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Welcome to Decatur Electronics, Inc.

Thank you for choosing the Decatur Electronics SpeedSpy™ — your solution for covert traffic data collection. We urge you to study this manual before using your SpeedSpy™, so you can maximize all of its benefits, including its sophisticated radar device.

The fact that you purchased a SpeedSpy™ indicates that traffic safety, and efficient traffic management in your community are high priorities.

If you are as pleased with its performance as we think you will be, ask your Decatur sales representative about other Decatur products; including the Genesis™ line of radars, the Onsite™ line of speed trailers, dollies, pole signs, and the Responder™ line of in-car video systems.

—The Management and Staff at Decatur Electronics,
The Nation’s Oldest Radar Company
**SpeedSpy™ Features**
The Decatur Electronics SpeedSpy™ is an affordable, reliable speed enforcement tool for stationary mounted data collection.

The SpeedSpy™ features the Decatur Electronics System Interface (SI-3)™ K-band directional radar antenna, the EZ Stat™ serial module with statistics software and rugged construction in a weatherproof case. The SpeedSpy™ is easily installed in multiple applications with the supplied mounting hardware. Create customized traffic speed and flow reports with the EZ Stat™ software technology.

For more information on other radar/message trailers and signs, contact us toll-free at 800.428.4315 or visit our web site at; www.DecaturElectronics.com.

**About This Manual**
This manual contains valuable information to help you set up, use, and maintain your SpeedSpy™; so you can optimize its life and keep it at peak performance. Please take a moment to read through it and keep it handy for future reference.

**Note the following symbols in this manual:**

- Indicates a warning message about safety precautions. Please read it carefully.
- Indicates a helpful tip or precaution to note.
1. Receiving Inspection
   • When you receive your SpeedSpy™, you will want to inspect all the components for freight damage. Take pictures to document any damage.
   • Notify the freight company immediately of any damage, preferably while the driver is present.
   • Record the damage on the bill of lading and keep a record of the problems or damage.
   • Inspect the SpeedSpy™ for scratches or nicks that might have happened during shipping.

2. Setup
   2.1 Find a Good Location
   Position the SpeedSpy™ in a straight line of sight from the motorist’s view, either before or after a curve and not at a sharp corner (See Figure 4.2 Angular Interference). The SpeedSpy™ can be mounted on most roadside poles with the included hardware.

   ! WARNING:
   Before proceeding, open the enclosure and remove any items that are not bolted in place. Remove the 12 VDC battery by unscrewing the three wing nuts from the battery retaining plate. Disconnect the white Molex connector. Remove the battery retaining plate and carefully lift the battery unit with wire harness completely out of the enclosure. For more on this see Section 3.1 - Removing the Battery.
2.2 Setting Up the SpeedSpy™

Before first use, plug the charger into a 110 – 120 VAC wall socket and charge the first battery by connecting the male/female (white) Molex™ 2-pos connectors. Refer to the charger manual for further instructions. After charging the first battery, disconnect the Molex™ connector and attach the second battery and charge it.

1. The SpeedSpy™ includes an integral mounting plate assembly for attaching to roadside poles. Use the universal clamp kit to mount the SpeedSpy™ bracket to the pole first with the security lock hole facing up. (Figure 2.2b) Please refer to the universal clamp kit package for instructions for sizing the stainless steel straps.

2. Clamp the mounting bracket to a pole. After cutting the straps to correct length, run each strap through the side strap holes located on the pole flange of the bracket. Make sure that the security lock hole is facing up then place the mounting assembly against the pole (4 -5 ft. from the ground facing traffic flow), position the straps, insert the fasteners and tighten. See Figure 2.2b.

3. Position the SpeedSpy™ enclosure onto the pole mounting bracket by aligning the four base bolts into the four corresponding bracket slots. Allow the enclosure to fall into place. Secure the SpeedSpy™ enclosure by placing the supplied lock through the security hole on the bracket. See Figure 2.2c.
4. Unlatch the enclosure door and open. Insert one of the two 12 VDC lead sealed batteries. (See Section 3.1- Removing and Attaching the Battery for details.)

5. Insert the EZ Stat™ module into the male 9-pin connector. Reference the red locator label on the enclosure door.

6. Turn on the unit. The power switch is located inside the box. The unit will operate for approximately two days before the battery must be recharged. Close and lock the case. The unit is waterproof only when the case is sealed. Failure to seal the case may lead to permanent damage to the radar unit.

7. The EZ Stat™ will collect speed data events. The EZ Stat™ reads vehicle speeds 5 times per second. When a moving object is detected by the radar, the logger expects it to be present for at least 4 seconds, then receive a zero speed. The maximum speed will be recorded with the timestamp in the memory of the logger module.

NOTE: The EZ Stat™ will not create a record if another car is in range of the radar before the first one passes beyond the antenna. When traffic is heavy, there will be no gap (zero speed) in speed readings, and the EZ Stat™ will see the whole cluster of cars as one event.
3. Components

3.1 Removing the Battery
Start by removing the three battery plate wing nuts and the battery retaining plate. The battery is positioned sideways with the battery terminals on the right. Stand the enclosure on a flat surface with the battery upright. Next carefully pull the battery from the enclosure.

3.2 Installing and Attaching The Battery
Ensure that the three battery plate wing nuts and battery retaining plate have been removed. Stand the enclosure on a flat surface with the battery cavity upright. Position the battery sideways with the battery terminals on the right and slide/push the battery back between the guide tubes. Replace the battery retaining plate and secure using the three wing nuts. Tighten the wing nuts enough to secure the battery and prevent movement. Connect the male/female white colored Molex™ connectors.

3.3 Battery Charger
The charger is designed for mounting. However we recommend that you use it as a desktop device. Charge the batteries at the office to minimize having to remove the SpeedSpy™ enclosure. If required, the charger can be mounted to the SpeedSpy™ base plate and attached to the optional charger connections on the interconnect circuit board (See Figure 3.4). The battery charger has a 5 A fuse.
3.4 Interconnect Functions

Fig. 3.4 details the three interface communication ports which transfers radar data from the SI-3™ antenna assembly to the EZ Stat™ and the SI-3™ programming port.

- ON/OFF: Flip the toggle switch to power on/off.
- SI-3 Prog. Port: The female 9-pin connector is used to access the SI-3™ programming options.
- EZ Stat Port: The male 9-pin connector is used to attach the EZ Stat™ module used to collect traffic data.
- SI Serial Port: SI-3™ is connected to this port/connector.
- Battery/Opt. Charger Terminals: plus (+) = red, minus (−) = black.

Figure. 3.4
Port Locations

INTERFACE BRACKET SCHEMATIC

EZ-Stat Port
SI-3 Prog. Port

TOP

BOTTOM

5A Fuse

Battery
Opt. Charger
SI-3 Serial Port
3.5 System Interface (SI-3)™
The SpeedSpy™ features the Decatur Electronics System Interface (SI-3)™ directional radar—a high-performance radar system that comes configured to monitor only the traffic that is approaching the radar antenna. Radar sensitivity has been pre-set for optimal operations. Fog, heavy rain, snow, and blowing dust can reduce the speed detection range.

3.6 EZ Stat™ Module
The SpeedSpy™ includes an EZ Stat™ module and the software application for traffic data collection.

3.7 Tuning Fork Test
If the SpeedSpy™ has come equipped with a tuning fork then the fork can be used to verify that the logger is receiving speed data.

To begin the test, make sure the SpeedSpy™ is turned on and that the EZ Stat™ data logger is plugged in. The green LED on the EZ Stat will be blinking. There is 60 seconds from the time the SpeedSpy™ is turned on in which to perform the test. After 60 seconds the system would need to be turned off and back on if the test is to be repeated.

1. Tap the tines of the fork on a firm, non-metallic surface. The tuning fork will ring audibly. Then place the tuning fork that you
tapped with the narrow side facing about 3 inches directly in front of the antenna. (See Figure 3.7).

![Figure 3.7](image)

*Only tap the tuning fork against hard plastic, wood, and materials that are softer than metal. Repeatedly tapping the tines on hard surfaces, such as metal and concrete, can damage the tines and invalidate the fork for future tests.*

2. Observing the LED on the EZ Stat™, pull the tuning fork to one side so that the fork is no long able to be read by the antenna. The LED on the EZ Stat™ will blink red once indicating that the information has been saved.

If the LED does not blink red once, then there may be an issue with the EZ Stat™. Remove the EZ Stat™ and plug it into the computer that has the EZ Stat™ software installed on it. Open the software and press the "Connect" button. Check to make sure that the box labeled "Product" says "OnSite Series Trailers". If the box says "Decatur Radar" then change the setting to "OnSite Series Trailers" and press the "Disconnect" button and try the EZ Stat™ again in the SpeedSpy™.
4. How Radar Works
Understanding potential radar interference and what you can do when it occurs can greatly increase the radar’s performance.

Determining a vehicle’s speed begins with the radar antenna transmitting and directing a beam of microwave energy (radio waves) at an approaching (or departing) target vehicle. When energy from this beam strikes a vehicle, a small amount of the beam is reflected back to the antenna in the radar device. The reflected signal frequency shifts by an amount proportional to the speed of the target vehicle. This is known as the Doppler effect. The radar device then determines the target vehicle speed from the difference in frequency between the reflected and transmitted signal.

4.1 Interference Sources and Remedies
When properly installed and operated, Doppler radar is extremely accurate and reliable. However, variations in the environment can cause situations and circumstances, which can cause spurious (erratic and unusually low or high) speeds to be recorded.

4.2 Angular Interference (Cosine Effect)
The cosine effect causes the system to record a speed that is lower than the actual vehicle speed. This condition exists when the target vehicle’s path is not parallel to the antenna, including conditions such as the vehicle traveling on a curve or a hill as shown in Figure 4.2.

![Figure 4.2 The Cosine Effect](image-url)
As the angle between the beam of the antenna and the target vehicle increases, the recorded speed decreases. Ideally, an angle of zero degrees (0°) is preferable, because the recorded speed is the actual target vehicle speed (see Table 4.2). The following table shows the effect that an increasing angle has on a recorded speed:

<table>
<thead>
<tr>
<th>Actual Speed</th>
<th>0°</th>
<th>1°</th>
<th>3°</th>
<th>5°</th>
<th>10°</th>
<th>15°</th>
<th>20°</th>
<th>30°</th>
<th>45°</th>
<th>60°</th>
<th>90°</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 mph</td>
<td>30</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>28</td>
<td>28</td>
<td>26</td>
<td>21</td>
<td>15</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>40 mph</td>
<td>40</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>38</td>
<td>37</td>
<td>34</td>
<td>28</td>
<td>20</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>50 mph</td>
<td>50</td>
<td>49</td>
<td>49</td>
<td>49</td>
<td>48</td>
<td>46</td>
<td>43</td>
<td>35</td>
<td>25</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>60 mph</td>
<td>60</td>
<td>59</td>
<td>59</td>
<td>59</td>
<td>57</td>
<td>56</td>
<td>51</td>
<td>43</td>
<td>35</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>70 mph</td>
<td>70</td>
<td>69</td>
<td>69</td>
<td>69</td>
<td>68</td>
<td>67</td>
<td>65</td>
<td>60</td>
<td>49</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>80 mph</td>
<td>80</td>
<td>79</td>
<td>79</td>
<td>79</td>
<td>78</td>
<td>77</td>
<td>75</td>
<td>69</td>
<td>57</td>
<td>40</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4.2
Actual and recorded speeds at antenna-to-target angles

Small angles (less than 10°) have little effect on accuracy. As the angle increases, the recorded speed decreases. At 90°, the target speed is 0 - grossly incorrect.

