

Houston Radar SpeedLane® Pro Commissioning Report 10/25/2023, Version 1.1

The purpose of this report is to validate and document commissioning of the SpeedLane Pro multilane traffic radar counter. Parameters to be filled or options to be circled are highlighted in green (pass) or red (fail) color.

Step 1 Record installation address:

Street/Intersection:

City: State:

Record radar orientation. Radar points towards (circle one option below):

N S W E NW NE SW SE

Record radar configuration technique used during installation (circle one option below):

WIZARD MANUAL

Record installation geometry:

(Setback is the distance from the face of the pole to the start of the 1st travel lane. Height is the mounting height of the radar from the ROAD SURFACE and NOT from the base of the pole).

Setback=

Height=

Step 2

Connect a Windows computer running StatsAnalyzer application to SpeedLane Pro using one of the 4 methods (serial, Ethernet, Bluetooth, modem). Note Stats Analyzer Version and radar ID and firmware version in the "Radar System Information" pop-up window and record them below:

Stats Analyzer Version= REV= ID= Serial Number: HostName:



Circle primary infrastructure connectivity method that will be used after installation is complete and fill in relevant information collected from "SpeedLane Setup" tabs:

If using Ethernet, click on SpeedLane Setup->Diagnostics click on "Run Network Diagnostics" button. Copy the Ethernet MAC (HWaddr) address from the data reported from the following line (you can use your cursor to copy and paste):

Detection And U	nits Vehicle Class	Serial Port	Network	Advanced	DVR	User Login	X3/G4	Diagnostics	
Run Network Diagnostics (ifconfig, route, ppp)									
eth0 Link encap:Ethemet HWaddr 70:B3:D5:D1:E4:4F inet addr:192.168.13.113 Bcast:0.0.0.0 Mask:255.255.255.255.0 UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:1967456 errors:0 dropped:0 overruns:0 frame:0 TX packets:853264 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:101829827 (97.1 MiB) TX bytes:133949611 (127.7 MiB) Interrupt:45 Base address:0xc000									
Ethernet	Static IP=				DHCP				
HWAddr (MAC Address): Click on SpeedLane Setup->Network tab:									
	10 Mbps		100 Mbps						
Serial	Type: RS23	32 R	.S485-ha	lf-duplex		RS485-ful	ll-duple	ŻΧ	
Bluetooth	Daud–								
Modem	APN=			Carri	Carrier=				
	Modem Stat	ic IP=			D	НСР			



If Tetryon Cloud server will be used for data retrieval, verify configuration in "Teryon Cloud Server" box on "SpeedLane Setup" -> "Network" tab:

Not Used

Hostname/IP=

Port=

Tetryon Customer ID=

Step 3

Confirm that radar clock as shown on "Connection" tab is correct:

NO

YES

Step 4

Click on SpeedLane Setup tab and verify that measurement configuration (speed units, class bins, speed bins) is correct per customer requirements.

YES

NO

Step 5

Select "SpeedLane Setup" -> "Advanced" tab. Click on "Read Now" button. Check that Input voltage is appropriate for the deployed power source. This could be 12v or 24V for DC powered units or 9.6V when unit operates from the battery. Record the value:

Input Voltage =

Input voltage matches power source within +/- 15%:

YES NO

Step 6

If the unit does not have internal battery option, the power button will not be present. If present, ensure that power button is depressed. Note: with the button in OFF position the unit will still operate while external power source is present (e.g. solar panel, POE, DC power supply) but will stop functioning when external power is removed. Power button depressed:

Not applicable

YES NO



Step 7

In the SpeedLane Setup->Advanced tab in the "Voltage, Temperature and Accelerometer" group click on Read Now button. Ensure the Level reading is withing $\pm -2^{\circ}$ of the grade of the road.

Level Reading of SpeedLane Pro: Tilt Reading of the SpeedLane Pro:

Within +/- of grade of road:

YES NO

In SpeedLane Setup tab click "Take Photo" button. Verify that the radar is level with the road (road lanes are parallel to the bottom/top of the picture frame).

YES NO

Verify that red cross on the picture lands between 1/3 and $\frac{1}{2}$ of the road.

YES NO

Verify that traffic is at least partially visible in the picture for all the configured lanes:

YES NO

Step 8

In "Speedlane Setup" -> "Advanced" tab make sure that "Multipass Rejection Options" are all enabled. In rare cases there may be a reason to disable one or more option as an exception.

YES NO EXCEPTION

Step 9

Click on "SpeedLane Plot" tab. Verify that correct number of lanes has been configured:

YES NO

Verify that traffic direction on the plot matches the traffic direction on the road.



YES NO

Verify that any gaps in the lanes on the setup plot are reflective of actual gaps between lanes on the road and vice-a-versa.

YES NO

Click the SpeedLane Plot tab. Enable (check) "Show RSS" box. Verify that vehicles have 3 or more bars of signal strength.

YES NO

Step 10

Collect data in specified intervals on a per-lane basis and compare against manual tally counts and LIDAR gun. The interval time is usually specified by the approving authority and may be 1, 5 or 15 minutes.

We highly recommend that you review <u>training</u> <u>video</u> that explains how to use validation tool built into the StatsAnalyzer. Not all details are presented in the next below:

https://www.youtube.com/watch?v=upHijHsndSU



In summary:

Click on SpeedLane Plot and then "Open Validation Tool" button near the bottom center. The workflow is to record only the lanes you are going to collect manual data for (so as not to confuse the data later when you save it to file).

The system will start a new record and then continue to create new records after the specified record interval or till the Stop button is clicked.

You can then move to the next lane. There is a convenient "insert comment" feature if you want to incorporate contemporaneous notes into the saved filed for later use. For example, you can use this feature to record your manual count values.

Monitor traffic in the lane(s) of interest with a tally counter (and/or a) speed gun until you have recorded a statistically significant number of vehicles in each lane. Typically, this would be 100 vehicles/lane or 15 minutes whichever comes first.

In a heavy traffic situation, it is recommended that a person using tally counter and speed gun would monitor no more than one lane at a time as otherwise it may be difficult to ensure



sufficient accuracy. Person with speed gun should be sufficiently up or down stream of the radar installation point so as to minimize the "<u>Cosine Error</u>" effect.

Volume and speed accuracy are within SpeedLane Pro specification:

NO

YES

Step 10 Record installer information.

Technician Name:

Technician Signature:

Date: