KIRKLAND MUNICIPAL COURT

#### CERTIFICATE CONCERNING DESIGN AND CONSTRUCTION OF ELECTRONIC SPEED MEASURING DEVICES

I, Nathan Dumler, do certify under penalty of the laws of the State of Washington that the following is true and correct:

I have been employed as a technician by American Traffic Solutions for 3 years. I became a speed validation technician in 2018 and have over 1000 hours performing speed validation tests. I am nationally certified as a RADAR and LIDAR operator. The City of Kirkland currently uses the AutoPatrol<sup>TM</sup> 3D radar fixed speed safety camera system, an electronic speed measuring device provided through a contract with American Traffic Solutions, Inc. ("ATS"). Part of my duties include monitoring regular testing of the AutoPatrol 3D radar fixed speed safety camera systems used by the City of Kirkland.

ATS contracted with the City of Kirkland to provide an Automated Speed Enforcement ("ASE") system designed to record the speed of a vehicle and obtain photographs or other recorded images of the vehicle and the vehicle's registration plate while the vehicle is traveling in excess of speed limits in certain safety zones within posted limits.

The ASE program includes the use of the AutoPatrol 3D radar fixed speed safety camera systems at the following locations within the City of Kirkland:

Location Code	Location Description	Lanes Monitored
KRKF001	NB 132nd Ave NE @ Muir Elementary/Kamiakin Middle	1
KRKF002	SB 132 <sup>nd</sup> Ave NE @ Muir Elementary/Kamiakin Middle	1
KRKF003	EB 80 <sup>th</sup> St @ Rose Hill Elementary	1
KRKF004	WB 80th St @ Rose Hill Elementary	1

The AutoPatrol 3D radar fixed speed safety camera system operates by measuring vehicle speed, as well as position relative to the radar to calculate and differentiate multiple vehicles in the radar beam. The speed of a moving vehicle is measured by Doppler radar. Doppler radar is a generally accepted technology used for measuring speed. The AutoPatrol 3D radar technology is used throughout the US and Europe as well as other countries and is approved by the Swiss national metrology institute- METAS.

The AutoPatrol 3D radar fixed speed safety camera system uses a tracking radar sensor for measuring vehicle speeds and detecting speed violations. The AutoPatrol 3D radar is aligned at a fixed angle across the road. The AutoPatrol 3D radar emits a horizontal beam over the road surface as represented by the illustration below. The tracking radar can simultaneously detect multiple vehicles and measure their speed, distance, angle and movement within the radar beam. The radar tracks multiple vehicles by reconstructing vehicle movement from the measured object speed, angle and distance values. If a vehicle passes a defined trigger line, the radar outputs the vehicle's speed and lane information. The camera connected to the tracking radar uses this information to determine if there is a speed violation and to capture photographs showing the measured speed and lane on the databar of the captured images.

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The tracking radar utilizes the Doppler Effect for speed determination. If an electromagnetic wave is emitted at a moving object, then the wave is reflected back from the moving object. The frequency of the wave received back by the radar shifts based on the speed of the moving object and its direction of travel. The tracking radar continuously determines this frequency shift of each object to calculate the object's speed. The tracking radar consists of two receiving antennas integrated into a single radar sensor. This configuration allows the radar to measure the distance and angle of the vehicle relative to the position of the radar sensor. Illustration A and B show the measurement principle in simplified form. The radar sensor emits a radar beam (illustration A). The radar beam is reflected by the vehicle (illustration B). The two receivers receive the reflected radar beam. The radar sensor evaluates the return frequency, as well as the phase difference of the reflected radar beam from both of the receivers. With the aid of these values the radar sensor calculates the vehicle position.



Prior to operation each day, the system performs a system self-test. This self-test performs an electronic tuning fork test to produce a specific frequency and returns an associated speed value. Only if the return value meets the acceptance criteria to show that the system is operating correctly will the system enter measure mode. Unless a self-test is successful, the system will not enter measure mode and no violations will be captured. Additional information stored as metadata within each image includes coordinates of the vehicle position at the time of capture. This information is extracted and utilized through a secondary speed verification process to provide yet another means to validate offender speed and position based on the two images obtained and image analytics. In addition to the internal system checks and the manufacturer calibration certification, the 3D radar system is subject to routine and independent calibration check of the speeds produced by the system at least annually by a qualified technician.