4.3 Feedback Interference
When the radar beam is directed at computer screens, streetlights and other electronic devices, it can record spurious speeds. To correct this type of interference, relocate the SpeedSpy™.
## 5. Specifications

### SpeedSpy™ General Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna</td>
<td>SI-3 K-band</td>
</tr>
<tr>
<td>Frequency</td>
<td>24.150 GHz nominal</td>
</tr>
<tr>
<td>Power Out</td>
<td>10 mW nominal</td>
</tr>
<tr>
<td>Output Power Density</td>
<td>( \leq 1 \text{mW/cm}^2 )</td>
</tr>
<tr>
<td>Beam Width</td>
<td>12(^\circ) nominal</td>
</tr>
<tr>
<td>Detection Range</td>
<td>0 - 3000 ft (setting dependent)</td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>12 VDC (10.8 VDC - 23 VDC)</td>
</tr>
<tr>
<td>Nominal Current Draw</td>
<td>+12 VDC (180 mA)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-22(^\circ) to +158(^\circ) F (-30(^\circ)C to + 70(^\circ)C)</td>
</tr>
<tr>
<td>Maximum Humidity</td>
<td>100% (unit is weatherproof closed case is waterproof)</td>
</tr>
<tr>
<td>Polarization</td>
<td>Linear</td>
</tr>
</tbody>
</table>

### SpeedSpy™ Detailed Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serial Communication</td>
<td>RS232C, 5 results per second</td>
</tr>
<tr>
<td>Data Rate</td>
<td>Baud rate 9600</td>
</tr>
<tr>
<td>Target Acquisition Time</td>
<td>50 ms</td>
</tr>
<tr>
<td>Weight</td>
<td>17.2 lbs (7.71 kg)</td>
</tr>
<tr>
<td>Length</td>
<td>15&quot; (38.1 cm)</td>
</tr>
<tr>
<td>Width</td>
<td>8&quot; (20.32 cm)</td>
</tr>
<tr>
<td>Speed Range</td>
<td>5 - 150 mph (8 -24 km/h)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>( \pm 1 \text{ unit of measure} ) (\pm 1 \text{ mph}, \pm 1 \text{ km/h})</td>
</tr>
<tr>
<td>Polarization</td>
<td>Linear</td>
</tr>
</tbody>
</table>

### EZ Stat™ Module Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>( \frac{3}{4} )&quot; H x 1 5/8&quot; W x 2 1/2 L</td>
</tr>
<tr>
<td>Connectors</td>
<td>D-Sub 9-Pin &amp; USB connectors</td>
</tr>
<tr>
<td>Memory</td>
<td>4 megabit</td>
</tr>
<tr>
<td>Processor</td>
<td>68HC908 Family</td>
</tr>
<tr>
<td>Power</td>
<td>Lithium Coin Cell</td>
</tr>
</tbody>
</table>
6. Legal Requirements

6.1 Document

TCB

GRANT OF EQUIPMENT AUTHORIZATION

Certification
Issued Under the Authority of the Federal Communications Commission

By:

ACB, Inc.
6731 Whittier Avenue Suite C110
McLean, VA 22101

Date of Grant: 08/12/2013
Application Dated: 08/09/2013

Decatur Electronics Inc
3433 East Wood Street
Phoenix, AZ 85040

Attention: Todd Cottle

NOT TRANSFERABLE

EQUIPMENT AUTHORIZATION is hereby issued to the named GRANTEE, and is VALID ONLY for the equipment identified hereon for use under the Commission’s Rules and Regulations listed below.

