



STL 2016

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JUL 26 2016

MUNICIPAL COURT

CERTIFICATION CONCERNING DESIGN AND CONSTRUCTION OF ELECTRONIC SPEED MEASURING DEVICES

I, Jorge Marciano, do certify under penalty of perjury, under the laws of the State of Washington, in the County of Pierce, that the following is true and correct:

I am employed with Pierce County as a Communications Systems Technician, Speed Measuring Device (SMD) Specialist, and assigned as the custodian of the SMD records. I have been employed in this capacity since Sep 10, 2007. Part of my duties include the maintenance and repair of all types of electronic radar and laser speed measuring devices (SMD's) used by the Steilacoom Police Department.

The Steilacoom Police Department currently uses the following SMD's:

SMD TYPE:	MODEL:	MANUFACTURE:	SERIAL NUMBER:	TUNING FORKS:
Radar	Genesis VPD	Decatur Electronics	03971	147346 33MPH / 147430 77MPH
Radar	Genesis VPD	Decatur Electronics	04025	147326 33MPH / 147436 77MPH
Radar	Genesis II Directional	Decatur Electronics	G2S-22097	201412 35MPH / 201492 65MPH
Radar	Genesis II Directional	Decatur Electronics	G2S-22432	204702 35MPH / 024778 65MPH
Radar	Genesis II Select	Decatur Electronics	G2S-26208	222754 35MPH / 223309 65MPH
Radar	Python	MPH Industries	PYT380000562	226946 35MPH / 237221 65MPH
Radar	Python	MPH Industries	PYT546000274	20669 35MPH / 19905 65MPH
Radar	Python	MPH Industries	PYT546004626	292667 35MPH / 293093 65MPH
Radar	Python	MPH Industries	PYT546004627	55988 35MPH / 36347 65MPH
Radar	Python	MPH Industries	PYT546004781	294073 35MPH / 294581 65MPH
Radar	Python	MPH Industries	PYT546006652	308554 35MPH / 308340 65MPH
Radar	Python	MPH Industries	PYT546006653	416764 35MPH / 416738 65MPH
Radar	Python	MPH Industries	PYT546007663	308539 35MPH / 308039 65MPH
Laser	SpeedLaser	Laser Atlanta	500312	NA
Laser	TruSpeed	Laser Technology	TJ004601	NA

I have the following qualifications with respect to the above stated SMD's:

I have seven years military experience as a communications specialist in the maintenance and repair of electronics equipment and eight years with Pierce County repairing, maintaining, and certifying SMD's for cities and counties throughout the state. I received training from the following manufacturers as well as from the Pierce County Engineer. On Dec 13, 2007, I successfully completed the Decatur Electronics course in repair and service of Doppler traffic radar and on Mar 13, 2008, I successfully completed the MPH Industries course in repair and service of Doppler traffic radar. Further, on Jan 14, 2009, I successfully completed the requirements for Kustom Signals certification in operation and maintenance of Doppler traffic radar and traffic laser and on Sep 3, 2009, I successfully completed the requirements for Applied Concepts certification in operation and maintenance of Doppler traffic radar and traffic laser.

The Pierce County Radio Communications Division maintains manuals for all of the above listed SMD's. I am personally familiar with those manuals and know how each of the SMD's are designed and operated. From Mar 27, 2008 to Jul 11, 2016, I performed all of the SMD testing. The units are evaluated and certified to meet or exceed existing performance standards.



The Pierce County Radio Communications Division maintains a testing and certification program for the Steilacoom Police Department wherein each SMD is inspected and checked every 24 months by the following means:

Radar SMD's utilize the Doppler effect to measure speed. Testing consists of using a precision signal generator to inject a signal into the SMD to simulate speeds of 35mph and 65mph for the stationary/moving radars. It also includes injection of a signal to simulate 35mph for stationary radar only. The signal must cause the SMD to display the exact speed, ± 1 mile per hour, in order to be certified for accuracy. I then measure the frequency of the tuning fork(s) assigned to each SMD to insure that they are within ± 5Hz tolerance. I issue a certificate of accuracy for both the SMD and the tuning fork(s). The original certificates are issued to the Steilacoom Police Department who in turn issues a copy to the court. I also retain a copy for my records along with the maintenance and service records for each SMD serviced.

Laser SMD's measure speed based on the velocity of light and a precision time base reference. Testing consists of three accuracy certification checks (1) Internal Self Test (2) Pulse Check to include; pulse width, power output, pulse repetition rate, and double pulse (3) and a Distance Check to include; sight alignment, vertical, and horizontal beam width ≥ 200 feet. The checks insure that the SMD is within tolerance and functioning properly. I then issue a certificate of accuracy for each SMD. The original certificates are issued to the Steilacoom Police Department who in turn issues a copy to the Court. I also retain a copy for my records along with the maintenance and service records for each SMD serviced.

