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Application Note

Armadillo Tracker Classification Explained

Abstract

The Houston Radar Armadillo Tracker is a state of the art non-intrusive bi-directional data collection device. It features the lowest power consumption and most accurate speed radar in the market integrated into a small and easy to use form factor. The ultra-low power usage allows the Armadillo to achieve over two weeks of continuous data collection in a device that weighs only 3lb and measures 4.8”x6.8”x5.3”. Proprietary signal processing algorithms provide for accurate bidirectional counting while maintaining speed measurement accuracy normally found only in police radars and lidars.

Vehicle Classification

The Armadillo Tracker implements a size based vehicle classification system that translates to the following approximate vehicle types and lengths:

Armadillo Vehicle Class Size	Approximate Length	Example Vehicle Types	FHWA Class
Small	<14 feet (<4m)	Motorcycles, “Smart” car	1
Medium	~14 feet to ~20 feet (4m to 6m)	All sedans, minivans, pickup trucks etc.	2 & 3
Large	> ~20 feet (>6m)	Delivery vans, busses, dump trucks and 18-wheelers	4 through 12

Frequently Asked Questions and Answers

Q. Are the Armadillo Tracker vehicle classes fixed?

A. Yes, the vehicle class types are preset from the factory and cannot be modified by the user.

Q. Why can’t the Armadillo classify directly by length?

A. The low power radar technology used in the Armadillo results in excellent battery life and cost of the unit. However, it does not allow direct length measurement. Hence vehicle class has to be inferred by the radar software from a variety of target parameters.



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This interpretation results in meaningful information for 3 class sizes which roughly correspond to the vehicle lengths listed above.

Q. What is the accuracy of classification?

A. Independent testing has shown the overall classification accuracy of the Armadillo for a mix of city or country road traffic is about 90%. This will hold true as long as truck (“Large”) traffic is less than approximately 15 to 20% of the total traffic on the road. The above test report should be available publically in the near future (release date is not under our control).

The Armadillo is not recommended for roads where the traffic consists primarily of buses or large trucks.