FCC IDENTIFIER: HTR-S13
Name of Grantee: Decatur Electronics Inc
Equipment Class: Part 15 Field Disturbance Sensor
Notes: Traffic/Speed Radar

Grant Notes

<table>
<thead>
<tr>
<th>FCC Rule Parts</th>
<th>Frequency Range (MHz)</th>
<th>Output Watts</th>
<th>Frequency Tolerance</th>
<th>Emission Designator</th>
</tr>
</thead>
<tbody>
<tr>
<td>15,245</td>
<td>24150.0 - 24150.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures. Users and installers must be provided with antenna installation and transmitter operating conditions for satisfying RF exposure compliance.
6.2 **FCC Statement**
This device complies with FCC part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

6.3 **Conditions**
Changes or modifications not expressively approved by the party responsible for compliance could void the user's authority to operate the equipment.

6.4 **Installer Note**
This device must be installed in a manner that ensures 20 cm separation is maintained between this device's antenna and all persons in order to comply with the FCC and IC RF exposure requirements.

6.5 **End User Note**
Maintain a 20 cm separation between this device's antenna and all persons during operation in order to comply with the FCC and IC RF exposure requirements.
7. EZ Stat™ Data Logger
The SpeedSpy™ package includes a USB Product flash drive, a USB cable and the EZ Stat™ module.

- When the EZ Stat™ is used with one of Decatur Electronics's trailer products, such as the SpeedSpy™, the EZ Stat™ draws power from the SpeedSpy’s™ serial connector. Non-Decatur products that have serial connectors will not have this special power connection and therefore will not be able to power the EZ Stat™.

7.1 EZ Stat™ Module
Use the EZ Stat™ module to collect traffic data from a select number of Decatur’s speed measurement products.

- Data is only collected in real time. The OnSite™ product does not store data in a file for later transfer. Instead speed data is sent immediately to the EZ Stat™. For that reason the EZ Stat™ must be left connected until such time as data analysis is needed.

7.1.1 The USB Port
The EZ Stat™ has a mini-USB receptacle. Use the included USB cable to connect the EZ Stat™ to the computer's USB port.

7.2 EZ Stat™ Software Installation
The flash drive contains the User Manual, EZ Stat™ software along with additional information on Decatur products. (Refer to Section
9.2 for installation instructions.) Use the EZ Stat™ software application to examine data collected with the module.

- To install the Decatur EZ Stat™ software you must have administrative rights. In addition, the software automatically downloads a driver from the web. Therefore, the computer must be connected to the internet and the automatic update feature must be enabled, otherwise an error message will occur when you try to run the application.

8. **EZ Stat™ Module**

8.1 **EZ Stat™ Operation Indicators**

When the module is connected to power, the green LED indicates the module is on. The green LED also indicates memory usage when powered by a Decatur Electronics’ speed measurement device. When plugged into the measurement device the green LED will flash a number of times, pause and then flash a number of times again. It will continue to report the amount of memory usage until the measurement device is turned off. Memory capacity is approximately 130,000 counts.

Eight flashes indicate that the EZ Stat™ module has no data and is ready to be used. As the module records data the number of flashes will decrease. Once the module is full and no more data can be stored the green LED will no longer flash (See Table 8.1).
Table 8.1
Memory Usage.

<table>
<thead>
<tr>
<th>8 flashes</th>
<th>Empty</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 flashes</td>
<td>1/8 used</td>
</tr>
<tr>
<td>6 flashes</td>
<td>¼ used</td>
</tr>
<tr>
<td>5 flashes</td>
<td>3/8 used</td>
</tr>
<tr>
<td>4 flashes</td>
<td>½ used</td>
</tr>
<tr>
<td>3 flashes</td>
<td>5/8 used</td>
</tr>
<tr>
<td>2 flashes</td>
<td>¾ used</td>
</tr>
<tr>
<td>1 flashes</td>
<td>7/8 used</td>
</tr>
<tr>
<td>0 flashes</td>
<td>Full</td>
</tr>
</tbody>
</table>

The red LED indicates data transfer when connected to a computer.

When connected to a speed measurement device, the red LED on the EZ Stat™ blinks each time an event is recorded.

9. **EZ Stat™ Software**

9.1 **System Requirements**
- Microsoft Windows® 7, 8, or 10
- Microsoft Office Excel® 2000 or newer
- USB Port
- Minimum Screen Resolution 800 x 600, 1024 x 768 for internal graphs

9.2 **Installation**

If you are not familiar with installing software it is recommended that you contact your IT department for assistance. The following instructions uses Windows 7 as the example.

1. Insert the flash drive into the USB port of the computer. Windows will then display the "AutoPlay" screen as shown in Figure 9.2a. Make sure the "Open folder to view files using Windows Explorer" is selected. Next, click OK.
If the information screen is not automatically displayed, click on the WINDOWS EXPLORER icon at the bottom of the screen and then proceed down the folders tree until you locate the drive letter that has been assigned to the flash drive. Using the left mouse, click on the drive letter. The files on the flash drive will be displayed.

2. The following screen shows the folders that are on the flash drive. Double click on "Start" to run the Product utility.
3. Click on the "Software" button as shown in Figure 9.2c.

4. Click on and install both the "EZ STAT SOFTWARE" and the "EZ STAT USB DRIVER".

5. Installation is now complete and you are ready to exit the Product utility and view, download data and run reports on any information stored on the EZ Stat™ Data Logger.

9.3 Logger Setup
The EZ Stat™ program will automatically detect the EZ Stat™ module and assign a port providing the module is plugged into the computer's USB port. Follow the steps as outlined in 9.4.
9.4 Connection

1. Plug the EZ Stat™ into the computer's USB port.

2. Run the EZ Stat™ software by clicking on the EZ Stat™ icon on the desktop.

Once opened, if you get a "No COM available" error as shown in Figure 9.4a give the program a few seconds to locate the port. If it does not detect the port even after waiting then exit the EZ Stat™ program, make sure the EZ Stat™ module is plugged completely into the computer's USB port and open the EZ Stat™ program again. Once the port has been detected set the "SPEED".

3. **SPEED**: Set the speed to "Normal". If you have a hard time retrieving data from the unit, set the speed to "SLOW" or one of the other available settings.

Once the speed setting has been made then:

4 **CONNECT**: Connect to the logger device. If the USB driver has been installed as described in Section 9.2, the EZ Stat™ software screen will now display any information stored on the EZ Stat™. (Once you have completed downloading and analyzing the EZ Stat™ information, the software can be closed by pressing the Disconnect button.)
5. **DISCONNECT**: Use Disconnect when you are finished downloading the information from the logger device.
9.5 **Settings**
The following settings should be checked and changed as needed:

- **SET LOGGER TIME FROM PC CLOCK**: Sets the EZ Stat™ module's time to the PC’s time. This sets the EZ Stat's™ internal clock so that future data recorded reflects the actual time of day the event was logged. This is useful if the data logger battery should need to be replaced or your state observes daylight savings time.

- **USING ONSITE SERIES**: The EZ Stat™ can be used on a range of Decatur products. These products export data at different baud rates. Use this section for trailers or Decatur’s SI units.

- **USING DECATURE RADAR**: Use this selection when using the EZ Stat™ with radar guns for readings.

- **CLEAR THE LOG**: This selection erases all data from the logger device.

9.6 **Log File**

- **SAVE TO FILE WHEN READING**: If checked, this function saves the information from the logger to the file listed in box “filename.” If you forget to check this box before reading from the logger device, you can go to the File Menu — Save Logged File, to save to your hard drive.

![Figure 9.6](image)

*Check box to save file.*
• **READ LOG FILE FROM UNIT**: Read the log entries from the data logger if connected.

• **READ LOG FILE FROM FILE**: Open an old log file.

• **FILENAME**: Shows the name and location of the current file.

• **COMMENTS**: Add comments to the log file here. Comments previously saved to the log file will be read and displayed.

• **PROGRESS**: Shows the progress of reading data from the logger unit or file.

### 9.7 Generate Report

This window will appear after data has been loaded from a logger unit or file.

![Generate Report Window](image)

**Figure 9.7**

Generate Report Window.

• **REPORT START/FINISH**: Set the Hour, Month, Day and Year for your report. Based on the information from the loaded data, the start and finish settings will be set for you.
• Changing the Year or Month will alter the number of days and may reset this value.

• **TIME INTERVAL**: Read data at that interval, **Example**: A setting of 15 minutes between 4:00 and 5:00 would have 4 Points of data (4:00-4:14, 4:15-4:29, 4:30-4:44, 4:45-4:59), 30 minutes would have 2, etc.

• **HOUR FORMAT**: 12 or 24 hour clock.

• **MEASUREMENT**: mph or km/h.

• **SPEED INTERVAL**: The range between speeds (5, 10, or 20). At 5 the range goes from 16-20, 21-25, 26-30, etc., at 10, 16-25, 26-36, etc.

• **INTERVAL MIN**: The lowest point at which intervals start. **Example**: If the MINIMUM SPEED is 0, and the INTERVAL MIN is 30, the first speed range is 0-30. If MINIMUM SPEED is 20 and the INTERVAL MIN is 30, the first speed range would be 20-30.

• **INTERVAL MAX**: The highest speed for your interval stats. If your Interval Max is 80, then your last category will be 80+.

• **POSTED LIMIT**: The posted speed limit.

• **MINIMUM SPEED**: Any speed below this number will not be counted in the survey.

• **MAXIMUM SPEED**: Any speed above this number will not be counted in the survey.

• **DATE FORMAT**: This option allows you to change the format of the displayed dates. There are three available options.

• **FIXED REPORT STYLE #1**: This report style sets the Interval Min and Interval Max based on your Posted Limit so that there are 3 categories: those below the speed limit, those within 5 of the speed limit, and those above the speed limit. This report style does not generate a graph.
• **EXPORT DATA: > EXCEL**: Exports the raw data to Microsoft Excel®. It will also generate a report and summary based on the selections in Excel.

• **CHART SIZE**: Based on your computer settings, this allows for various sizes of graphs for printing.

### 9.8 Generate Charts

#### 9.8.1 Count vs. Speed (*Bar Graph*):

Shows how many vehicles passed the logger and at what speed, best used for showing speed patterns over large date ranges.

• **GRAPH**: Generates the graph.

• **3D**: If checked, the graph shows 3-D cylinders.

• **SHOW POSTED LIMIT**: If checked, a line shows the posted limit.

![Count vs. Speed Graph](image)

*Figure 9.8.1 Count vs. Speed (3D)*
9.8.2 Count vs. Time *(Line Graph)*

Shows the number of vehicles passing the logger at a particular time, grouped by their speed. This graph is more suitable for fewer speed ranges and smaller date ranges. We recommend setting your Time Interval to 24 hours if using this to graph for more than one day.

- **GRAPH**: Generates the graph.
- **3D**: If checked the graphs shows 3-D lines.

![Figure 9.8.2](image_url)

*Figure 9.8.2*  
Count vs. Time.
9.8.3 Count vs. Hour (Bar Graph)
Shows speeders vs. time of day. For best results we recommend no more than an eight hour window.
- **GRAPH**: Generates the graph.
- **3D**: If checked the graphs shows 3D bars or pyramids.
- **SHOW SPEEDERS**: If checked, there will be two bars, one for speeders and one for those driving legally. If not checked then there will be just one bar with the count.
- **SPEEDS STACKED**: If checked and Show Speeders is checked, then the speeds will be stacked on top of each other to give both a total count and visually show the number of speeders.
- **START/ FINISH**: The time of day to start/finish.

![Figure 9.8.3](image)

9.8.4 Traffic Speed Survey (Any Graph)
- **PRINT**: Prints the “EZ Stat Traffic Speed Survey” window.
- **COPY TO CLIPBOARD**: Copy the “EZ Stat Traffic Speed Survey”
10. Frequently Asked Questions (FAQ)

Q. How long will the battery hold a charge?
A. The 12-volt SLA battery will operate for up to two full days (applications vary). The battery’s smart charger, charges the battery. When the battery is fully charged, the smart charger, which monitors the battery voltage, goes into float mode. In this mode, the battery stays charged and does not overcharge.

Q. What is the detection range of the radar antenna?
A. The radar’s beam width is 12°. The antenna can detect speeds ranging from 5 to 150 mph at up to 1500 feet.
11. Service

11.1 Warranty

ONE-YEAR RADAR WARRANTY

Decatur Electronics, Inc. guarantees the SpeedSpy™ to be free from defects in workmanship and material and to operate within specifications for a period of one year. During this period, Decatur Electronics will repair or replace, at its option, any component, found to be defective, without cost to the owner providing you return the unit to a Decatur authorized warranty service center.

The full warranty on parts and workmanship does not include normal wear and tear, crushing, dropping, fire, impact, immersion, damage from attempted repair, modifications by unauthorized service agents, or improper voltage.

For repairs, simply return the SpeedSpy™ directly to a Decatur authorized service center.

ONE-YEAR WARRANTY EXCEPTION

If you purchased the SpeedSpy™ under a special buying program, such as a state purchase contract, etc., the above warranty may not apply. Please refer to the buying program contract for the appropriate warranty terms or contact Decatur Electronics.
11.2 Service Return Procedure

If you have questions, want a quick problem diagnosis, or need to return your unit or a component from your unit:

- Call Decatur Electronics by phoning 800.428.4315 and ask to speak with a Customer Service Representative.
- Explain to the Customer Service Representative the problem you are experiencing.
- Based on the information that you provide, the Customer Service Representative may be able to assist you or you may need to be referred to one of our Service Providers.

On warranty items Decatur Electronics will pay the freight (up to $10 U.S.) for shipping the system from the Service Provider to the customer. Please note that for any shipping charges above the initial $10 (if you want the package shipped express or next day air) there will be an additional charge.

If you are referred to a Service Provider and your product is under warranty then once your product has been received, the Service Provider will investigate the problem. Once they have diagnosed the problem they will repair the product and return it to you.

If you are referred to a Service Provider and your unit is not under warranty then we recommend that you discuss the problem you are experiencing with the Service Provider and determine if an estimate is needed. Once your product has been received, the Service Provider will investigate the problem and you will be sent an estimate of cost, prior to any repair work being performed. After receiving the estimate, you can choose from the following options:

1. Approve the estimate and proceed with repair.
2. Decline the estimate, and pay an estimate fee and return shipping.
3. Discuss other options with the Service Provider.
If your product is under warranty it will automatically be repaired and sent back to you.

12. Care, Cleaning, and Storage

- Avoid spilling food, beverages, and other liquids and substances inside the SpeedSpy™ device.

- When you are not using or transporting the device, store it in its original packaging.

- To clean the SpeedSpy™, dust it with a soft clean cloth, which is free of cleaning solutions.
13. How to Order Additional Products

You can order upgrades (when available) to the SpeedSpy™ and the EZ Stat™ from Decatur Electronics as well as a replacement CD. To see product descriptions or to order products, visit the Decatur Electronics website at www.DecaturElectronics.com or contact the Decatur Electronics sales office at 800.428.4315.

Replacement items

- Battery Charger S702-39
- Universal Clamp Kit P805-1
- SpeedSpy™ Mounting Plate S785-1
- Padlock P075-4
- EZ Stat™ Data Logger (Logger Only) S792-620U-0
- EZ Stat™ Software CD S792-622-0
www.DecaturElectronics.com
800.428.4315