All radar SMD's operated by the Steilacoom Police Department directly measure by digital message from the Doppler signal. They do not reconstitute the Doppler signal in any way, including the use of devices such as a phase lock loop (PLL), before the speed is measured.

Based upon my education, training and experience, and my knowledge of the radar SMD's listed above, it is my opinion that each of these electronic pieces of equipment is so designed and constructed as to accurately employ the Doppler effect in such a manner that it will give accurate measurements of the speed of motor vehicles when properly calibrated and operated by a trained operator or, in the case of laser SMD's, each of these pieces of equipment is so designed and constructed as to accurately employ measurement techniques based on the velocity of light in such a manner that it will give accurate measurements of the speed of motor vehicles when properly calibrated and operated by a trained operator.

I certify under the penalty of perjury, under the laws of the State of Washington, that the foregoing is true and correct.

Jorge Marciano

Jorge Marciano
Lead Communications Systems Technician/
Speed Measuring Device Specialist

Signed and dated at Tacoma, Washington July 11, 2016

SUBSCRIBED AND SWORN TO BEFORE ME THIS 11th DAY OF July, 2016.

Kellie Pybas
Notary Public in and for the State of Washington, County of Pierce.

Commission expires 03.20.2017





Steilacoom Police Department Speed Measuring Device (SMD) Inventory

	MODEL:	SERIAL #:	CERTIFICATION DATE:	UNIT ASSIGNED:	SMD TYPE:	
1	Genesis VPD	03971	18-Apr-16	Unit #1 Handheld	Radar	
2	Genesis VPD	04025	18-Apr-16	Unit #2 Handheld	Radar	
3	Genesis II Directional	G2S-22097	24-Jun-16	P1239	Radar	
4	Genesis II Directional	G2S-22432	18-Apr-16	P1241	Radar	
5	Genesis II Select	G2S-26208	19-Apr-16	P1242	Radar	
6	MPH Python	PYT380000562	19-Apr-16	P1237	Radar	
7	MPH Python	PYT546000274	22-Apr-16	P1236	Radar	
8	MPH Python	PYT546004626	22-Apr-16	P1240	Radar	
9	MPH Python	PYT546004627	19-Apr-16	P1228	Radar	
10	MPH Python	PYT546004781	18-Apr-16	P1232	Radar	
11	MPH Python	PYT546006652	22-Apr-16	P1229	Radar	
12	MPH Python	PYT546006653	22-Apr-16	P1238	Radar	
13	MPH Python	PYT546007663	22-Apr-16	P1301	Radar	
14	TruSpeed	TJ004601	15-Apr-16	Handheld	Laser	



Pierce County
Radio Communications

1422 112th Street East
Tacoma, Washington 98445
(253) 798-7147

CERTIFICATE OF CALIBRATION & ACCURACY

I, Jorge Marciano, do certify under the penalty of perjury, under the laws of the State of Washington, in the County of Pierce, that all applicable tests and measurements were made on the following Doppler Traffic Radar equipment:

Manufacturer:	<u>Decatur Electronics</u>	Date Certified:	<u>06/24/2016</u>
Model:	<u>Genesis II Directional</u>	Agency:	<u>Steilacoom PD</u>
Serial Number:	<u>G2S-22097</u>		
Operating Frequency Band:	<u>K</u>		

The aforesaid radar meets and exceeds all manufacturer's specifications.

TUNING FORK

I, Jorge Marciano, do certify under the penalty of perjury, under the laws of the State of Washington, in the County of Pierce, that all applicable tests and measurements were made on the following Doppler Radar Tuning Forks:

Tuning Fork Serial No.:	<u>201412</u>	Date Certified:	<u>06/24/2016</u>
Oscillation (Cycles per Second):	<u>2536</u>	Agency:	<u>Steilacoom PD</u>
Operating Frequency Band:	<u>K</u>		
MPH:	<u>35</u>		

When operated between the temperature of -22F to +140F no correction is required.

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Tuning Fork Serial No.:	<u>201492</u>	Date Certified:	<u>06/24/2016</u>
Oscillation (Cycles per Second):	<u>4726</u>	Agency:	<u>Steilacoom PD</u>
Operating Frequency Band:	<u>K</u>		
MPH:	<u>65</u>		

When operated between the temperature of -22F to +140F no correction is required.

I certify under penalty of perjury, under the laws of the State of Washington, that the above statements are true and correct.

Dated and Signed at Tacoma, Washington 6/24/16 Jorge Marciano
DATED SIGNED

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MUNICIPAL COURT OFFICER COPY

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Radio Communications**
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Dated and Signed at Tacoma, Washington 6/24/16 [Signature]
DATED SIGNED