Institute for Police Technology and Management

CERTIFICATE OF ACCURACY

The Stalker Radar **Speed Sensor System** has been subjected to speed accuracy testing in the laboratory, as outlined in the Florida Administrative Code Chapter 15B-2, Speed Measuring Devices, Rule 15B-2.009 (3b) speed measurement certification test requirements. It has also been subjected to speed accuracy testing in the field as stipulated by the International Association of Chiefs of Police, in the document, Speed-Measuring Device Performance Specifications: Down-the-Road Radar Module, Rev. 6/04, Section 5.15.3, Speed Accuracy: Field Operation Tests.

The Stalker Radar **Speed Sensor System** accurately measured and displayed speed readings from 5 to 200 mph (+1/-2 mph).

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TESTING PROTOCOL

Objective:

This document outlines the procedure to be followed in gathering speed measurement data from the Stalker Speed Sensor system in order to evaluate the accuracy of the system. It will be tested in the IPTM radar/lidar laboratory using a speed simulator approved by the IACP. It will be field tested comparing the speed registered by the Speed Sensor system with the speed registered by two other radar device models from different manufacturers which have been tested and approved for accuracy by the International Association of Chiefs of Police (IACP).

Equipment:

Stalker Speed Sensor system
Radars: MPH Python III, Decatur's Genesis II select and Stalker II MDR
Laptop computer
4 Traffic Cones
LTI 20/20 lidar
Stopwatch

Field Test:

The procedure to be followed in the field test has been developed by the IACP for testing radars for accuracy in speed measurement.

The target vehicle will travel over a ¼ mile (1320 ft.) test range, marked at each end by a traffic cone on either side of the road. It will be timed over this distance with a stopwatch to calculate the true speed of the target vehicle. The target vehicle will make 4 runs each at speeds of 30, 50 and 65 mph. The Speed Sensor and two additional radars will be set up and activated to track the target vehicle. The speeds of each speed measurement device will be observed and recorded.

Field testing will be conducted on a straight, level, paved, two lane road which experiences only light traffic.

The laptop computer, Speed Sensor system and an additional radar will be set up alongside the road, simulating an actual usage situation. The second radar will be deployed in the target vehicle, displaying the patrol speed.

Laboratory Test:

The Speed Sensor antenna will be placed in the anechoic chamber. Audio frequencies will be generated by an HP function generator to correlate with speeds over the entire range of the Speed Sensor in 10 mph increments. Speeds and corresponding frequencies will be recorded.

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April 30, 2006

S3 TEST REPORT

On or about April 26, a Stalker Radar project manager contacted the IPTM Radar Lab asking that we test their Stalker Radar S3 Speed Sensor System, stationary, for accuracy in speed measurement. The IPTM Radar Lab technical director and lab technician drew up a plan to test this system in the laboratory for speed measurement accuracy according to protocol described in the Florida Administrative Code Chapter 15B-2, Speed Measuring Devices, Rule 15B-2.009(3b). The system would also be tested in the field according to protocol utilized by the International Association Chiefs of Police and described in the document, Speed-Measuring Device Performance Specifications: Down-the-Road Radar Module, Rev. 6/04, Section 5.15.3: Speed Accuracy: Field Operation Tests.

The Speed Sensor System was received at the IPTM Radar Laboratory on April 28. The system included a Ka band antenna, SN ST001355, an S3 Power/Programming Box, and a CD containing Speed Sensor Software, Developers Resource Kit 200-0707-00 Rev. B, and appropriate cables. The software was loaded onto a Dell D800 laptop computer. Testing was done on April 29 and 30.

The laboratory test was conducted at the IPTM radar lab at the University of North Florida. The Speed Sensor antenna was placed in the anechoic chamber and a simulated speed was established with an HP function generator. The Speed Sensor system was very accurate in displaying the same speed in the readout as that which was simulated over the range of 2 to 209 mph. The results are detailed in the chart, **Laboratory Speed Accuracy Test**.

The field test was conducted at Cecil Field, west of Jacksonville, Florida, on a two lane paved road which has a restricted traffic flow. The quarter mile range was verified with a lidar unit. With the Speed Sensor system and a traditional traffic radar set up about 50 feet past the quarter mile track, the target vehicle in which a second radar was installed traversed the range A stopwatch was used to measure the time elapsed on each run. A series of runs was conducted at 5, 20, 35, 50 and 65 mph. The data collected is detailed in the chart, **Speed Accuracy Test**. The target vehicle's speed varied slightly from the objective speeds over the course of the quarter mile. The stationary radar and Speed System registered the identical speeds except for a rare momentary flicker when one would vary from the other by 1 mph for perhaps a second. The true vehicle speed is calculated and displayed in the chart, **Field Test Summary**. The true vehicle speed varies from the averaged readout seeds by less than +1/-2 mph.

The data collected in the laboratory and field tests show that the Stalker Radar Speed Sensor system is accurate to within +1/-2 mph.

Respectfully submitted,

Jay Huebner, Technical Director

Jeanne Huebner, technician