Each day the computer which controls the fixed speed safety camera system is rebooted. The reboot is initiated each day and each time the computer is rebooted an internal check is performed on all operations of each fixed speed safety camera system, including the clocks, sensors, camera and speed calculating hardware and software, in order to verify that all operations are functioning correctly. When the internal check detects a problem with one of the operations on a given fixed speed safety camera system, then that particular fixed

speed safety camera system is inactivated and a request for service is relayed to ATS support personnel. This means that violations cannot be issued until any internal problem is fixed.

Speed validation tests are regularly performed on each installed and operable AutoPatrol 3D radar fixed speed safety camera system. The test is conducted by having a LIDAR Operator obtain true measurements of up to five vehicles per lane in the ascending and/or descending direction. The speed of the vehicle is captured by the LIDAR Operator and then relayed via cellular to an ATS Technician. The ATS Technician then compares the vehicle speed measured by the AutoPatrol 3D radar fixed speed safety camera system to the speed measured by the LIDAR Operator to ensure the accuracy of the AutoPatrol 3D radar fixed speed safety camera system. ATS maintains the results of each test in a Validation Report. The speed validation for each system was performed on the following date and the systems at each location were found to be in proper working order:

Location Code	Location Description	Date of Test
KRKF001	NB 132 <sup>nd</sup> Ave NE @ Muir Elementary/Kamiakin Middle	3/22/2022
KRKF002	SB 132 <sup>nd</sup> Ave NE @ Muir Elementary/Kamiakin Middle	3/22/2022
KRKF003	EB 80 <sup>th</sup> St @ Rose Hill Elementary	3/22/2022
KRKF004	WB 80th St @ Rose Hill Elementary	3/22/2022

Preventative maintenance, including visual inspections, is regularly performed on the AutoPatrol 3D radar fixed speed safety camera systems. Preventative maintenance activities include: cleaning of the cameras and housing, general site inspection of environment and road conditions, inspection of poles, bases and enclosures, and inspection of system cables and connections. The location and date that preventative maintenance is performed is recorded in the Preventative Maintenance Log, which along with the Validation Report(s) referenced above, is attached hereto.

I am a custodian, or otherwise qualified witness, as to the attached records. I make this declaration based on personal knowledge, and if called and sworn as a witness, I could and would testify as set forth in the following paragraph.

Attached as Exhibits are: Exhibit A - Speed Validation Reports, Exhibit B - Preventative Maintenance Logs, and Exhibit C - Annual System Verification Certificate for all AutoPatrol 3D radar fixed speed safety camera systems installed and used by the City of Kirkland. All documents and materials included as Exhibit A, Exhibit B and Exhibit C are authentic and are what they purport to be, and accurately describe the matters set forth therein. All such records are business records in that they are: (1) records kept in the ordinary course of business; (2) created at or near the time of the transactions or events reflected therein by, or based on information from, a person with knowledge of the transaction or events; and (3) kept as part of a regular business activity.

Based upon my education, training, experience, and knowledge of the AutoPatrol 3D radar fixed speed safety camera system, it is my opinion that the system is so designed and constructed as to accurately employ measurement techniques based on a division of distance over time in such a manner that it will give accurate measurements of the speed of motor vehicles.

I, Nathan Dumler, certify (or declare) under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

Dated this <u>7th</u> day of <u>November</u>. 2022 in <u>Mesa, AZ</u>

nothon Dumlen

Nathan Dumler, Speed Validation Technician

,



## Speed Validation Report Client: Kirkland, WA

### Validation Date March 22<sup>nd</sup>, 2022

- KRKF001 NB 132<sup>nd</sup> Ave NE @ Muir Elementary/Kamiakin Middle
  Radar Serial Number: 590-112/61501
- KRKF002 SB 132<sup>nd</sup> Ave NE @ Muir Elementary/Kamiakin Middle
  - Radar Serial Number: 590-112/61531
- KRKF003 EB 80<sup>th</sup> St @ Rose Hill Elementary
  - o Radar Serial Number: 590-112/64005
- KRKF004 WB 80<sup>th</sup> St @ Rose Hill Elementary
  - o Radar Serial Number: 590-112/63276

#### Equipment:

Pro-Lite Plus Hand held Lidar Serial Number: LP05509 Certification Date: February 11<sup>th</sup>, 2022 Lidar Operator: Charles Goodrich RLC Operator: Rob Howard

A speed validation test was conducted for the sites listed above. The Lidar Operator, obtained true measurements of five vehicles per lane in the ascending and/or descending direction. Those speeds were obtained using a Kustom Signals Pro-Lite+ hand held Lidar instrument. The speed of the vehicle is captured by the Lidar Operator and then relayed via cellular to the RLC Technician. The RLC Technician is monitoring the vehicle speed at the Fixed Speed Camera system simultaneously to ensure the accuracy of the system. The speed validation tests performed on the above-listed dates confirmed the accuracy of the Fixed Speed Camera systems at each location.

I, Nathan Dumler, certify that the information contained in this report is true and accurate.

hon Sumler

Date: November 7<sup>th</sup>, 2022 Mesa, Arizona American Traffic Solutions Speed Integrity Team

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Certificate of A	chievement
Speed Integrity Has successfully completed the 16 Speed Integrity Technology	Technician 5 hour course for nician
This course encompasses all the necessary tasks required to Technician. Through this course each participant is required to written and practical examinations. In addition, this course cert	perform the duties as a Speed Integrity display the proper competency through tifies each participants as a Lidar operator.
Presented to: Charles Goodrich	
This Day: March 29, 2016	-t-M
ROLD Centraciate of Achievement VI 0  American Traffic Solutions. Inc. 7481 East On	Matthew Gioia Police Traffic Laser/Radar Instructor w Road, Scotsdaw, AZ 85260 Controls 4 SCLD-0013-04481
Certificate of A	chievement
Speed Integrity Stars successfully completed the course for	Technician or Speed Inegrity Technician
This course encompasses all the necessary tasks required to pr Through this course each participant is required to display the p Technology. In addition, this course certifies each participants a	erform the duties as a Speed Integrity Technician. proper competencies in Radar and Laser is a Lidar operator.
Presented to: Robert Howard	
This Day: October 22, 2020	Tel Yol
ATTS American Traffic Solutions	Tylor Yochim Radar Instructor
RDLD Certificate of Accessment V1.0 American Traffic Solutions, Inc. 7681 East Gray	Road, Scottedale, AZ 85260 Center and VCC 1922 AZ 87



## SOUTHERN CALIFORNIA RADAR/LASER CERTIFICATION LABORATORY

P.O. Box 2397 Borrego Springs, CA 92004 619-922-3504

I certify that the Kustom Pro-Lite+, Serial Number LP05509 was tested on February 11, 2022, and was calibrated to be within the Manufacturers specifications for accuracy.

- · This unit meets or exceeds the NHTSA standards for accuracy.
- · This unit is on the IACP Conforming Product List.
- · This units tests meet the standard set forth in cvc 40802().

		Test Result	S	
Test	Min	Max	Read	Pass
Visual/Function	-	-	Inspect	Yes
Range @ 100 ft.	5	+.5	100.0	Yes
Beam Width	-	.003	.0013	Yes
Acquisition Time @ 60MPH	-	.3Sec	.18Sec	Yes
35MPH	-2 MPH	+1MPH	35MPH	Yes
SOMPH	-2 MPH	+1MPH	SOMPH	Yes
65MPH	-2 MPH	+1MPH	65MPH	Yes
Pulse Width		<100nS	22.4nS	Yes
PRF	200	200	200	Yes
Sight Accuracy	N/A	003	.001	Yes
Oscillator Frequency	19.9980 MHz	20.0020 MHz	19.999 MHz	Yes
Beam Power Total/7mm	-	175uW 26uW	152 uW 15.5uW	Yes

(has one over the englybe tended for accounty on the MRUVA and Mandataware out ordered work experiment quark-affects domain and back transmission previous domainsements and the controller constraints. This care provid all applicable terits and a direct set of the quark soliton is the control spread of applicable terits and a direct set of the quark soliton is a set of the control spread of the spread set of the spread soliton is a set of the set of the spread set of the spread of uses of spread soliton.

