii. Assign the site to your device: On the **Equipment** page for your device, go to **General > Assigned Site**.

Option 2: In the TraffiCloud mobile app, on the navigation menu, tap the **Site Management** tab and then click the **Plus** button .

Option 3: If you'll be using the TraffiCloud Sign Manager application on your PC, on the TraffiCloud Web portal, click **Sites** and then click the plus sign  to create a new Site. Then, assign your data to this Site when you upload it using the application.

For detailed instructions:

- See the video "Creating and Assigning Sites" (select a video based on your sign type) from the [TraffiCloud Training Hub](#).
- If you have the Traffic Suite Software, in the *TraffiCloud User Guide* see "Creating a Site" and "Assigning a Site to your device."

Selecting a physical location

The site you select for the ATS 5 Trailer will vary with your requirements, however you should generally adhere to the following guidelines:

Guideline	What to do
Choose the distance from intersections	Place the ATS 5 Trailer at least 300 ft. (90 m) away from any intersection (avoid locations near stop signs or traffic lights).
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 ATS 5 Trailer to the vehicles being counted will be uninterrupted by other traffic

Guideline	What to do
	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 ATS 5 Trailer or solar panel.
Ensure adequate sunlight	If you have a solar panel, choose a location where the panel will remain unobstructed in terms of sunlight throughout the day.
Choose the distance from the roadway	Ideally, place the ATS 5 Trailer within 12 ft. (3.7 m) of the roadway.
Avoid stop-and-go traffic	Avoid locations with frequent tailgating or stopped traffic, as data accuracy is significantly impacted by these traffic conditions.
Use a stable structure	Deploy the ATS 5 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 6V deep cycle batteries wired together to deliver 12V. Each battery pair adds more power and capacity to the trailer. The standard power supply is a pair of flooded lead acid deep-cycle 6V batteries in series for 12VDC operation. With the proper battery power cables, a second pair of 6V batteries can be connected in parallel with the first pair. 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. Assuming adequate sunlight conditions, trailers with solar assist that are equipped with ATS products will typically have an indefinite run time.



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 TrafficCloud Equipment page or Dashboard,
- » The TrafficCloud 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:

- Make sure the trailer is in a well-ventilated area and powered off. See [Step 5 Powering the sign on page 8](#).
- 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.

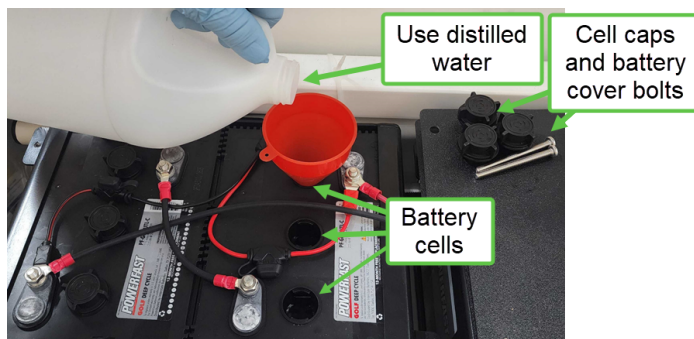


Charging can take between 24 to 48 hours with the extra battery option.

To maintain flooded batteries:

For any ATS 5-series trailer with flooded batteries, battery electrolyte levels will need to be periodically monitored and added to if they get low. To do this:

- Make sure the trailer is powered off.
- Remove the battery storage box covers.
 - If the trailer is equipped with a round black cellular antenna on the battery box lid, be sure to disconnect the three SMA (coaxial) connectors before removing the lid completely.
- Wearing PPE (gloves and protective glasses), remove the battery covers and cell caps.
- Inspect the electrolyte levels in each battery for any cells that are low or dry.
 - If any of the levels are low, add only enough distilled water to cover the internal plates. Then charge the batteries. See [To check battery charge levels;](#) on the previous page.
- After charging, recheck the battery cells and add distilled water if necessary, but only to within 1/8-in. (25 mm) of the bottom rim.



Step 3 Hooking up the trailer

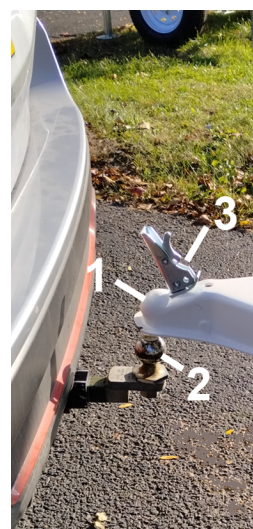
Use the instructions in this step for help with hooking up the trailer.

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. [<<<For an installation video, click here or scan the QR code>>>](#)

To move the trailer and vehicle into position for hookup:

- Move the trailer into position on a flat surface so that you can back your vehicle up to it.
- Lower all four jacks to securely support the trailer. Pull the locking pins and rotate the jacks to the deployed (vertical) position.
- Remove the locking pin from the tongue receiver tube (see photo on [page 9](#)).
- Remove the trailer tongue from storage inside the battery box and slide it into the receiver tube.
- Secure the trailer tongue in the receiver tube using the locking pin.
- 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.

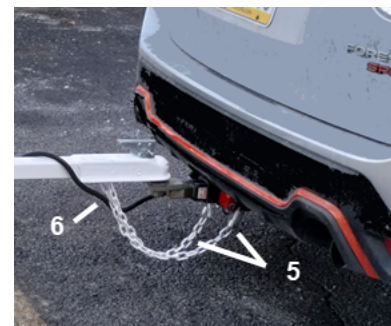
To lower the trailer onto the hitch:

- Crank the front jacks down to lower the coupler (1) onto the hitch ball.
- 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.

- Optionally, lock the tongue latch with a padlock (not included).
- Crank all four jacks back up, then pull the locking pins, rotate them up to the travel position (horizontal), and secure them in place.
- 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.
- Connect the wiring harnesses (6).
- Test to ensure that the trailer signal lights, taillights, and brake lights are functioning properly. Work with a partner if necessary.
- 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](#).

[FOR VIDEO INSTRUCTIONS, CLICK OR SCAN THE QR CODE >>>](#)

- 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.
- 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.



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- 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 jacks or by hand, lift the trailer off the hitch ball.
- E. Move the tow vehicle away from the trailer.

Positioning the solar panel (if equipped)

Use these steps to position the solar panel (or panels), if equipped, **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.
- B. Rotate the panel 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.

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 9), 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 Powering the sign

Here's how to power the sign.



NOTE: Make sure you charge the trailer batteries before initial deployment. See [Step 2 Inspecting and charging the trailer's batteries](#) on page 5. 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 sign:

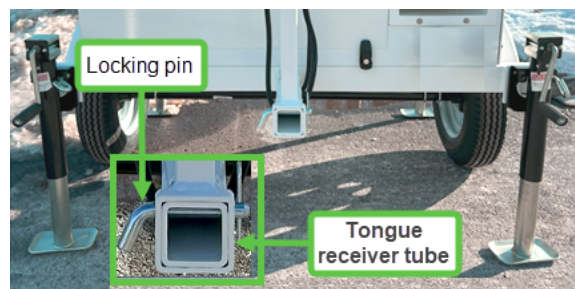
- A. Unlock and open the battery box compartment to access the power switch.
- B. To power on or off the sign, flip the toggle switch to the ON or OFF position.

Step 6 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 box to prevent tampering and the trailer will be ready for use.



Packing up the trailer for redeployment

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

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 5 Powering the sign](#), on the previous page.
- 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 the previous page):
 - 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) on the front.
 - vii. Rotate the solar panel into the travel position.
- D. Remove the locking pin from the tongue receiver tube (see photo [above](#))
- 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 shown with an ATS 5 Trailer below, and detailed in [Step 3 Hooking up the trailer](#), on page 6. Make sure you follow all of the steps in order.

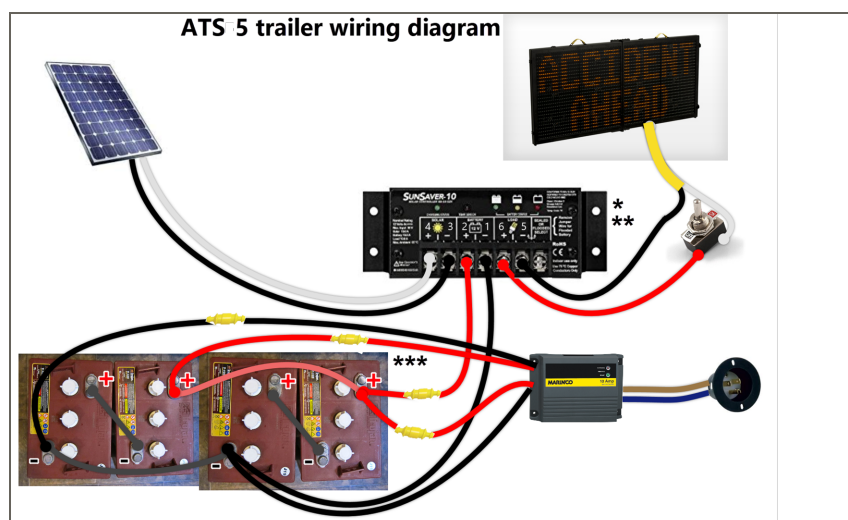


- I. **REMINDER:** Before you tow the trailer to its next location, crank the four jacks up, rotate them to the horizontal, stowed position (as shown below with an ATS 5 Trailer), secure them in place, and make sure all connections are safe.



Appendix A Wiring diagram

Use the diagram below if you need to replace any of the trailer components.



Replacing parts

* For SunSaver 10L or 20L solar controllers, attach the red wire from the switch to terminal 2 (battery +). Remember to remove the jumper if you have flooded batteries.

** When replacing the solar controller, ensure the wires are hooked up in this order: Batteries > Solar > Load.

*** Can be configured as two 6V 225Ah batteries in series for 12V @ 225Ah or four 6V 225 Ah batteries in series and parallel for 12V @ 450 Ah.

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.



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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.



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