Radar Flashing Speed Sign

For Any Further Assistance Please Call Customer Service Department at: 866-511-5642

Introduction- *From the ground up*

Flashing Sign Systems are an LED Sign Enhancement designed and engineered to serve a variety uses and applications on your streets.

We make no reference or recommendation to the mounting infrastructure to be used. It is highly advised that a local engineer consultation be part of the installation plan. Given the added weight and surface area of our devices, a suitable pole or mounting method is going to be more substantial than that typically used for signs alone. It is imperative that localized weather information be considered when selecting a mounting solution.

Please read and observe all safety information and instructions in this manual (found on page 2) before installing the system equipment.

The following designations signal critical information contained in this manual.

DANGER! Indicates a hazardous situation, which, if not avoided will result in serious injury and/or death.

CAUTION! Indicates a potentially hazardous situation, which if not avoided could result in moderate bodily harm and/or property damage.

We provide important safety information and warnings to assist you in understanding and avoiding potential harm to yourself or others, and possible damage to equipment during installation of the Flashing Sign System. Although we have included many of the potential hazards, you may encounter during the installation of this equipment, we cannot predict all of the possible hazards and this list should not be a substitute for your judgment and experience.

If you are unsure about any part of this installation or of the potential hazards mentioned, please call a qualified consultant immediately.

DANGER!

Use appropriate work zone traffic control methods, equipment and procedures.

CAUTION!

An accidental short circuit may instantly heat jewelry, tools and surrounding objects with skin-searing temperatures. To reduce risk when working around batteries, keep conductive objects away from battery terminals.

Warnings and Information

Liability Statement
Important Note: Signs are not a safety device. The company shall be held harmless and will not be liable for any indirect, special, consequential, or punitive damages arising out of or relating to any traffic or other incident resulting in damage, injury, or death whether or not it is successful in alerting the approaching driver. This includes any type of equipment malfunction whatsoever.

DANGER!

To reduce the risk of electric shock related injury resulting from contacting hazardous AC voltage:
Portions of this equipment derive power from sources that have high voltage levels. These must be serviced by qualified personnel, who have previous training or certification to safely work on high voltage equipment.
Consult a Qualified Electrician

CAUTION!

This product uses devices that radiate RF energy in the course of normal operation. Radar RF energy can be harmful to the eyes:
To reduce exposure to the risk of RF energy, do not stare into the radar antenna. Keep a minimum safe distance of 20cm (8-inches) from the radar face.

CAUTION!

Strain or back injury may result from lifting equipment improperly:
To reduce the risk of strain or back injury, use proper lifting techniques and have adequate help available when needed.

CAUTION!

To avoid the possibility of injury due to falling or unstable equipment:
Be certain the equipment is mounted to an appropriately rated pole or equivalent mounting surface.
Use appropriately rated mounting hardware.

NOTICE

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off or on, the user is encouraged to try to correct the interference by one or more of the following methods:

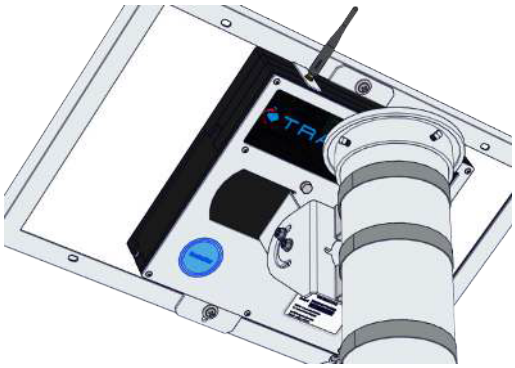
Re-orient or relocate the receiving antenna.
Increase the separation between the equipment and the receiver.
Consult an experienced radio /TV technician for help.

Caution: Changes or modifications not expressly approved could void all product warranties.

Installing a Solar Engine-Integrated Controller or Collaborator

1. The applicable Controller, a 30W solar panel, and mounting bracket ship as a complete assembly, ready to band or bolt to most standard post types. Note that banding material is not included.

2. The integrated mounting bracket accommodates mounting to the side of a round post (using banding) or square post (using bolts drilled on 1" centers. ie. Telespar). Note that the device must be mounted at the topmost part of the post to maximize solar exposure.



3. Allow 4 – 6 inches of post above any sign to prevent shadowing at midday (if using the standard bracket).

4. The solar panel must be aimed ***south-facing*** to ensure optimal charging. The solar bracket can be angled according to standard solar aiming practice for the geography of the installation (step 7, below).

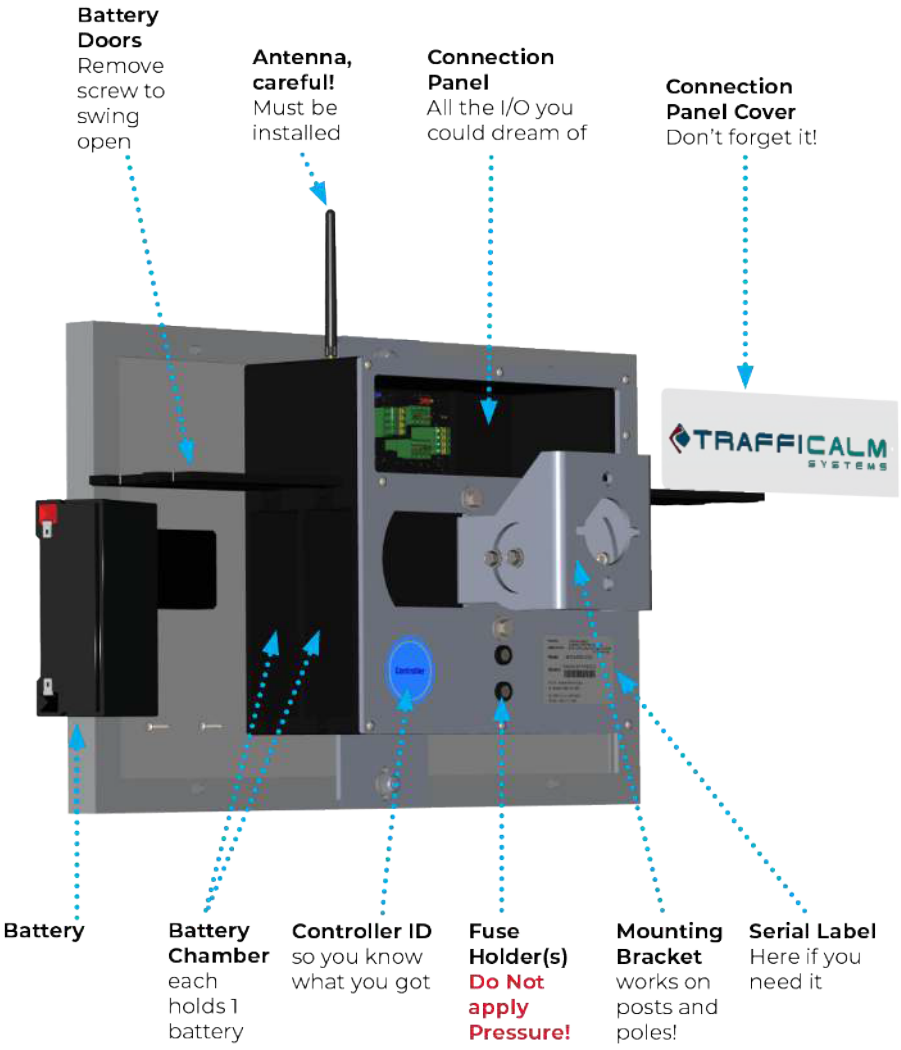
5. If true-south facing cannot be achieved, mount facing as near as possible to true south.

6. Affix the assembly to the post with (2) 3/8" bolts or banding.

7. Loosen bolts on the side of the standard bracket (see image at left) and decline the solar panel so that it is 15^0 + installation latitude below the zero axis and tighten to secure solar panel in place. Additional declination can be added to prevent snow buildup.

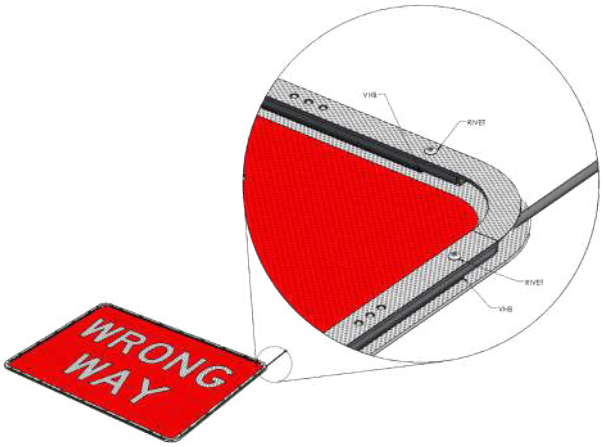
8. Install batteries into the cabinet and connect to the integrated harness. Red is 12V positive, black is negative. As it should be.

9. Finally, connections between devices are covered later in the guide



Installing an LED Sign Ring

The ultimate result of any Flashing Sign System, LED Sign Rings provide unmistakable warning to approaching drivers.



Unlike other solutions on the market, our rings apply to existing static signs of the correct size. If the LED ring is not factory mounted to a sign, there are two options for application.

Option 1: Pre-applied Double Sided Tape (VHB) provides secure mounting to most signs. It is important to note that signs treated with anti-graffiti laminate will not adhere to VHB tape.

VHB Tape, adhesive exposed

Sign area to clean and prep highlighted

Option 1 Process:

1. Prep the LED ring by exposing approx. 2” of adhesive at the end of each run. Crease the red masking to stick out past the ring edge, you’ll see why at stage 5
2. Treat the mounting surface on the sign by cleaning with the supplied alcohol wipe, then apply the tube of 3M Primer 94 to only the surface the ring applies to
3. The scary part! VHB tape is really sticky, so be intentional while lining up the ring to the sign.
4. With the ring as centered as possible, very gently press the corners to the sign surface
5. Pull one edge of red masking out at a time, slowly progressing around the ring and applying some pressure while centering the ring.

Option 2: Self-tapping screws are supplied to use in addition to, or in place of, the VHB Tape. This method provides the option to dismount the ring in the event the sign is damaged

Option 2 Process:

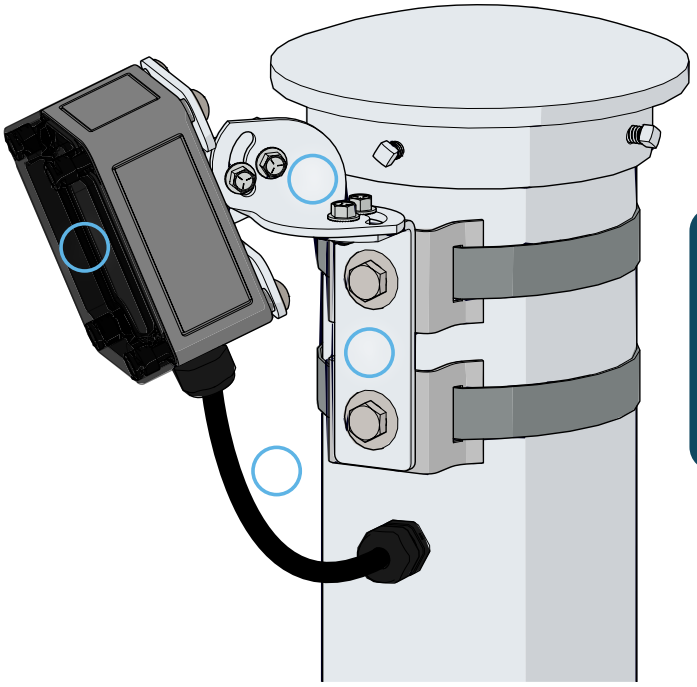
1. Locate the mounting holes in each corner of the ring, if necessary clear reflective sheeting from these holes so that screws can pass through easily
2. Optionally, expose a few small sections of VHB tape to hold the ring in place while applying screws
3. Using a power drill and the correct size Phillips bit, carefully screw the ring to the sign face
4. Exposed screws at the back of the sign may be uncool; correctly sized rivets may be used, but are not supplied

Now you’re ready to bolt the sign to the post, just like any other sign.