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I certify (or declare) under the penalty of perjury under the laws of the state of California that the foregoing is true and correct.

Clk \_\_\_\_\_Date: February 11, 2022 By: William F. Dunable, MS/CIS, FCC Lic. # PG-11SD-2354

Serving Law Enforcement Since 1995 www.SoCalRadar-laserCertificationLab.com





## SELF-ACCURACY TEST Kustom Signals Pro-Lite+ Lidar Speed Measurement Tool

DATE:3/22/2022
Start of shift " <u>Self Diagnostic</u> test" time:10:00 AM
Start of shift Distance check:100'lidar
End of shift " <u>Self Diagnostic</u> test" time:11:15 AM
End of shift Distance check:100'
City and State:Kirkland, WA
Lidar Serial Number:LP05509
Certification Date:February 11 <sup>th</sup> , 2022
OPERATOR:Charles Goodrich

I, *Charles Goodrich*, certify that the Kustom Signals Pro-Lite+ Lidar speed measurement device was setup, tested, and operated in accordance with the manufactures specifications to include its self-diagnostic check.

Further, I certified that the self-check distance was completed and accurate.

Signature: Con Ma Date: 3/22/2022





Date			3/22/2022				
Time			10:55am				
Site ID			KRKF001				
Location			Kirkland, Washington				
Address			NB 132nd Ave NE @ Muir Elementary/Kamiakin Mid				
Posted Spee	ed Limit			20MP	H		
Trigger Spe	ed Limit			26MP	H		
Speed Type				Schoo	bl		
Lidar Techn	ician			Charles Go	odrich		
AutoPatrol Technician			Rob Howard				
Lidar Serial Number			LP05509				
Radar Serial	Radar Serial Number			590-112 / 61501			
Detection Ty	/pe		Autopatrol-Radar				
Measure Mo	ode Captur	e	Yes				
Photo enfor	cement sig	ins present	Yes				
Pass/ Fail				Pass	8		
Ascending o	or Descend	ing		Descend	ling		
City Lane	Times	Lidar Speeds	AP Speeds	Delta	Comments		
1	10.55.17	24	23	-1			
1	10.55.24	20	20	0			
1	10.55.59	23	23	0			
1	10.56.19	25	25	0			
1	10.56.29	22	22	0	A STATE OF THE STATE OF THE STATE		





Date			3/22/2022				
Time				10:58a	m		
Site ID			KRKF002				
Location				Kirkland,	, WA		
Address			SB 132nd Ave N	E @ Muir Elem	entary/Kamiakin Middle		
Posted Spee	ed Limit			20MP	н		
Trigger Spe	ed Limit			26MP	н		
Speed Type				Schoo	bl		
Lidar Techn	ician			Charles Go	odrich		
AutoPatrol Technician			Rob Howard				
Lidar Serial Number			LP05509				
Radar Serial	Radar Serial Number			590-112 / 61531			
Detection T	/pe		Autopatrol-Radar Yes Yes				
Measure Mo	ode Captur	e					
Photo enfor	cement sig	ins present					
Pass/ Fail	ss/ Fail			Pass			
Ascending o	or Descend	ing		Descend	ling		
City Lane	Times	Lidar Speeds	AP Speeds	Delta	Comments		
1	10.58.25	22	22	0			
1	10.28.27	23	23	0			
1	10.58.36	20	21	1			
1	10.58.44	22	21	-1			
1	10.58.49	33	33	0			





Date			3/22/2022					
Time			10:24am					
Site ID	Site ID			KRKF003				
Location			Ki	irkland, Was	shington			
Address			EB 80th	St @ Rose	Hill Elementary			
Posted Spee	ed Limit			20MP	H			
Trigger Spe	ed Limit			26MP	Н			
Speed Type				Schoo	bl			
Lidar Techni	ician			Charles Go	odrich			
AutoPatrol T	AutoPatrol Technician			Rob Howard				
Lidar Serial Number			LP05509					
Radar Serial	Number		590-113 / 64005					
Detection Ty	pe		Autopatrol-Radar					
Measure Mode Capture				Yes				
Photo enforcement signs present				Yes				
Pass/ Fail				Pass				
Ascending o	or Descend	ing		Descend	ling			
City Lane	Times	Lidar Speeds	AP Speeds	Delta	Comments			
1	10.24.53	23	22	-1				
1	10.24.57	24	23	-1				
1	10.25.15	13	13	0				
1	10.26.37	29	28	-1				
1	10.27.29	22	21	-1				





Date				3/22/20	22		
Time			10:29am				
Site ID			KRKF004				
Location			Ki	rkland, Was	shington		
Address			WB 80th	St @ Rose	Hill Elementary		
Posted Spee	ed Limit			20MP	Н		
Trigger Spe	ed Limit			26MP	Н		
Speed Type				Schoo	bl		
Lidar Techni	ician			Charles Go	odrich		
AutoPatrol Technician				Rob How	/ard		
Lidar Serial Number			LP05509				
Radar Serial	Radar Serial Number			590-112 / 63276			
Detection Ty	pe		Autopatrol-Radar Yes				
Measure Mo	de Captur	e					
Photo enfor	cement sig	ns present	Yes				
Pass/ Fail				Pass			
Ascending o	r Descend	ing		Descend	ling		
City Lane	Times	Lidar Speeds	AP Speeds	Delta	Comments		
1	10.29.33	25	26	1			
1	10.30.39	25	26	1			
1	10.32.56	24	24	0			
1	10.34.28	21	21	0			
1	10.34.37	24	24	0			



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## System Verification Test Report

**Prepared for: American Traffic Solutions** 

Model: RRS24F-ST3 (-40 to +70)

#### Serial Number: 590-113 / 63276

#### **Description: Radar Beam Characteristics**

То

#### Jenoptik Multi-Radar System Verification Procedure Base Frequency Test

Date of Issue: 8-5-21

On the behalf of the applicant:

American Traffic Solutions 1150 N Alma School Rd Mesa, AZ 85201

Prepared by Compliance Testing, LLC 1724 S. Nevada Way Mesa, Arizona 85204 (480) 926-3100 phone / (480) 926-3598 fax <u>www.compliancetesting.com</u> Project No: p2180002

toil-free: (866) 311-3368 tax: (4301926-3598

http://www.ComplarceTecturg.com

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Todd Lasher Project Test Engineer

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http://www.ComplianceTesting.com info@ComplianceTesting.com

**Test Results Summary Table** 

The frequency measurements performed by Compliance Testing, LLC and reported within this report demonstrate that the Jenoptik RRS24F-ST3 radar system has an accuracy of less than or equal to 0.62 mph in the range 6.21 mph to 62.14 mph and an accuracy of 0.62 mph to 1.86 mph in the range of 62.14 mph to 186.41 mph. This is equal to or better than +/- 1 mph accuracy up to 100 mph.

#### **Test Frequency Set 1**

Nominal Frequency (GHz)	Measured Frequency (GHz)	Amplitude (dBm)	Frequency Deviation (MHz)	Limit (MHz)	Results
$F_0 = 24.0800$	24.07855	8.3820	1.44 +/- 0.03	+/- 48.2	PASS
F <sub>1</sub> = 24.0872	24.08570	8.6710	1.55 +/- 0.03	+/- 48.2	PASS
F <sub>2</sub> = 24.0890	24.08755	10.139	1.44 +/- 0.03	+/- 48.2	PASS
F <sub>3</sub> = 24.0900	24.08850	10.286	1.50 +/- 0.03	+/- 48.2	PASS

#### **Test Frequency Set 2**

Nominal Frequency (GHz)	Measured Frequency (GHz)	Amplitude (dBm)	Frequency Deviation (MHz)	Limit (MHz)	Results
F <sub>0</sub> = 24.1200	24.11850	8.2770	1.50 +/- 0.03	+/- 48.2	PASS
F <sub>1</sub> = 24.1272	24.12590	8.9930	1.34 +/- 0.03	+/- 48.2	PASS
F <sub>2</sub> = 24.1290	24.12760	10.215	1.40 +/- 0.03	+/- 48.2	PASS
F <sub>3</sub> = 24.1300	24.12870	10.391	1.30 +/- 0.03	+/- 48.2	PASS

