

## Advanced In-Radar Statistics



In-Radar Advanced Stats In Use

- *Houston In-Radar Advanced Statistics does not suffer from usual problems causing inaccuracy in traditional systems*
- *Achieves accuracy in the 90+% range in many installations*
- *In-Radar stats also saves battery power compared to add-on boards*
- *Highly interactive & full featured Windows Statistics Analyzer is also available*
- *6 out of the top 8 radar speed sign manufacturers in US are now using Houston Radars!*



In-Radar Advanced Stats In Use

Many radar based speed signs are offered with a so-called “statistics package” option. However in most cases, it is implemented in a simple logic in the display software that monitors the speed sent out by the radar. It then calculates the 85<sup>th</sup> percentile speed, average speed, vehicle count etc.

### Problems With Current Implementations

Due to the inherent limitations of this method most of these devices fail to achieve the necessary count accuracy and cannot compute 85<sup>th</sup> percentile with any degree of confidence limiting their usefulness to the user.

The problem is easy to understand when one considers a common case where multiple vehicles are simultaneously present in the radar’s field of view. Most speed sign radars cannot even track multiple vehicles and even if they could, the display software receives speed information only about one vehicle at a time. Statistical data associated with other vehicles is lost. Weather conditions, installation effects, number of lanes, traffic density and other effects that may affect vehicle tracking time exacerbate this problem even further.

In tests conducted by various Houston Radar customers, the accuracy of competing products were no better than 60 percentage by vehicle counts and in some cases as low as 35 percentage in heavier traffic or difficult installations. Additionally, even if the algorithm is tuned or corrected (“fudge factor”) for a set of known conditions associated with a particular installation, it will not translate well to another location.

### The Houston Radar In-Radar Advanced Statistics Solution

To address this problem Houston Radar has developed an innovative, accurate and cost effective solution: **In-Radar Advanced Statistics**. In-Radar traffic statistics are accumulated *inside* our radar during normal operation. Implementing traffic statistics inside the radar has many inherent advantages:

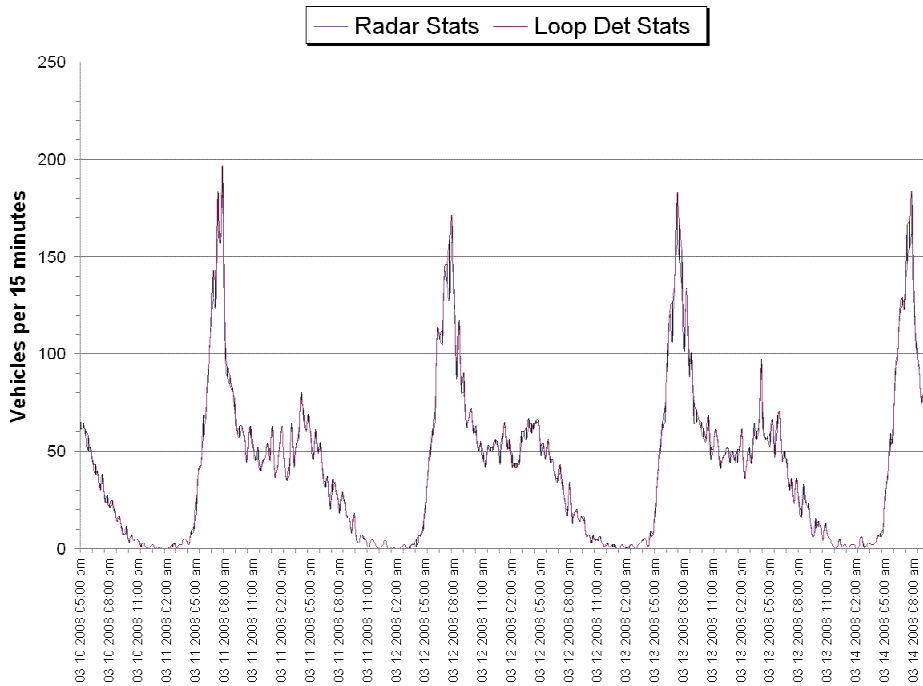
- Radar tracks multiple vehicles at different speeds simultaneously and hence does not miss vehicles visible to it
- Radar access to all return signal parameters of the target vehicles processed by proprietary software inside radar makes full use of every bit of information present in reflected signal and dramatically improves counting accuracy
- No add-on boards keeps total system power usage down and reliability up
- Advanced Statistics are software “key enabled” allowing turn-on in the field or after the radars have shipped to the sign manufacturer
- Easy Bluetooth wireless access using standard Bluetooth modules you buy from your source. Now enable statistics collection wirelessly!

**The Houston In-Radar Advanced Statistics Results Shine**

- *Houston Radar In-Radar Advanced Stats have repeatedly shown to be accurate in the 90%+ range\**

The cumulative effect of these facilities and our advanced processing logic inside the radar is that the In-Radar Advanced Statistics significantly outperforms other available solutions in the real world.

**Houston Radar In-Radar Advanced Stats vs. In Road Loop Detector**



*In-Radar Advanced Statistics accurately tracks loop sensor counts through rush hour as well as nighttime traffic and all hours in between- day after day!*

In-Radar Statistics remain highly accurate even compared on a 15-minute basis vs. a loop counter!

**Real World Test Results Prove It!**

As evidenced in a real world test by a user in a real road installation shown above (and backed up by other testing in other locations) our statistics proved to be better than 90% accurate overall in counts and within 1 mph in the 85<sup>th</sup> percentile speed over days of installation. To make this feat even more impressive, the above data is presented compared in 15-minute interval basis against an embedded loop counter (above chart of an actual test result on the road pictured on top picture on the front page).



In-Radar Advanced Stats in use in two year CTRE study on dangerous road curves in the US

**Unbeatable Combination**

The Houston Radar DR500S and DR500C radars with their unmatched ultra-low power usage, performance and reliability when combined with innovative and breakthrough In-Radar Advanced Statistics are truly an unbeatable combination.

Due to this reason, Houston Radar has grown to be the new “industry standard” in traffic calming radars in the North American market and now supplies to most of the major traffic calming sign manufacturers.

*Photo 1 & data courtesy of Swarco Signelit. Photos 2 & 3 courtesy of Traffic Logix.*

*\*Disclaimer: Accuracy is affected by installation and traffic conditions and data shown here may not be representative for all conditions. Contact Houston Radar for recommended use.*