It is best practice to create a drip loop in the cable, and to trim or stow excess cabling after all components have been assembled and tested.

Installing a Radar Detector

Introduction- Flashing Sign Radar Detectors are different than any you've seen before. Designed to be light, affordable, and easy to use, our radar units provide a fast path to active flashing based on the real-time presence of vehicles.



Note: Radar detectors are compatible and interchangeable with all Flashing Sign Basic and Intelligent Controllers and Collaborators.

Step 1- Planning
The radar works best when it has a clear view of the roadway. Ensure the radar's "view" is unobstructed for as far out as possible, this may include being blocked large signs. Additionally, radar aim may play a critical role in accuracy, ensure the radar can rotate on its bracket's axes.

Step 2- Mounting

The Radar Detector ships as a complete assembly, either bolt or band the assembly as high on the post as possible via the articulating bracket (#1). Height provides an aiming advantage in both range, and omission of potential blocking by unexpected, parked vehicles. Note that banding material is not supplied, but adapter brackets are included.

Step 3- Aiming

The face of the radar (#2) should be aimed as flat and level to traffic as possible. Use the two-axis bracket (#3) to aim the radar off of it's neutral position. In some instances where more refined detection of specific lanes or entry points, it is advised to aim the radar downward and in toward the middle of the street.

To conceptualize the radar's detection range, imagine a 30° cone emitting from the face into infinity. Aimed high and flat, the cone will cover a broad area. Aimed down and in, the radar will detect a shorter section of the roadway.

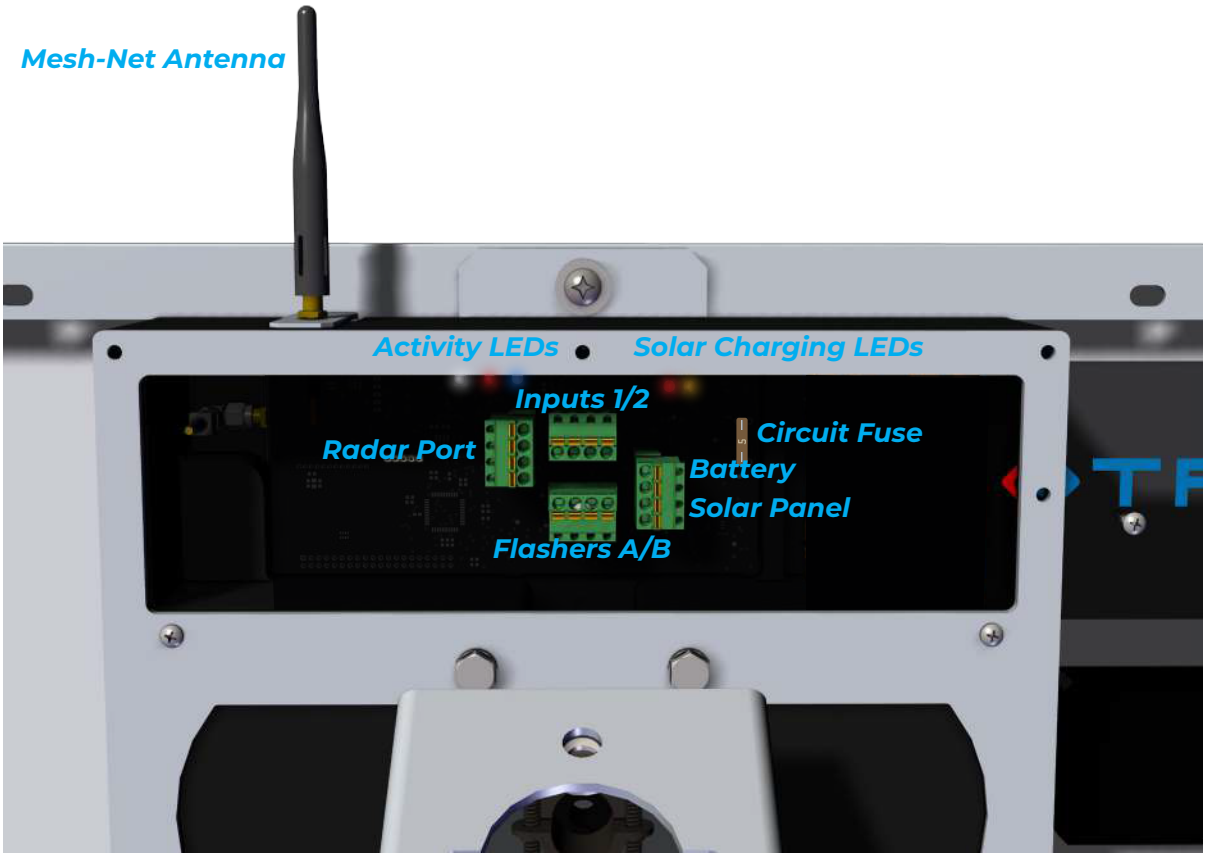
Step 4- Connection
The radar has 4 color coded wires enclosed in its UV-rated outdoor cable harness (#4). These land per the wiring diagram covered later in this manual. Note that you must connect the radar before powering on the system to unlock the radar configuration settings in the user interface.

It is best practice to create a drip loop in the cable, and to trim or stow excess cabling after all components have been assembled and tested.

Step 5- Refining Aim
Once connected and powered on, the radar will flash two LED indicators. Green indicates that power is applied. Red indicates a detection. You can use this red LED to refine the aim of the radar as you move it across its axes.

Step 6- Lock it down
Tighten all fasteners sufficiently to ensure your aiming is kept even through inclement weather.

Making Connections



Terminals Info

Mesh-Net Antenna- must be attached before powering on, only applies to Intelligent Controllers and Collaborators

Activity LEDs- respond per system activity, amber on the far right is charging status, white on far left is Mesh-net activity status

Radar Port- Accepts the four connections from Radar Detector

Inputs 1 and 2- provides the positive and negative connections for two input devices

Flashers A and B- provide powered outputs to flashing devices less than 10W per channel (sign rings)

Battery and Solar Panel- provides positive and negative connections for 12V battery(s) and 12V solar panels

Circuit Fuse- provides protection for I/O board, batteries fused separately.

Troubleshooting

Applies to: Controllers

For all issues not resolved by the steps outlined below, Customer Service is available to assist by calling 1-866-511-5642. Technical Support Hours: 7:00am – 5:00pm CST, Monday through Friday

Symptom	Resolution
Solar power system will not power on	Check Fuse Check PCT (Power Connection Terminal) Check Connections to LED Rings / Beacons Check Battery for 12VDC Check Voltage Output of Solar Panel for at least 12V
Radar equipped system will not activate	Make sure green status indicator is on. This is visible from the face of the detector. Ensure proper connections of Radar Detector are secure and in proper terminal locations. (Reference this manual or manual included with detector) Make sure "Radar Operated" is selected as the Operating Mode. This is done through TC Connect. Refer to the TC Connect manual.
Wi-Fi Connection not functioning	Activate Wi-Fi by removing all power from device. Reference page 16. Wi-Fi has timed-out. To prevent tampering, the system's Wi-Fi shuts off after 2-hours of operation. To enable Wi-Fi availability, reset power to the device by removing the Power Connection Terminal found within the Controller box, wait 10 seconds and re-insert.
LED Rings	Check connections. Refer to wiring label inside Controller or Collaborator box for proper terminal connections. Check Operating Mode and Flasher Settings in TC Connect. Refer to the TC Connect manual
Battery not charging	Check for cleanliness of the solar panel surface and clean as necessary. Check fuse, check all power connections and output and verify at least 12VDC Make sure the solar panel face is directed in a southern direction. Check for proper solar panel illumination each day. (must have minimum 2 hours unobstructed light each day) A low battery may take 2-5 days to fully recharge depending on hours of good sun received.
Sign is flashing slowly	This is a fall-back "Zombie" mode to signify radio communication failure

FLASHING SIGN SYSTEMS

Your guide to connect and configure your Flashing Sign System.

No Internet Connection Required!

Step 1:

Make sure the Power Connection Terminal inside the
battery box has been inserted properly and the power
has been applied to the system before continuing on in this guide to connect.

NOTE: *Once power is applied, TC Connect will be* ***active***
for 2 hours. *Should additional time be needed or if future*
changes need to be made - reset power by carefully removing
the POWER CONNECTION TERMINAL.
After 20 seconds re-insert.

Step 2: Security Key

Open to view your Wireless Network Connections on your browser-enabled device.

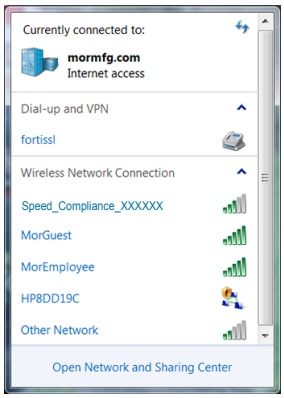
1. Locate and select Speed_Compliance_xxxxxx from the list of available networks.

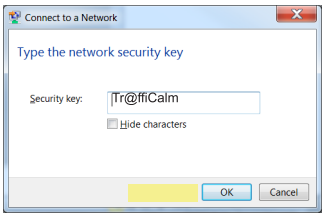
2. Enter security key / password:
   Tr@ffiCalm (case-sensitive)

Select: **OK or CONNECT**

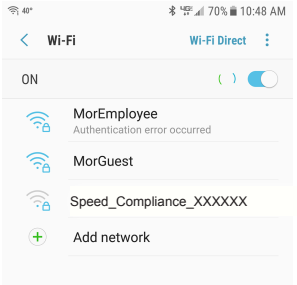
Example panes shown are **Windows-Based PC** and **ANDROID Devices, but Apple and Chrome products work, too!**

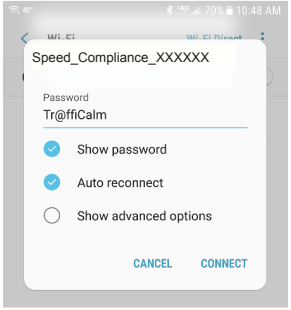
PC Procedure





Mobile Procedure



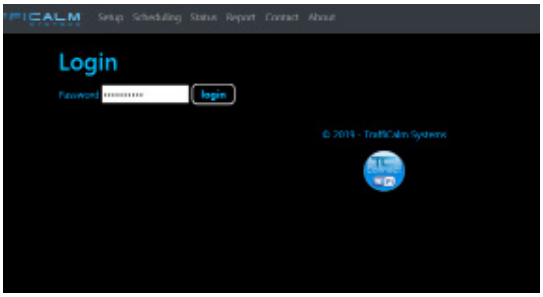


Step 3 - Login

When the network Security Key has been accepted, open your network browser and type the following URL:

setup.trafficalm.com

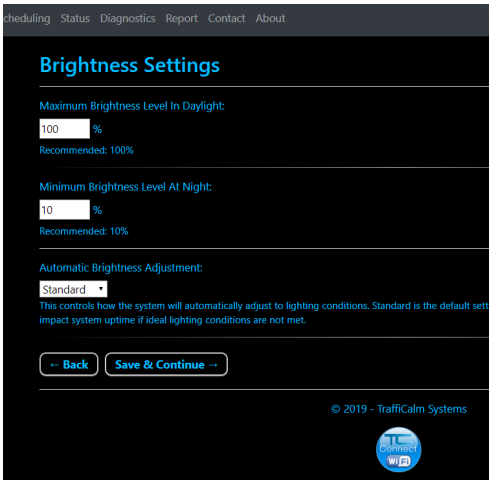
Enter login password:
Tr@ffiCalm (case-sensitive)



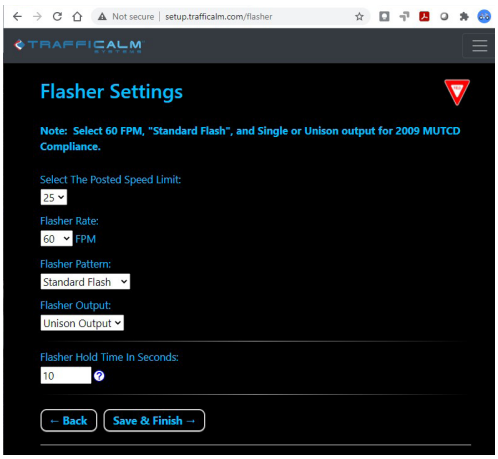
Step 4 - Brightness Settings

Brightness Settings determine the level of
LED brightness relative to ambient light
conditions.
Maximum Brightness Level in Daylight
recommended 100%
Minimum Brightness Level at Night
recommended 10%

Select Save & Continue



STEP 5 -Flasher Settings



Posted Speed Limit
This setting should be set to the speed of the roadway. Flashing will commence when a vehicle is detected traveling above this set value

Flasher Rate and Pattern
Note: Select 60 FPM, “Standard Flash” and single or Unison Output for 2009 MUTCD Compliance

Flasher Output
Sets which output terminal(s) are activated when detection occurs

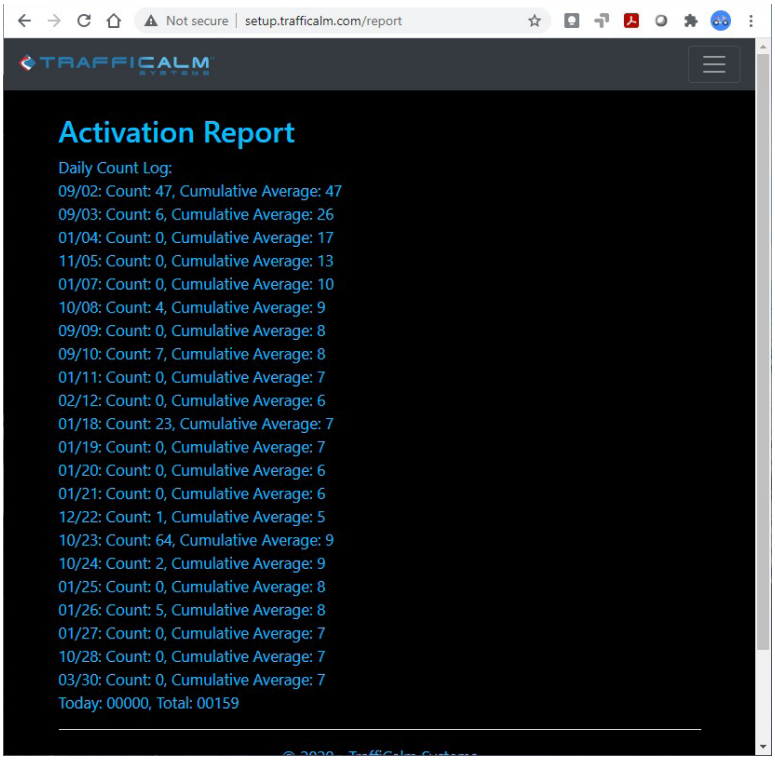
Flasher Hold Time
Sets how long (in seconds) a single target will see the flashing sign after detection concludes. While the target is within range of the radar flashing will sustain, however detection ends about 30 feet (9.1m) from the face of the radar

Conclusion

That concludes the necessary setup for a Speed Compliance System. Read on for more details on advanced features.

Menu- Reports

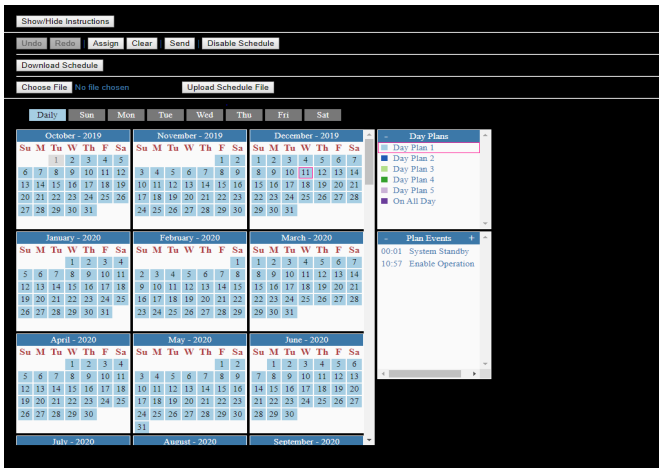
The system keeps a simple log of how many activations per day and in total were detected by the radar. This does not include speed data, but all of these detections are considered above the posted speed limit set in the last step of the setup.



The built in Flashing Sign Scheduler allows you to schedule OFF or ON behavior to occur throughout the day

Start by setting up events to happen on a day plan, then apply the day plan to either the daily button, the day buttons (Sun, Mon, etc.) or specific calendar days

Once completed, select to send the schedule to the Controller, then select to enable the schedule

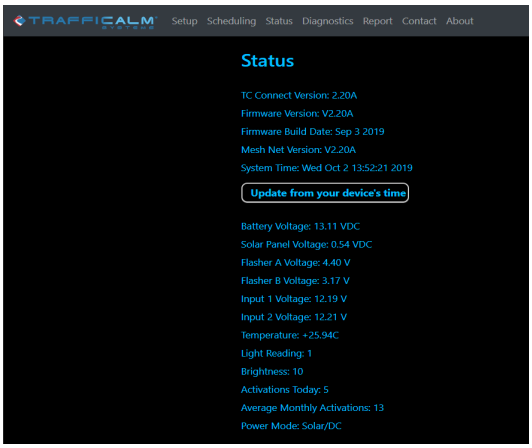


Scheduling Details

Undo - Removes last action or application of a day plan
Redo - Redacts the undo function
Assign - Applies the day plan to selected day button or date
Clear - Removes day plan from selected day button or date
Send - Sends the schedule to the group
Enable Schedule- starts the schedule operation
Download Schedule - saves created schedule to programming device (laptop, phone, etc)
Choose File/Upload Schedule File - allows the selection and quick distribution of any saved schedule file saved by the **Download Schedule** button
Daily - Day plans assigned to Daily button occur every day, repeating forever
Sun, Mon, Tues...- day plans assigned to the Day buttons occur on that specific day, repeating forever
Calendar - day plans assigned to specific calendar dates will occur on that day ONLY, with no repetition
To apply a day plan, simply drag and drop the day plan to the desired day or date. Additionally, a range of dates may be selected; use the Assign button to apply the selected day plan to the selected dates

Note to some Apple IOS users, the drag and drop action may not function properly. In this case, use the Assign button to apply day plans to days or dates.

Menu- System Status Pane
Provides the user with System Information.



- Firmware Version
- Firmware Build Date
- Time and Date
- Battery Voltage
- Flasher A Voltage
- Flasher B Voltage
- Input 1 Voltage

Menu- Advance Settings Page
covers various settings that can improve system functionality.

Of note, consider the following settings...

Power Type lets you select the type of power the supply utilized on the system. This is set to AGM (battery chemistry) by default which is correct for most Speed Compliance Systems. If an alternative power supply is being used, be sure to select it in this option.

Programmable input mode selects how the system handles an input connected to Input 2.

Radar Direction allows for the radar to detect approaching, receding, or all travelling vehicles. Approaching is most widely used and the default.

Radar settings- multiple radar settings are provided to ensure reliable detection of vehicles. Most installations will not require adjusting these, but if false detections are noticed, these settings can help reduce the instance of them.

Resets- two options are given to restore the device back to factory fresh, for, you know, when things get messed up.