#### **Test Frequency Set 3**

Nominal Frequency (GHz)	Measured Frequency (GHz)	Amplitude (dBm)	Frequency Deviation (MHz)	Limit (MHz)	Results
$F_0 = 24.1600$	24.15860	8.0810	1.40 +/- 0.03	+/- 48.2	PASS
F <sub>1</sub> = 24.1672	24.16595	8.4610	1.30 +/- 0.03	+/- 48.2	PASS
F <sub>2</sub> = 24.1690	24.16765	9.9580	1.35 +/- 0.03	+/- 48.2	PASS
F <sub>3</sub> = 24.1700	24.16870	10.091	1.30 +/- 0.03	+/- 48.2	PASS



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http://www.CompleinceTexting.com info@CompleinceTexting.com

### System Verification Test Report

**Prepared for: American Traffic Solutions** 

Model: RRS24F-ST3 (-40 to +70)

Serial Number: 590-113 / 64005

#### **Description: Radar Beam Characteristics**

То

Jenoptik Multi-Radar System Verification Procedure Base Frequency Test

Date of Issue: 10-15-21

On the behalf of the applicant:

American Traffic Solutions 1150 N Alma School Rd Mesa, AZ 85201

Prepared by Compliance Testing, LLC 1724 S. Nevada Way Mesa, Arizona 85204 (480) 926-3100 phone / (480) 926-3598 fax <u>www.compliancetesting.com</u> Project No: p21a0004

Todd Lasher Project Test Engineer

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**Test Results Summary Table** 

The frequency measurements performed by Compliance Testing, LLC and reported within this report demonstrate that the Jenoptik RRS24F-ST3 radar system has an accuracy of less than or equal to 0.62 mph in the range 6.21 mph to 62.14 mph and an accuracy of 0.62 mph to 1.86 mph in the range of 62.14 mph to 186.41 mph. This is equal to or better than +/- 1 mph accuracy up to 100 mph.

#### **Test Frequency Set 1**

Nominal Frequency (GHz)	Measured Frequency (GHz)	Amplitude (dBm)	Frequency Deviation (MHz)	Limit (MHz)	Results
F <sub>0</sub> = 24.0800	24.07880	9.1260	1.19 +/- 0.03	+/- 48.2	PASS
F <sub>1</sub> = 24.0872	24.08605	9.6360	1.20 +/- 0.03	+/- 48.2	PASS
F <sub>2</sub> = 24.0890	24.08785	10.794	1.14 +/- 0.03	+/- 48.2	PASS
F <sub>3</sub> = 24.0900	24.08880	10.997	1.20 +/- 0.03	+/- 48.2	PASS

#### **Test Frequency Set 2**

Nominal Frequency (GHz)	Measured Frequency (GHz)	Amplitude (dBm)	Frequency Deviation (MHz)	Limit (MHz)	Results
F <sub>0</sub> = 24.1200	24.11885	9.3040	1.15 +/- 0.03	+/- 48.2	PASS
F <sub>1</sub> = 24.1272	24.12605	9.7320	1.20 +/- 0.03	+/- 48.2	PASS
F <sub>2</sub> = 24.1290	24.12785	10.915	1.15 +/- 0.03	+/- 48.2	PASS
F <sub>3</sub> = 24.1300	24.12885	11.124	1.14 +/- 0.03	+/- 48.2	PASS

#### **Test Frequency Set 3**

Nominal Frequency (GHz)	Measured Frequency (GHz)	Amplitude (dBm)	Frequency Deviation (MHz)	Limit (MHz)	Results
F <sub>0</sub> = 24.1600	24.15870	8.6130	1.30 +/- 0.03	+/- 48.2	PASS
F <sub>1</sub> = 24.1672	24.16590	9.0990	1.34 +/- 0.03	+/- 48.2	PASS
F <sub>2</sub> = 24.1690	24.16770	10.380	1.30 +/- 0.03	+/- 48.2	PASS
F <sub>3</sub> = 24.1700	24.16870	10.481	1.30 +/- 0.03	+/- 48.2	PASS



NOV 1 6 2022 65 VERRA ٨ KIRKLAND MUNICIPAL COURT MOBILITY PREVENTIVE MAINTENANCE CHECKLIST Site ID: KRKF003 Location: 80th St @ Rose Hill Elementary Date & Time: 03/22/2022 10:16:00 **Technician Name: Charles Goodrich** See Associated Ticket: Product: AutoPatrol Status Note/Action (If Status N/A, please specify) Item 1. Clean dirt, grime, and graffiti off enclosure and glass. Pass 1.1. Clean Graffiti. Check physical integrity. Check paint/housing for graffiti and (or) other vandalism. Pass 1.2. Clean Glass: Clean and inspect all glass and enclosures. Pass 1.3. Clean Enclosure (Interior): Clear vents/fans of obstruction. Remove dust and dirt by vacuum/wiping. Pass 1.4. Check Enclosure: If enclosure moved during cleaning, tighten base. 2. Perform a general site inspection to include environmental and road conditions. 2.1. PLP/Loop Loop: N/A Check for exposed or cut loop wiring, and epoxy wear and tear. 2.2. Power & Grounding: Pass Inspect all power and grounding connections. Pass 2.3. Radar: Inspect radar and cables. Visually inspect antenna. N/A 2.4. WVDs: Check for popped out pucks, visible cracks, or other noticeable damage. 3. Inspect poles, bases, and enclosures.

3.1. Pole: Check sturdiness. Check hurricane collar and confirm screws are tight.	Pass
3.2. Base: Check for cracks. Ensure bolts (and latch bolt) are tight and secure inside base.	Pass
3.3. Enclosure: Confirm straps are tight and secure against pole. Tighten if loose.	Pass
4. Inspect cables and connections.	
4.1. Cables: Check all cables for visible wear or damage.	Pass
4.2. Connections: Check for exposed wires on pole connecting to radar, camera enclosure, and strobe.	Pass

5. Take (and attach) photo of enclosure, pole, and photo enforcement sign(s) for presence and damage.

5.1. Enclosure:



5.2. Pole:



5.3. Photo Enforcement Sign(s):





V A VERRA MOBILITY	KIRKLAND MUNICIPAL COURT PREVENTIVE MAINTENANCE CHECKLIST			
Date & Time: 03/22/2022 10:36:00 Site ID: KRKF004	Location: 80th St @ Rose Hill Elementary			
Product: AutoPatrol Technician Name: Charles Ge	Technician Name: Charles Goodrich See Associated Ticket:			
Itam	Status Note/Action (If Status N/A, please specify)	1		
1. Clean did, grime, and graffiti off enclosure and glass				
1.1. Clean Graffiti.	Pass			
Check physical integrity. Check paint/housing for graffili and (or) other vandalism.      1.2. Clean Glass:	Pass			
Clean and inspect all glass and enclosures.				
1.3. Clean Enclosure (Interior): Clear vents/fans of obstruction. Remove dust and dirt by vacuum/wiping.	Pass			
1.4. Check Enclosure:	Pass			
Perform a general site inspection to include environmental and road conditions.				
2.1. PLP/Loop Loop: Check for exposed or cut loop wiring, and epoxy wear and tear.	N/A			
2.2. Power & Grounding:	Pass			
2.3. Radar:	Pass			
Inspect radar and cables. Visually inspect antenna.				
2.4. WVDs: Check for popped out pucks, visible cracks, or other noticeable damage.	N/A			
3. Inspect poles, bases, and enclosures.		9		

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3.1. Pole: Check sturdiness, Check hurricane collar and confirm screws are tight.	Pass
3.2. Base: Check for cracks. Ensure bolts (and latch bolt) are tight and secure inside base.	Pass
3.3. Enclosure: Confirm straps are tight and secure against pole. Tighten if loose.	Pass
4. Inspect cables and connections.	
4.1. Cables: Check all cables for visible wear or damage.	Pass
4.2. Connections: Check for exposed wires on pole connecting to radar, camera enclosure, and strobe.	Pass

5. Take (and attach) photo of enclosure, pole, and photo enforcement sign(s) for presence and damage.

5.2. Pole:



5.3. Photo Enforcement Sign(s):

5.1. Enclosure:

