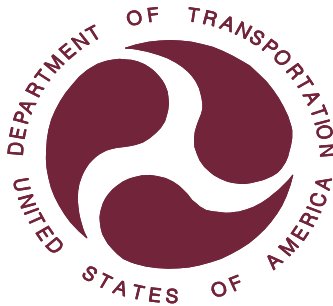


SAFETY COMPLIANCE TESTING FOR FMVSS NO. 138 TIRE PRESSURE MONITORING SYSTEMS

TOYOTA MOTOR MANUFACTURING
2007 CAMRY FOUR-DOOR
PASSENGER CAR
NHTSA NO. C75100

U.S. DOT SAN ANGELO TEST FACILITY
131 COMANCHE TRAIL, BUILDING 3527
GOODFELLOW AFB, TEXAS 76908



May 9, 2007

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6111 (NVS-220)
WASHINGTON, D.C. 20590

This publication is distributed by the National Highway Traffic Safety Administration in the interest of information exchange. Opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof.

If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement.

Prepared By: Doris Beebe

Approved By: [Signature]

Accepted By: Theresa M. Acosta

Acceptance Date: 5/9/2007

1. Report No. 138-STF-06-007	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Final Report of FMVSS 138 Compliance Testing of 2007 Toyota Camry Four-door Passenger Car, NHTSA No. C75100		5. Report Date May 9, 2007
7. Author(s) R.N. Gregg, Safety Compliance Specialist Kenneth Yates, Safety Compliance Engineer		6. Performing Organization Code STF
9. Performing Organization Name and Address U. S. DOT San Angelo Test Facility 131 Comanche Trail, Building 3527 Goodfellow AFB, Texas 76908		8. Performing Organization Report Number STF-DOT-06-138-007
12. Sponsoring Agency Name and Address United States Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance 400 Seventh Street, SW, Room 6111 Washington, DC 20590		10. Work Unit No. (TRAIS)
		11. Contract or Grant No.
		13. Type of Report and Period Covered Final Test Report November 16 through December 5, 2006
		14. Sponsoring Agency Code NVS-220
15. Supplementary Notes		
16. Abstract Compliance tests were conducted on the subject 2007 Toyota Camry four-door passenger car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-138-02 for the determination of FMVSS 138 compliance. Test failures identified were as follows: NONE.		
17. Key Words Compliance Testing Safety Engineering FMVSS 138	18. Distribution Statement Copies of this report are available from NHTSA Technical Information Services Room 2334, (NPO-411) 400 Seventh St., SW Washington, DC 20590 Email: tis@nhtsa.dot.gov FAX: 202-493-2833	
19. Security Classification (of this report) UNCLASSIFIED	21. No. of Pages 82	22. Price
20. Security Classification (of this page) UNCLASSIFIED		

Form DOT F 1700.7 (8-72)

TABLE OF CONTENTS

SECTION	PAGE
1 Purpose of Compliance Test	1
2 Test Procedure and Discussion of Results	2
3 Test Data	4
Scenario A – Left Front Tire Deflation at LLVW	14
Scenario B – Left Rear Tire Deflation at LLVW	17
Scenario C – Right Front Tire Deflation at LLVW	20
Scenario D – Right Rear Tire Deflation at LLVW	23
Scenario E – Left Front, Left Rear Tire Deflation at LLVW	26
Scenario F – Left Front, Left Rear, Right Rear, Right Front Tire at LLVW	29
Scenario G – Left Front Tire Deflation at GVWR	32
Scenario H – Right Rear Tire Deflation at GVWR	35
Scenario I – Left Front, Right Front Tire Deflation at GVWR	38
Scenario J – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at GVWR	41
Scenario K – Malfunction Detection at GVWR	44
Written Instructions	46
4 Test Equipment List and Calibration Dates	49
5 Photographs	50
Figure	
5.1 ¾ Frontal View from Left Side of Vehicle	
5.2 Vehicle Certification Label	
5.3 Vehicle Placard	
5.4 Tire Showing Brand	
5.5 Tire Showing Model	
5.6 Tire Showing Size	
5.7 Tire Showing DOT Serial Number	
5.8 Tire Showing Max Load Rating and Max Cold Inflation Pressure	
5.9 Tire Showing Sidewall/Tread Construction	
5.10 Rim Showing Valve Stem	
5.11 Instrument Panel Showing Combination Low Tire Pressure Warning and Malfunction Telltale	
5.12 Test Instrumentation Mounted on Vehicle	
5.13 Vehicle Rear Seat Ballast for GVWR Load	
5.14 Vehicle Trunk Ballast for GVWR Load	
5.15 Vehicle on Weight Scales	
5.16 Right Front Wheel with Sensor Removed for Malfunction Detection Test	
6 Test Plots	67

SECTION 1

INTRODUCTION

1.1 PURPOSE OF COMPLIANCE TEST

A 2007 Toyota Camry four-door passenger car was tested to determine if the vehicle was in compliance with the requirements of the standard. All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure TP-138-02 dated September 14, 2005.

1.2 TEST VEHICLE

The test vehicle was a 2007 Toyota Camry four-door passenger car. Nomenclatures applicable to the test vehicle are:

A. Vehicle Identification Number: 4T1BE46K47U038100

B. NHTSA No: C75100

C. Manufacturer: Toyota Motor Manufacturing

D. Manufacture Date: 06/2006

1.3 TEST DATE

The test vehicle was tested during the time period November 16 through December 5, 2006.

SECTION 2

TEST PROCEDURE AND SUMMARY OF RESULTS

2.1 TEST PROCEDURE

Prior to test, the test vehicle was inspected for completeness, systems operability, and appropriate fuel and liquid levels, i.e. oil and coolant. The vehicle was then photographically documented as required by the NHTSA/OVSC Test Procedure. Tire sidewall information was recorded. The owner's manual was reviewed, and pertinent tire and TPMS information were noted. Telltale symbol, color, location and lamp function were checked.

Subsequent events included weighing the vehicle to establish the Unloaded Vehicle Weight (UVW) and the distribution of weight on the front and rear axles and each wheel position. The vehicle was loaded to its Lightly Loaded Vehicle Weight (LLVW) for six tire deflation scenarios. This LLVW included the weights of driver, one passenger, and test equipment. The vehicle was loaded to its Gross Vehicle Weight Rating (GVWR) for four tire deflation scenarios. The gross vehicle weight included the weights of driver, one passenger, equipment, ballast in the rear seat, and ballast in the trunk. For determination of the telltale warning activation pressure, the recommended cold inflation pressure was identified from the vehicle placard.

The vehicle was instrumented with a Racelogic VBOX III 100 Hz GPS Data Logger and brake pedal trigger. The VBOX uses GPS to measure vehicle speed, time, and distance. Test data were recorded to a compact flash card. During the test, a stopwatch was used to determine the approximate "cumulative driving time" during each test phase. Cumulative driving time does not include time during the brake application or when the vehicle speed was below 50 km/h or above 100 km/h. Upon completion of a tire deflation test, graph(s) were generated by VBOX software showing vehicle speed versus time during the test procedure calibration phase and detection phase. The graphs furnish a second-by-second analysis of each test phase. The cumulative driving time for each test was calculated by post processing the VBOX graph data and is reported in Section 3 (Test Data) as 'Total Driving Time'.

The tire deflation test consisted of four parts:

1. Calibration phase: Tires were set at vehicle placard cold inflation pressure and the vehicle was driven for at least twenty minutes of cumulative driving time between 50 and 100 km/h.
2. Detection phase: Immediately after calibration phase, the selected tire(s) were deflated to seven kPa (one psi) below the Telltale Warning Activation Pressure. After one minute, the inflation pressure(s) of only deflated tire(s) were rechecked and adjusted if necessary. Vehicle was started and driven (if necessary) between 50 and 100 km/h until low tire pressure telltale illuminated.
3. Cool down phase: Vehicle was parked in the San Angelo Test Facility (SATF) garage. Tires were allowed to cool down for one hour, or until all tires excluding deflated tire(s) were within seven kPa (one psi) of vehicle placard cold inflation pressure. After cool down, the vehicle was started and the low tire pressure telltale was checked for re-illumination.

4. Extinguishment phase: Tires were adjusted to vehicle placard cold inflation pressure. The vehicle was driven (if necessary) until the telltale extinguished.

An indicant malfunction detection scenario was performed with the vehicle loaded to its GVWR. A malfunction was simulated by replacing the TPMS sensor in the right front wheel with a regular rubber valve stem. The vehicle was driven until telltale illumination or until a minimum of 20 minutes of cumulative driving time between 50 and 100 km/h was attained.

2.2 SUMMARY OF RESULTS

Six tire deflation scenarios were performed on the test vehicle at LLVW: A. left front; B. left rear; C. right front; D. right rear; E. left front and left rear; and F. left front, left rear, right rear, right front. Four tire deflation scenarios were performed on the test vehicle at GVWR: G. left front; H. right rear; I. left front and right front; and J. left front, left rear, right rear, right front.

The data indicate compliance of the test vehicle's tire pressure monitoring system for the ten tire deflation scenarios tested.

One indicant malfunction detection scenario was performed on the test vehicle at GVWR. The vehicle's combination low tire pressure warning and malfunction telltale indicated a malfunction, but did not flash and illuminate per the standard's requirements effective September 1, 2007.

SECTION 3
TEST DATA

FMVSS No. 138 – TEST DATA SUMMARY

TEST DATES: November 16 –
December 5, 2006 LAB: U. S. DOT San Angelo Test Facility (SATF)

CONTRACT: N/A VEHICLE NHTSA NUMBER: C75100

VIN: 4T1BE46K47U038100 CERTIFICATION LABEL BUILD DATE: 06/2006

REQUIREMENTS	PASS/FAIL
LOW TIRE PRESSURE WARNING TELLTALE S138: S4.3.1 (a), (b); S4.3.3 (a), (b)	
Mounting	PASS
Symbol and color	PASS
Check of lamp function	PASS
MALFUNCTION TELLTALE S138: S4.4 (b) or (c)	
Mounting	N/A
Symbol and color	N/A
Check of lamp function	N/A
LOW TIRE PRESSURE WARNING - OPERATIONAL PERFORMANCE S138: S4.2, S4.3.1 (c), S4.3.2	
Telltale illumination	PASS
MALFUNCTION INDICATOR – OPERATIONAL PERFORMANCE S138: S4.4 (a)	
Telltale illumination	INDICANT TEST ONLY
TPMS WRITTEN INSTRUCTIONS S138: S4.5	
Image of telltales	PASS
Verbatim statements	PASS

REMARKS: The FMVSS 138 malfunction performance requirements do not become effective until September 1, 2007. The test vehicle was built before the requirement is effective and is equipped with a malfunction capability that would not correctly meet the future requirements.

DATA SHEET 1 (Sheet 1 of 3)
TEST PREPARATION INFORMATION

TEST DATE: November 16, 2006 LAB: U. S. DOT San Angelo Test Facility

CONTRACT: N/A VEHICLE NHTSA NUMBER: C75100

VIN: 4T1BE46K47U038100 CERTIFICATION LABEL BUILD DATE: 06/2006

MY/MAKE/MODEL/BODY STYLE: 2007 Toyota Camry four-door passenger car

ENGINE: 2.4 L 4 cylinder

TIRE CONDITIONING:

(X) Tires used more than 100 km. Actual odometer reading : 114 km (71 mi)

VEHICLE ALIGNMENT AND WHEEL BALANCING:

Alignment checked: () Front () Rear (X) COTR waived

Wheels balanced: () Front () Rear (X) COTR waived

TPMS IDENTIFICATION:

TPMS SENSOR MAKE/MODEL: Pacific Industrial Co., LTD 42607-33011 (TMC)

TPMS ECU MAKE/MODEL: Denso Corporation 42607-06011 (TMMK)

TPMS TYPE: (X) Direct () Indirect () Other

TPMS MALFUNCTION INDICATOR TYPE:

() None () Dedicated Telltale (X) Combination low tire pressure/malfunction telltale

Does TPMS require execution of a learning/calibration driving phase? (X) YES () NO

Describe: After the system is initialized, per Toyota information provided by COTR.

Does TPMS have a manual reset control? (X) YES () NO

Describe reset control location and function: Located inside glove box on the left and used after a tire size change.

DATA SHEET 1 (Sheet 3 of 3)
TEST PREPARATION

Worksheet for Determining FMVSS No. 138 Telltale Warning Activation Pressure for Tires Installed on Vehicle		
Part	Front Axle	Rear Axle
(A) Recommended Inflation Pressure x .75	<u>210.0</u> kPa x .75 = <u>157.5</u> kPa	<u>210.0</u> kPa x .75 = <u>157.5</u> kPa
(B) Information from FMVSS 138 Table 1 below, Tire types are: Inflation pressure Minimum activation pressures from Table 1	(<input checked="" type="checkbox"/>) P-metric-Standard load () P-metric-Extra Load Load Range () C, () D, or () E (<input checked="" type="checkbox"/>) Maximum or () Rated <u>350</u> kPa (51 psi) <u>140</u> kPa (20 psi)	(<input checked="" type="checkbox"/>) P-metric-Standard load () P-metric-Extra Load Load Range () C, () D, or () E (<input checked="" type="checkbox"/>) Maximum or () Rated <u>350</u> kPa (51 psi) <u>140</u> kPa (20 psi)
(C) Telltale Warning Activation Pressure is the higher of Part (A) or (B)	<u>157.5 kPa</u> (22.8 psi)	<u>157.5 kPa</u> (22.8 psi)
(D) Pressure at which to deflate tire(s) = (C) – 7 kPa	<u>150.5 kPa</u> (21.8 psi)	<u>150.5 kPa</u> (21.8 psi)

FMVSS 138 Table 1 - Low Tire Pressure Warning Telltale - Minimum Activation Pressure

Tire Type	Maximum or Rated Inflation Pressure		Minimum Activation Pressure	
	(kPa)	(psi)	(kPa)	(psi)
P-metric -- Standard Load	240, 300, or 350	35, 44, or 51	140 140 140	20 20 20
P-metric - Extra Load	280 or 340	41 or 49	160 160	23 23
Load Range C	350	51	200	29
Load Range D	450	65	240	35
Load Range E	550	80	240	35

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 16, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 2 (Sheet 1 of 2)
LOW TIRE PRESSURE WARNING AND MALFUNCTION TELLTALE

TEST DATE: November 16, 2006 LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

TPMS Low Tire Pressure Warning Telltale

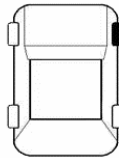
TPMS Low Tire Pressure Warning Telltale Location: To the right of the fuel gauge

Telltale is mounted inside the occupant compartment in front of and in clear view of the driver?

(X)YES ()NO (fail)

Telltale is part of a reconfigurable display? ()YES (X)NO

Identify Telltale Symbol Used (check box above figure).



OTHER (fail)
(describe below)

TPMS Malfunction Telltale

() None () Dedicated stand-alone (X) Combined with low tire pressure telltale

Malfunction Telltale is part of a reconfigurable display? ()YES (X)NO

DATA SHEET 2 (Sheet 2 of 2)
LOW TIRE PRESSURE WARNING AND MALFUNCTION TELLTALE

Check Telltale Lamp Functions:

LOW TIRE PRESSURE TELLTALE AND MALFUNCTION INDICATION, IF COMBINED

Identify position of ignition locking system when telltale illuminates.

☐

OFF/LOCK

☐

Between OFF/LOCK and ON/RUN

☒

ON/RUN

☐

Between OFF/RUN and START

Is the telltale yellow in color? (X)YES ()NO (fail)

Time telltale remains illuminated: 4 seconds

Starter Interlocks:

Does vehicle have any starter, transmission or other interlocks that affect operation of the telltale lamp check function? ()YES (X)NO

TEST RESULTS

Low Tire Pressure Warning Telltale (PASS/FAIL)

PASS

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 16, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 1 of 33)
TPMS OPERATIONAL PERFORMANCE

TEST DATE: November 14, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 7:25 am

Ambient Temperature: Start: 10.6°C (51.1°F)

Odometer Reading: Start: 114 km (71 mi)

Fuel Level: Start: Full

Weather Conditions: Clear

Time vehicle has remained with engine off and tires shielded from direct sunlight:
 (1 hour minimum): 3 hours (inside the SATF garage)

PRE-TEST TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES:

Execution Procedure	LF Tire	LR Tire	RF Tire	RR Tire
Pre-test cold measurements after ambient soak: Inflation Pressure	193.4 kPa (28.1 psi)	191.8 kPa (27.8 psi)	192.2 kPa (27.9 psi)	193.4 kPa (28.1 psi)
Tire Sidewall Temp	14.4°C (57.9°F)	13.2°C (55.8°F)	12.8°C (55.0°F)	13.4°C (56.1°F)
San Angelo Test Facility Shop Floor Temp	15.0°C (59.0°F)	13.8°C (56.8°F)	13.8°C (56.8°F)	14.0°C (57.2°F)
Adjusted pre-test inflation pressure to recommended cold pressure	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)

DATA SHEET 3 (Sheet 2 of 33)
TPMS OPERATIONAL PERFORMANCE

VEHICLE WEIGHT:

Vehicle Ratings from Certification Label:

GVWR: 1,971 kg (4,345 lbs)

GAWR (front): 1,210 kg (2,668 lbs)

GAWR (rear): 1,070 kg (2,359 lbs)

Vehicle Capacity Weight from Vehicle Placard:

Vehicle Capacity Weight 410 kg (900 lbs)

Measured Unloaded Vehicle Weight:

LF	<u>445 kg (981 lbs)</u>	LR	<u>312 kg (688 lbs)</u>
RF	<u>449 kg (990 lbs)</u>	RR	<u>285 kg (628 lbs)</u>
Front		Rear	
Axle	<u>894 kg (1,971 lbs)</u>	Axle	<u>597 kg (1,316 lbs)</u>

Total Vehicle 1,491 kg (3,287 lbs)

Measured Test Weight: (X) LLVW (+50, -0 kg) () GVWR (+0, -50 kg)

LF	<u>496 kg (1,093 lbs)</u>	LR	<u>354 kg (780 lbs)</u>
RF	<u>500 kg (1,102 lbs)</u>	RR	<u>328 kg (723 lbs)</u>
Front		Rear	
Axle	<u>996 kg (2,195 lbs)</u> (≤ GAWR)	Axle	<u>682 kg (1,503 lbs)</u> (≤ GAWR)

Total Vehicle 1,678 kg (3,698 lbs) (not greater than UVW + VCW)

Note: For scenarios A, B, C, D, E, and F, this total vehicle weight measures the vehicle loaded to LLVW, including 187 kg (412 lbs) of passengers and equipment.

DATA SHEET 3 (Sheet 3 of 33)
TPMS OPERATIONAL PERFORMANCE

TEST DATE: November 20, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 12:37 pm

Ambient Temperature: Start: 14.9°C (58.8°F)

Odometer Reading: Start: 296.1 km (184.0 mi)

Fuel Level: Start: Full

VEHICLE WEIGHT:

Vehicle Ratings from Certification Label:

GVWR: 1,971 kg (4,345 lbs)

GAWR (front): 1,210 kg (2,668 lbs)

GAWR (rear): 1,070 kg (2,359 lbs)

Vehicle Capacity Weight from Vehicle Placard:

Vehicle Capacity Weight 410 kg (900 lbs)

Measured Unloaded Vehicle Weight:

LF <u>445 kg (981 lbs)</u>	LR <u>312 kg (688 lbs)</u>
RF <u>449 kg (990 lbs)</u>	RR <u>285 kg (628 lbs)</u>
Front	Rear
Axle <u>894 kg (1,971 lbs)</u>	Axle <u>597 kg (1,316 lbs)</u>

Total Vehicle 1,491 kg (3,287 lbs)

Measured Test Weight: () LLVW (+50, -0 kg) (X) GVWR (+0, -50 kg)

LF <u>510 kg (1,124 lbs)</u>	LR <u>447 kg (985 lbs)</u>
RF <u>520 kg (1,146 lbs)</u>	RR <u>419 kg (924 lbs)</u>
Front	Rear
Axle <u>1,030 kg (2,270 lbs)</u> (≤ GAWR)	Axle <u>866 kg (1,909 lbs)</u> (≤ GAWR)

Total Vehicle 1,896 kg (4,179 lbs) (not greater than UVW + VCW)

Note: For scenarios G, H, I, J, and K, this Total Vehicle Weight measures the vehicle loaded to GVWR, 405 kg (892 lb) of passengers, equipment, and ballast.

DATA SHEET 3 (Sheet 4 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO A - Left Front Tire Deflation at LLVW

TEST DATE: November 16, 2006 LAB: U. S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 10:39 am

Odometer Reading: Start: 114 km (71 mi)

Note: See Data Sheet 3 (Sheet 2 of 33) for Test Weight.

**TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:**

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After loading vehicle to lightly loaded vehicle weight or GVWR, positioning vehicle at selected test start point, and vehicle cool down period. Ambient Temperature: <u>11.8°C (53.2°F)</u> Vehicle cool down period: <u>overnight</u>				
Inflation Pressure	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)
Tire Sidewall Temp	14.4°C (57.9°F)	13.2°C (55.8°F)	12.8°C (55.0°F)	13.4°C (56.1°F)
San Angelo Test Facility Shop Floor Temp	15.0°C (59.0°F)	13.8°C (56.8°F)	13.8°C (56.8°F)	14.0°C (57.2°F)

SYSTEM CALIBRATION/LEARNING PHASE:

(V-box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:16 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:02 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Max speed: 87.9 km/hr (54.6 mph)

Total Driving Time: 20:20 minutes (V-Box time)

DATA SHEET 3 (Sheet 5 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO A - Left Front Tire Deflation at LLVW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Immediately, after vehicle is stopped, engine off; Inflation Pressure	232.1 kPa (33.7 psi)	230.2 kPa (33.4 psi)	230.2 kPa (33.4 psi)	229.0 kPa (33.2 psi)
Tire Sidewall Temp	26.6°C (79.9°F)	24.8°C (76.6°F)	23.6°C (74.5°F)	27.0°C (80.6°F)
San Angelo Test Facility Shop Floor Temp	13.6°C (56.5°F)	13.8°C (56.8°F)	14.4°C (57.9°F)	14.2°C (57.6°F)

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Indicate Location of Tire(s) Deflated: (X)LF ()LR ()RR ()RF Inflation Pressure	150.5 kPa (21.8 psi)	N/A	N/A	N/A

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? (X)YES ()NO

Time to Illuminate:

Illumination with ignition switch activation. Driving was not required.

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X)YES ()NO (fail)
--

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?
 ()YES (X)NO

After 5 minutes with the ignition locking system in the "Off" or "Lock" position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the "On" or "Run" position?
 (X)YES ()NO (fail)

DATA SHEET 3 (Sheet 6 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO A - Left Front Tire Deflation at LLVW

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the "On" or "Run" position? (X)YES ()NO (fail)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After vehicle cool down period: Ambient Temperature: 16.9°C (62.4°F) Vehicle cool down period: 75 minutes				
Inflation Pressure	138.2 kPa (20.0 psi)	217.8 kPa (31.6 psi)	215.4 kPa (31.2 psi)	215.0 kPa (31.2 psi)
Tire Sidewall Temp	17.8°C (64.0°F)	17.4°C (63.3°F)	16.4°C (61.5°F)	16.0°C (60.8°F)
San Angelo Test Facility Shop Floor Temp	15.2°C (59.4°F)	16.0°C (60.8°F)	15.2°C (59.4°F)	14.8°C (58.6°F)

After the cool down period of approximately one hour, restart the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the "On" or "Run" position? (X)YES ()NO (fail)

TELLTALE EXTINGUISHMENT:

RE-ADJUSTED TIRE INFLATION PRESSURES:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After cool down period; Re-adjusted Inflation Pressure:	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)

Is it necessary to drive the vehicle to extinguish the telltale? ()YES (X)NO

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)

PASS

Left front tire was deflated at LLVW.

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 16, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 7 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO B – Left Rear Tire Deflation at LLVW

TEST DATE: November 16, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 12:54 pm

Odometer Reading: Start: 143 km (89 mi)

Note: See Data Sheet 3 (Sheet 2 of 33) for Test Weight.

**TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:**

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After loading vehicle to lightly loaded vehicle weight or GVWR, positioning vehicle at selected test start point, and vehicle cool down period. Ambient Temperature: <u>17.1°C (62.8°F)</u> Vehicle cool down period: <u>70</u> minutes Road Surface Temp: <u>25.8°C (78.4°F)</u>				
Inflation Pressure	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)
Tire Sidewall Temp	17.8°C (64.0°F)	17.4°C (63.3°F)	16.4°C (61.5°F)	16.0°C (60.8°F)
San Angelo Test Facility Shop Floor Temp	15.2°C (59.4°F)	16.0°C (60.8°F)	15.2°C (59.4°F)	14.8°C (58.6°F)

SYSTEM CALIBRATION/LEARNING PHASE:

(V-box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:06 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

9.59 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Max speed: 88.5 km/hr (55.0 mph)

Total Driving Time: 20:04 minutes (V-Box time)

DATA SHEET 3 (Sheet 8 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO B – Left Rear Tire Deflation at LLVW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Road Surface Temp: <u>25.0°C (77.0°F)</u>				
Immediately, after vehicle is stopped, engine off; Inflation Pressure	228.9 kPa (33.2 psi)	228.4 kPa (33.1 psi)	228.7 kPa (33.2 psi)	229.7 kPa (33.3 psi)
Tire Sidewall Temp	31.8°C (89.2°F)	28.4°C (83.1°F)	27.2°C (81.0°F)	32.0°C (89.6°F)
San Angelo Test Facility Shop Floor Temp	15.6°C (60.1°F)	16.6°C (61.9°F)	15.6°C (60.1°F)	15.8°C (60.4°F)

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Indicate Location of Tire(s) Deflated: ()LF (X)LR ()RR ()RF Inflation Pressure	N/A	150.5 kPa (22.9 psi)	N/A	N/A

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? (X)YES ()NO

Time to Illuminate:

Illumination with ignition switch activation. Driving was not required.

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X)YES ()NO (fail)
--

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?
 ()YES (X)NO

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?
 (X)YES ()NO (fail)

DATA SHEET 3 (Sheet 9 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO B – Left Rear Tire Deflation at LLVW

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After vehicle cool down period: Ambient Temperature: <u>20.9°C (69.6°F)</u> Vehicle cool down period: <u>60</u> minutes				
Inflation Pressure	214.2 kPa (31.9 psi)	142.9 kPa (21.7 psi)	214.6 kPa (32.7 psi)	215.5 kPa (32.6 psi)
Tire Sidewall Temp	19.0°C (81.0°F)	19.8°C (81.0°F)	19.0°C (82.0°F)	18.8°C (81.7°F)
San Angelo Test Facility Shop Floor Temp	17.2°C (79.2°F)	18.2°C (79.9°F)	17.2°C (80.2°F)	18.4°C (79.9°F)

After the cool down period of approximately one hour, restart the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TELLTALE EXTINGUISHMENT:

RE-ADJUSTED TIRE INFLATION PRESSURES:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After cool down period; Re-adjusted Inflation Pressure:	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)

Is it necessary to drive the vehicle to extinguish the telltale? ()YES (X)NO

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)

PASS

Left rear tire was deflated at LLVW.

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 16, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 10 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO C – Right Front Tire Deflation at LLVW

TEST DATE: November 16, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 2:54 pm

Odometer Reading: Start: 172 km (107 mi)

Note: See Data Sheet 3 (Sheet 2 of 33) for Test Weight.

**TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:**

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After loading vehicle to lightly loaded vehicle weight or GVWR, positioning vehicle at selected test start point, and vehicle cool down period. Ambient Temperature: <u>20.9°C (69.6°F)</u> Vehicle cool down period: <u>70</u> minutes Road Surface Temp: <u>27.4°C (81.3°F)</u>				
Inflation Pressure	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)
Tire Sidewall Temp	19.0°C (66.2°F)	19.8°C (67.6°F)	19.0°C (66.2°F)	18.8°C (65.8°F)
San Angelo Test Facility Shop Floor Temp	17.2°C (63.0°F)	18.2°C (64.8°F)	17.2°C (63.0°F)	16.4°C (61.5°F)

SYSTEM CALIBRATION/LEARNING PHASE:

(V-box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south

Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:01 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north

Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal is applied.

10:01 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Max speed: 85.5 km/hr (53.1 mph)

Total Driving Time: 20:07 minutes (V-Box time)

DATA SHEET 3 (Sheet 11 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO C – Right Front Tire Deflation at LLVW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Road Surface Temp: <u>23.8°C (74.8°F)</u>				
Immediately, after vehicle is stopped, engine off; Inflation Pressure	226.5 kPa (35.1 psi)	224.7 kPa (35.1 psi)	226.2 kPa (35.0 psi)	224.4 kPa (34.9 psi)
Tire Sidewall Temp	22.8°C (102.9°F)	24.0°C (96.4°F)	24.0°C (93.0°F)	33.8°C (97.5°F)
San Angelo Test Facility Shop Floor Temp	16.8°C (82.4°F)	17.6°C (80.6°F)	17.2°C (82.8°F)	17.2°C (82.0°F)

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Indicate Location of Tire(s) Deflated: ()LF ()LR ()RR (X)RF Inflation Pressure	N/A	N/A	N/A	150.5 kPa (21.8 psi)

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? (X)YES ()NO

Time to Illuminate:

Illumination with ignition switch activation. Driving was not required.

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X)YES ()NO (fail)

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?
()YES (X)NO

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?
(X)YES ()NO (fail)

DATA SHEET 3 (Sheet 12 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO C – Right Front Tire Deflation at LLVW

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After vehicle cool down period: Ambient Temperature: <u>23.0°C (73.4°F)</u> Vehicle cool down period: <u>65</u> minutes				
Inflation Pressure	212.5 kPa (30.8 psi)	212.5 kPa (30.8 psi)	213.4 kPa (31.0 psi)	141.9 kPa (20.6 psi)
Tire Sidewall Temp	22.0°C (71.6°F)	21.0°C (69.8°F)	22.6°C (72.7°F)	21.4°C (70.5°F)
San Angelo Test Facility Shop Floor Temp	19.0°C (66.2°F)	20.2°C (68.4°F)	17.8°C (64.0°F)	17.0°C (62.6°F)

After the cool down period of approximately one hour, restart the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TELLTALE EXTINGUISHMENT:

RE-ADJUSTED TIRE INFLATION PRESSURES:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After cool down period; Re-adjusted Inflation Pressure:	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)

Is it necessary to drive the vehicle to extinguish the telltale? ()YES (X)NO

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)

PASS

Right front tire was deflated at LLVW.

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 16, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 13 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO D – Right Rear Tire Deflation at LLVW

TEST DATE: November 17, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 8:36 am

Odometer Reading: Start: 201 km (125 mi)

Note: See Data Sheet 3 (Sheet 2 of 33) for Test Weight.

**TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:**

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After loading vehicle to lightly loaded vehicle weight or GVWR, positioning vehicle at selected test start point, and vehicle cool down period. Ambient Temperature: <u>12.7°C (54.9°F)</u> Vehicle cool down period: <u>overnight</u> Roadway Surface Temp: <u>11.5°C (52.7°F)</u>				
Inflation Pressure	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)
Tire Sidewall Temp	14.0°C (57.2°F)	13.6°C (56.5°F)	12.2°C (54.0°F)	13.0°C (55.4°F)
San Angelo Test Facility Shop Floor Temp	14.8°C (58.6°F)	13.8°C (56.8°F)	11.6°C (52.9°F)	12.6°C (54.7°F)

SYSTEM CALIBRATION/LEARNING PHASE:

(V-box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south

Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:00 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north

Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:03 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Max speed: 84.7 km/hr (52.6 mph)

Total Driving Time: 20:18 minutes (V-Box time)

DATA SHEET 3 (Sheet 14 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO D – Right Rear Tire Deflation at LLVW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Road Surface Temp: <u>12.4°C (54.3°F)</u>				
Immediately, after vehicle is stopped, engine off; Inflation Pressure	226.1 kPa (32.8 psi)	228.0 kPa (33.1 psi)	229.3 kPa (33.3 psi)	230.3 kPa (33.4 psi)
Tire Sidewall Temp	22.6°C (72.7°F)	22.4°C (72.3°F)	18.2°C (64.8°F)	19.2°C (66.6°F)
San Angelo Test Facility Shop Floor Temp	14.8°C (58.6°F)	16.0°C (60.8°F)	15.4°C (59.7°F)	15.6°C (60.1°F)

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Indicate Location of Tire(s) Deflated: ()LF ()LR (X)RR ()RF Inflation Pressure	N/A	N/A	150.5 kPa (21.8 psi)	N/A

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? (X)YES ()NO

Time to Illuminate:

Illumination with ignition switch activation. Driving was not required.

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X)YES ()NO (fail)

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?
()YES (X)NO

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?
(X)YES ()NO (fail)

DATA SHEET 3 (Sheet 15 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO D – Right Rear Tire Deflation at LLVW

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After vehicle cool down period: Ambient Temperature: <u>16.4°C (61.5°F)</u> Vehicle cool down period: <u>63</u> minutes				
Inflation Pressure	216.1 kPa (31.3 psi)	214.4 kPa (31.1 psi)	143.4 kPa (20.8 psi)	217.0 kPa (31.5 psi)
Tire Sidewall Temp	17.2°C (63.0°F)	16.8°C (62.2°F)	17.2°C (63.0°F)	17.6°C (63.7°F)
San Angelo Test Facility Shop Floor Temp	17.0°C (62.6°F)	16.2°C (61.2°F)	16.4°C (61.5°F)	17.2°C (63.0°F)

After the cool down period of approximately one hour, restart the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TELLTALE EXTINGUISHMENT:

RE-ADJUSTED TIRE INFLATION PRESSURES:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After cool down period; Re-adjusted Inflation Pressure:	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)

Is it necessary to drive the vehicle to extinguish the telltale? ()YES (X)NO

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)

PASS

Right rear tire was deflated at LLVW.

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 17, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 16 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO E – Left Front, Left Rear Tire Deflation at LLVW

TEST DATE: November 17, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 10:38 am

Odometer Reading: Start: 230 km (143 mi)

Note: See Data Sheet 3 (Sheet 2 of 33) for Test Weight.

TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After loading vehicle to lightly loaded vehicle weight or GVWR, positioning vehicle at selected test start point, and vehicle cool down period. Ambient Temperature: <u>17.1°C (62.8°F)</u> Vehicle cool down period: <u>76</u> minutes Roadway Surface Temp: <u>20.2°C (68.4°F)</u>				
Inflation Pressure	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)
Tire Sidewall Temp	17.2°C (63.0°F)	16.8°C (62.2°F)	17.2°C (63.0°F)	17.6°C (63.7°F)
San Angelo Test Facility Shop Floor Temp	17.0°C (62.6°F)	16.2°C (61.2°F)	16.4°C (61.5°F)	17.0°C (62.6°F)

SYSTEM CALIBRATION/LEARNING PHASE:

(V-box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:03 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:10 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Max speed: 84.7 km/hr (52.6 mph)

Total Driving Time: 20:10 minutes (V-Box time)

DATA SHEET 3 (Sheet 17 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO E – Left Front, Left Rear Tire Deflation at LLVW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Road Surface Temp: <u>23.8°C (74.8°F)</u>				
Immediately, after vehicle is stopped, engine off; Inflation Pressure	229.3 kPa (33.3 psi)	229.2 kPa (33.2 psi)	228.6 kPa (33.2 psi)	230.7 kPa (33.5 psi)
Tire Sidewall Temp	20.8°C (69.4°F)	22.4°C (72.3°F)	21.6°C (70.9°F)	22.0°C (71.6°F)
San Angelo Test Facility Shop Floor Temp	16.4°C (61.5°F)	16.8°C (62.2°F)	16.8°C (62.2°F)	16.4°C (61.5°F)

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Indicate Location of Tire(s) Deflated: (X)LF (X)LR ()RR ()RF Inflation Pressure	150.5 kPa (21.8 psi)	150.6 kPa (21.8 psi)	N/A	N/A

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? (X)YES ()NO

Time to Illuminate:

Illumination with ignition switch activation. Driving was not required.

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X)YES ()NO (fail)
--

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?
 ()YES (X)NO

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?
 (X)YES ()NO (fail)

DATA SHEET 3 (Sheet 18 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO E – Left Front, Left Rear Tire Deflation at LLVW

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After vehicle cool down period: Ambient Temperature: 19.8°C (67.6°F) Vehicle cool down period: 60 minutes				
Inflation Pressure	141.9 kPa (20.6 psi)	142.9 kPa (20.7 psi)	214.0 kPa (31.0 psi)	214.7 kPa (31.1 psi)
Tire Sidewall Temp	19.8°C (67.6°F)	20.2°C (68.4°F)	19.2°C (66.6°F)	18.2°C (64.8°F)
San Angelo Test Facility Shop Floor Temp	17.6°C (63.7°F)	18.8°C (65.8°F)	18.4°C (65.1°F)	17.8°C (64.0°F)

After the cool down period of approximately one hour, restart the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TELLTALE EXTINGUISHMENT:

RE-ADJUSTED TIRE INFLATION PRESSURES:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After cool down period; Re-adjusted Inflation Pressure:	210.0 kPa (31.9 psi)	210.1 kPa (31.9 psi)	210.0 kPa (31.9 psi)	210.0 kPa (31.9 psi)

Is it necessary to drive the vehicle to extinguish the telltale? ()YES (X)NO

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)

PASS

Left front, left rear tires were deflated at LLVW.

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 17, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 19 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO F – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at LLVW

TEST DATE: November 17, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 12:50 pm

Odometer Reading: Start: 267 km (166 mi)

Note: See Data Sheet 3 (Sheet 2 of 33) for Test Weight.

**TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:**

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After loading vehicle to lightly loaded vehicle weight or GVWR, positioning vehicle at selected test start point, and vehicle cool down period. Ambient Temperature: <u>20.2°C (68.4°F)</u> Vehicle cool down period: <u>78</u> minutes Road Surface Temp: <u>28.2°C (82.8°F)</u>				
Inflation Pressure	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)
Tire Sidewall Temp	21.0°C (69.8°F)	19.6°C (67.3°F)	19.0°C (66.2°F)	18.4°C (65.1°F)
San Angelo Test Facility Shop Floor Temp	17.6°C (63.7°F)	18.2°C (64.8°F)	18.4°C (65.1°F)	17.8°C (64.0°F)

SYSTEM CALIBRATION/LEARNING PHASE:

(V-box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south

Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:04 minutes (stopwatch time) 12.9 km (8.0 mi)* distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north

Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:16 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Max speed: 86.0 km/hr (53.4 mph)

Total Driving Time: 20:10 minutes (V-Box time)

* Lost power to V-Box – stopped then restarted test from GAFB entrance.

DATA SHEET 3 (Sheet 20 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO F – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at LLVW

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Road Surface Temp: <u>28.2°C (82.8°F)</u>				
Immediately, after vehicle is stopped, engine off; Inflation Pressure	228.7 kPa (33.2 psi)	226.3 kPa (32.8 psi)	227.5 kPa (33.0 psi)	228.9 kPa (33.2 psi)
Tire Sidewall Temp	23.2°C (73.8°F)	25.2°C (77.4°F)	23.2°C (73.8°F)	21.8°C (71.2°F)
San Angelo Test Facility Shop Floor Temp	18.8°C (65.8°F)	19.0°C (66.2°F)	18.4°C (65.1°F)	18.2°C (64.8°F)

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Indicate Location of Tire(s) Deflated: (X)LF (X)LR (X)RR (X)RF Inflation Pressure	150.5 kPa (21.8 psi)	150.6 kPa (21.8 psi)	150.5 kPa (21.8 psi)	150.5 kPa (21.8 psi)

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? (X)YES ()NO

Time to Illuminate:

Illumination with ignition switch activation. Driving was not required.

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X)YES ()NO (fail)
--

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?
 ()YES (X)NO

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?
 (X)YES ()NO (fail)

DATA SHEET 3 (Sheet 21 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO F – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at LLVW

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After vehicle cool down period: Ambient Temperature: <u>22.5°C (72.5°F)</u> Vehicle cool down period: <u>62</u> minutes				
Inflation Pressure	141.3 kPa (20.5 psi)	143.4 kPa (20.8 psi)	143.3 kPa (20.8 psi)	142.6 kPa (20.7 psi)
Tire Sidewall Temp	21.2°C (70.2°F)	22.4°C (72.3°F)	21.4°C (70.5°F)	21.2°C (70.2°F)
San Angelo Test Facility Shop Floor Temp	19.8C (67.6°F)	20.2°C (68.4°F)	19.6°C (67.3°F)	19.0°C (66.2°F)

After the cool down period of approximately one hour, restart the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TELLTALE EXTINGUISHMENT:

RE-ADJUSTED TIRE INFLATION PRESSURES:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After cool down period; Re-adjusted Inflation Pressure:	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)

Is it necessary to drive the vehicle to extinguish the telltale? ()YES (X)NO

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)

PASS

Left front, left rear, right rear, and right front tires were deflated at LLVW.

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 17, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 22 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO G – Left Front Tire Deflation at GVWR

TEST DATE: November 20, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 1:41 pm

Odometer Reading: Start: 296 km (184 mi)

Note: See Data Sheet 3 (Sheet 3 of 33) for Test Weight.

**TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:**

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After loading vehicle to lightly loaded vehicle weight or GVWR, positioning vehicle at selected test start point, and vehicle cool down period. Ambient Temperature: <u>19.7°C (67.5°F)</u> Vehicle cool down period: <u>overnight</u> Road Surface Temp: <u>28.8°C (83.8°F)</u>				
Inflation Pressure	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)
Tire Sidewall Temp	19.2°C (66.6°F)	20.6°C (69.1°F)	18.4°C (65.1°F)	16.8°C (62.2°F)
San Angelo Test Facility Shop Floor Temp	16.4°C (61.5°F)	17.2°C (63.0°F)	16.4°C (61.5°F)	15.2°C (59.4°F)

SYSTEM CALIBRATION/LEARNING PHASE:

(V-box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

9:47 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:20 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Max speed: 85.7 km/hr (53.3 mph)

Total Driving Time: 20:29 minutes (V-Box time)

DATA SHEET 3 (Sheet 23 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO G – Left Front Tire Deflation at GVWR

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Road Surface Temp: <u>27.2°C (81.0°F)</u>				
Immediately, after vehicle is stopped, engine off; Inflation Pressure	231.1 kPa (33.5 psi)	230.6 kPa (33.4 psi)	229.6 kPa (33.3 psi)	232.1 kPa (33.7 psi)
Tire Sidewall Temp	22.8°C (73.0°F)	22.4°C (72.3°F)	22.4°C (72.3°F)	22.8°C (73.0°F)
San Angelo Test Facility Shop Floor Temp	16.8°C (62.2°F)	18.0°C (64.4°F)	16.8°C (62.2°F)	16.6°C (61.9°F)

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Indicate Location of Tire(s) Deflated: (X)LF ()LR ()RR ()RF Inflation Pressure	150.5 kPa (21.8 psi)	N/A	N/A	N/A

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? (X)YES ()NO

Time to Illuminate:

Illumination with ignition switch activation. Driving was not required.

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X)YES ()NO (fail)

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?
 ()YES (X)NO

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?
 (X)YES ()NO

DATA SHEET 3 (Sheet 24 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO G – Left Front Tire Deflation at GVWR

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After vehicle cool down period: Ambient Temperature: <u>21.3°C (70.3°F)</u> Vehicle cool down period: <u>62</u> minutes				
Inflation Pressure	143.0 kPa (20.7 psi)	216.9 kPa (31.5 psi)	215.7 kPa (31.3 psi)	218.6 kPa (31.7 psi)
Tire Sidewall Temp	20.2°C (68.4°F)	20.2°C (68.4°F)	21.0°C (69.8°F)	19.6°C (67.3°F)
San Angelo Test Facility Shop Floor Temp	17.0°C (62.6°F)	17.8°C (64.0°F)	17.0°C (62.6°F)	16.4°C (61.5°F)

After the cool down period of approximately one hour, restart the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TELLTALE EXTINGUISHMENT:

RE-ADJUSTED TIRE INFLATION PRESSURES:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After cool down period; Re-adjusted Inflation Pressure:	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)

Is it necessary to drive the vehicle to extinguish the telltale? ()YES (X)NO (fail)

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)

PASS

Left front tire was deflated at GVWR.

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 20, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 25 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO H – Right Rear Tire Deflation at GVWR

TEST DATE: November 21, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 10:09 am

Odometer Reading: Start: 325 km (202 mi)

Note: See Data Sheet 3 (Sheet 3 of 33) for Test Weight.

**TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:**

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After loading vehicle to lightly loaded vehicle weight or GVWR, positioning vehicle at selected test start point, and vehicle cool down period. Ambient Temperature: <u>14.3°C (57.7°F)</u> Vehicle cool down period: <u>overnight</u> Roadway Surface Temp: <u>15.2°C (59.4°F)</u>				
Inflation Pressure	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)
Tire Sidewall Temp	18.2°C (64.8°F)	17.6°C (63.7°F)	17.8°C (64.0°F)	18.2°C (64.8°F)
San Angelo Test Facility Shop Floor Temp	19.2°C (66.6°F)	19.0°C (66.2°F)	19.4°C (66.9°F)	19.2°C (66.6°F)

SYSTEM CALIBRATION/LEARNING PHASE:

(V-box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south

Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

9:52 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north

Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:19 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Max speed: 89.6 km/hr (55.7 mph)

Total Driving Time: 20:36 minutes (V-Box time)

DATA SHEET 3 (Sheet 26 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO H – Right Rear Tire Deflation at GVWR

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Road Surface Temp: <u>18.2°C (64.8°F)</u>				
Immediately, after vehicle is stopped, engine off; Inflation Pressure	223.8 kPa (32.5 psi)	229.2 kPa (33.2 psi)	229.0 kPa (33.2 psi)	227.2 kPa (33.0 psi)
Tire Sidewall Temp	24.8°C (76.6°F)	25.6°C (78.1°F)	24.6°C (76.3°F)	24.4°C (75.9°F)
San Angelo Test Facility Shop Floor Temp	19.8°C (67.6°F)	19.8°C (67.6°F)	19.6°C (67.3°F)	19.6°C (67.3°F)

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Indicate Location of Tire(s) Deflated: ()LF ()LR (X)RR ()RF Inflation Pressure	N/A	N/A	150.5 kPa (21.8 psi)	N/A

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? (X)YES ()NO

Time to Illuminate:

Illumination with ignition switch activation. Driving was not required.

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X)YES ()NO (fail)

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?
()YES (X)NO

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?
(X)YES ()NO (fail)

DATA SHEET 3 (Sheet 27 of 33)
TPMS OPERATIONAL PERFORMANCE
SCENARIO H – Right Rear Tire Deflation at GVWR

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the "On" or "Run" position? (X)YES ()NO (fail)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After vehicle cool down period: Ambient Temperature: <u>20.2°C (68.4°F)</u> Vehicle cool down period: <u>60</u> minutes				
Inflation Pressure	214.1 kPa (31.1 psi)	218.7 kPa (31.7 psi)	144.4 kPa (20.9 psi)	217.5 kPa (31.5 psi)
Tire Sidewall Temp	21.0°C (69.8°F)	20.4°C (68.7°F)	20.2°C (68.4°F)	20.4°C (68.7°F)
San Angelo Test Facility Shop Floor Temp	20.4°C (68.7°F)	20.4°C (68.7°F)	20.2°C (68.4°F)	20.4°C (68.7°F)

After the cool down period of approximately one hour, restart the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the "On" or "Run" position? (X)Yes ()No

TELLTALE EXTINGUISHMENT:

RE-ADJUSTED TIRE INFLATION PRESSURES:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After cool down period; Re-adjusted Inflation Pressure:	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)

Is it necessary to drive the vehicle to extinguish the telltale? ()YES (X)NO

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)

PASS

Right rear tire was deflated at GVWR.

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 21, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 28 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO I – Left Front, Right Front Tire Deflation at GVWR

TEST DATE: November 21, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 12:56 pm

Odometer Reading: Start: 354 km (220 mi)

Note: See Data Sheet 3 (Sheet 3 of 33) for Test Weight

**TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:**

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After loading vehicle to lightly loaded vehicle weight or GVWR, positioning vehicle at selected test start point, and vehicle cool down period. Ambient Temperature: <u>20.8°C (69.4°F)</u> Vehicle cool down period: <u>120</u> minutes Roadway Surface Temp: <u>25.4°C (77.7°F)</u>				
Inflation Pressure	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)
Tire Sidewall Temp	21.2°C (70.2°F)	21.2°C (70.2°F)	20.6°C (69.1°F)	20.8°C (69.4°F)
San Angelo Test Facility Shop Floor Temp	20.4°C (68.7°F)	20.2°C (68.4°F)	20.4°C (68.7°F)	20.6°C (69.1°F)

SYSTEM CALIBRATION/LEARNING PHASE:

(V-box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south

Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

9:52 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north

Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:16 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Max speed: 86.0 km/hr (53.4 mph)

Total Driving Time: 20:14 minutes (V-Box time)

DATA SHEET 3 (Sheet 29 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO I – Left Front, Right Front Tire Deflation at GVWR

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Road Surface Temp: <u>26.4°C (79.5°F)</u>				
Immediately, after vehicle is stopped, engine off; Inflation Pressure	226.7 kPa (32.9 psi)	226.9 kPa (32.9 psi)	227.9 kPa (33.1 psi)	225.9 kPa (32.8 psi)
Tire Sidewall Temp	24.6°C (76.3°F)	24.6°C (76.3°F)	24.2°C (75.6°F)	24.0°C (75.2°F)
San Angelo Test Facility Shop Floor Temp	21.0°C (69.8°F)	21.6°C (70.9°F)	21.2°C (70.2°F)	21.4°C (70.5°F)

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Indicate Location of Tire(s) Deflated: (X)LF ()LR ()RR (X)RF Inflation Pressure	150.5 kPa (21.8 psi)	N/A	N/A	150.5 kPa (21.8 psi)

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? (X)YES ()NO

Time to Illuminate:

Illumination with ignition switch activation. Driving was not required.

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X)YES ()NO (fail)
--

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?
 ()YES (X)NO

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?
 (X)YES ()NO (fail)

DATA SHEET 3 (Sheet 30 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO I – Left Front, Right Front Tire Deflation at GVWR

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After vehicle cool down period: Ambient Temperature: <u>23.7°C (74.7°F)</u> Vehicle cool down period: <u>65</u> minutes				
Inflation Pressure	143.0 kPa (20.7 psi)	214.6 kPa (31.1 psi)	215.3 kPa (31.2 psi)	143.0 kPa (20.7 psi)
Tire Sidewall Temp	23.4°C (74.1°F)	24.4°C (75.9°F)	23.4°C (74.1°F)	23.6°C (74.5°F)
San Angelo Test Facility Shop Floor Temp	22.6°C (72.7°F)	23.0°C (73.4°F)	22.2°C (72.0°F)	22.4°C (72.3°F)

After the cool down period of approximately one hour, restart the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

RE-ADJUSTED TIRE INFLATION PRESSURES:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After cool down period; Re-adjusted Inflation Pressure:	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)

Is it necessary to drive the vehicle to extinguish the telltale? ()YES (X)NO

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)

PASS

Left front and right front tires were deflated at GVWR.

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 21, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 3 (Sheet 31 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO J – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at GVWR

TEST DATE: November 27, 2006 LAB: US DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C75100

Time: Start: 1:33 pm

Odometer Reading: Start: 383 km (238 mi)

Note: See Data Sheet 3 (Sheet 3 of 33) for Test Weight.

**TIRE INFLATION PRESSURES AND TIRE/SURFACE TEMPERATURES
BEFORE CALIBRATION PHASE:**

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After loading vehicle to lightly loaded vehicle weight or GVWR, positioning vehicle at selected test start point, and vehicle cool down period. Ambient Temperature: <u>23.2°C (73.8°F)</u> Vehicle cool down period: <u>overnight</u> Roadway Surface Temps: <u>30.2°C (86.4°F)</u>				
Inflation Pressure	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)
Tire Sidewall Temp	22.2°C (72.0°F)	22.6°C (72.7°F)	22.8°C (73.0°F)	22.6°C (72.7°F)
San Angelo Test Facility Shop Floor Temp	22.2°C (72.0°F)	22.4°C (72.3°F)	22.6°C (72.7°F)	22.4°C (72.3°F)

SYSTEM CALIBRATION/LEARNING PHASE:

(V-box time – see Section 6 test plots)

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time (10 – 15 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

9:58 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Driving in opposite direction:

Starting point: Brodnax Road / Highway 87 Direction: north
Cumulative vehicle driving time (5 – 10 minutes) at a vehicle speed of 75± 25 km/h
excluding time periods when brake pedal is applied.

10:14 minutes (stopwatch time) 14.5 km (9.0 mi) distance

Max speed: 87.3 km/hr (54.2 mph)

Total Driving Time: 20:16 minutes (V-Box time)

DATA SHEET 3 (Sheet 32 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO J – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at GVWR

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER CALIBRATION PHASE:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Road Surface Temp: <u>29.8°C (85.6°F)</u>				
Immediately, after vehicle is stopped, engine off; Inflation Pressure	229.8 kPa (33.3 psi)	228.7 kPa (33.2 psi)	229.9 kPa (33.3 psi)	229.9 kPa (33.3 psi)
Tire Sidewall Temp	28.0°C (82.4°F)	27.0°C (80.6°F)	27.4°C (81.3°F)	28.6°C (83.5°F)
San Angelo Test Facility Shop Floor Temp	23.0°C (73.4°F)	23.0°C (73.4°F)	23.0°C (73.4°F)	23.2°C (73.8°F)

SYSTEM DETECTION PHASE:

LOCATION AND PRESSURE(S) OF DEFLATED TIRE(S):

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
Indicate Location of Tire(s) Deflated: (X)LF (X)LR (X)RR (X)RF Inflation Pressure	150.6 kPa (21.8 psi)	150.5 kPa (21.8 psi)	150.5 kPa (21.8 psi)	150.6 kPa (21.8 psi)

TELLTALE ILLUMINATION:

Starting point: San Angelo Test Facility shop Direction: south

Did the telltale illuminate? (X)YES ()NO

Time to Illuminate:

Illumination with ignition switch activation. Driving was not required.

TELLTALE ILLUMINATES WITHIN 20 MINUTES: (X)YES ()NO (fail)
--

Does the vehicle have a telltale that identifies which tire(s) is (are) under-inflated?
 ()YES (X)NO

After 5 minutes with the ignition locking system in the “Off” or “Lock” position, does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position?
 (X)YES ()NO (fail)

DATA SHEET 3 (Sheet 33 of 33)
TPMS OPERATIONAL PERFORMANCE

SCENARIO J – Left Front, Left Rear, Right Rear, Right Front Tire Deflation at GVWR

Deactivate the ignition locking system and then re-start the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)Yes ()No

TIRE INFLATION PRESSURES AND TEMPERATURES AFTER TELLTALE ILLUMINATION:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After vehicle cool down period: Ambient Temperature: <u>24.3°C (75.7°F)</u> Vehicle cool down period: <u>60</u> minutes				
Inflation Pressure	142.0 kPa (20.6 psi)	142.9 kPa (20.7 psi)	142.2 kPa (20.6 psi)	143.2 kPa (20.8 psi)
Tire Sidewall Temp	24.8°C (76.6°F)	24.4°C (75.9°F)	24.6°C (76.3°F)	24.6°C (76.3°F)
San Angelo Test Facility Shop Floor Temp	22.8°C (73.0°F)	23.4°C (74.1°F)	22.8°C (73.0°F)	23.4°C (74.1°F)

After the cool down period of approximately one hour, restart the vehicle engine. Does the telltale re-illuminate and stay illuminated when the ignition locking system is activated to the “On” or “Run” position? (X)YES ()NO (fail)

TELLTALE EXTINGUISHMENT:

RE-ADJUSTED TIRE INFLATION PRESSURES:

Execution Procedure	LF Tire	LR Tire	RR Tire	RF Tire
After cool down period; Re-adjusted Inflation Pressure:	210.1 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.0 kPa (30.5 psi)	210.1 kPa (30.5 psi)

Is it necessary to drive the vehicle to extinguish the telltale? ()YES (X)NO

TEST RESULTS

TPMS Performance Test Results (PASS/FAIL)

PASS

Left front, left rear, right rear, and right front tires were deflated at GVWR.

REMARKS: None

RECORDED BY: R.N. Gregg

DATE: November 27, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 4 (Sheet 1 of 2)
Malfunction Detection

SCENARIO K – Malfunction Detection Test at GVWR

TEST DATE: November 28, 2006 LAB: SATF VEHICLE NHTSA NO: C75100

Time: Start: 10:12 am ; End 12:12 pm
Ambient Temperature: Start: 21.0°C (69.8°F) ; End 22.1°C (71.8°F)
Odometer Reading: Start: 412 km (256 mi) ; End 472 km (293 mi)
Fuel Level: Start: Full ; End Near full

TPMS TYPE: (☒) Direct (☐) Indirect (☐) Other

TPMS MALFUNCTION TELLTALE:

(☐)Dedicated stand-alone (☒)Combination low tire pressure warning/malfunction telltale

METHOD OF MALFUNCTION SIMULATION:

Describe method of malfunction simulation: TPMS sensor was removed from the right front tire/wheel and a non-TPMS valve stem was installed.

Combination Low Tire Pressure Warning /Malfunction Telltale

Note see Data Sheet 3 (Sheet 3 of 33) for Test Weight.

Driving in first direction:

Starting point: San Angelo Test Facility shop Direction: south
Cumulative vehicle driving time at a vehicle speed of 75± 25 km/h excluding time periods when brake pedal was applied. Drive the vehicle for 15-17 minutes or until the telltale illuminates, whichever occurs first.

Did the telltale illuminate? (☒)YES (☐)NO

20:29 minutes (stopwatch time) 29.0 km (18.0 mi) distance

Max speed: 86.1 km/hr (53.5 mph)

Total Driving Time: 21:41 minutes (V-Box time)

COMBINATION MALFUNCTION TELLTALE ILLUMINATES (FLASHING AND ILLUMINATION SEQUENCE) WITHIN 20 MINUTES: (<input type="checkbox"/>)YES (<input checked="" type="checkbox"/>)NO

DATA SHEET 4 (Sheet 2 of 2)
Malfunction Detection

SCENARIO K – Malfunction Detection Test at GVWR

TPMS MALFUNCTION PERFORMANCE TEST RESULTS (PASS/FAIL)

Right front wheel/tire with non-TPMS valve stem was installed at GVWR.

N/A
(INDICANT
TEST ONLY)

REMARKS: For malfunction simulated, the telltale showed solid illumination only. This
vehicle was manufactured before FMVSS 138 malfunction performance requirements
become effective on September 1, 2007.

RECORDED BY: R.N. Gregg

DATE: November 28, 2006

APPROVED BY: Kenneth H. Yates

DATA SHEET 5 (Sheet 1 of 3)
TPMS WRITTEN INSTRUCTIONS

TEST DATE: November 28, 2006 LAB: SATF VEHICLE NHTSA NO: C75100

Does the Owner's Manual provide an image of the Low Tire Pressure Warning Telltale symbol (and an image of the TPMS Malfunction Telltale warning ("TPMS"), if a dedicated telltale is utilized for this function)? ☒ YES ☐ NO

The following statement, in the English language, is provided verbatim in the Owner's Manual. ☒ YES ☐ NO

"Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

"As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated. Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-inflation also reduces fuel efficiency and tire tread life, and may affect the vehicle's handling and stopping ability.

"Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

DATA SHEET 5 (Sheet 2 of 3)
TPMS WRITTEN INSTRUCTIONS

As specified, the following sections, in the English language, are required verbatim in paragraph form in the Owner's Manual:

The following statement is required for all vehicles certified to the standard starting on September 1, 2007 and for vehicles voluntarily equipped with a compliant TPMS MIL before that time.

"Your vehicle has also been equipped with a TPMS malfunction indicator to indicate when the system is not operating properly.

Statement is provided verbatim: ()YES ()NO (X)N/A

For vehicles with a dedicated MIL telltale, add the following statement:

The TPMS malfunction indicator is provided by a separate telltale, which displays the symbol "TPMS" when illuminated.

Statement is provided verbatim: ()YES ()NO (X)N/A

For vehicles with a combined low tire pressure/MIL telltale, add the following statement:

The TPMS malfunction indicator is combined with the low tire pressure telltale. When the system detects a malfunction, the telltale will flash for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists.

Statement is provided verbatim: ()YES ()NO (X)N/A

The following statement is required for all vehicles certified to the standard starting on September 1, 2007 and for vehicles voluntarily equipped with a compliant TPMS MIL before that time.

When the malfunction indicator is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly."

Statement is provided verbatim: ()YES ()NO (X)N/A

DATA INDICATES COMPLIANCE: PASS/FAIL

PASS/FAIL: N/A

DATA SHEET 5 (Sheet 3 of 3)
TPMS WRITTEN INSTRUCTIONS

Does the Owner's Manual include the following (allowable) information?

- ☒ Significance of the low tire pressure warning telltale illuminating
- ☒ A description of corrective action to be undertaken
- ☒ Whether the tire pressure monitoring system functions with the vehicle's spare tire (if provided)
- ☒ How to use a reset button, if one is provided
- ☒ The time for the TPMS telltale(s) to extinguish once the low tire pressure condition or the malfunction is corrected

REMARKS: FMVSS 138 malfunction performance requirements do not become effective
until September 1, 2007.

RECORDED BY: R.N. Gregg

DATE: November 28, 2006

APPROVED BY: Kenneth H. Yates

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO	CAL. DATE	NEXT CAL. DATE
STOPWATCH	WESTCLOX QUARTZ STOPWATCH	NONE	N/A	N/A
V-BOX RECORDING DEVICE	RACELOGIC V-BOX III	SERIAL #030209	2/23/2006	2/23/2007
AMBIENT TEMPERATURE GAUGE	FLUKE 50D K/J THERMOMETER	SERIAL #80840101	7/26/2006	7/26/2007
LASER TEMPERATURE GAUGE (TIRES AND GROUND)	RAYNGER ST20 PRO NON- CONTACT INFRARED THERMOMETER	SERIAL #2065640101-0014	8/10/2006	8/10/2007
AIR PRESSURE GAUGE	ASHCROFT GENERAL PURPOSE DIGITAL GAUGE	MODEL #25C1005 PS02L100-B1 SERIAL #1003098	12/15/2005	12/15/2006
FLOOR SCALES (VEHICLE)	INTERCOMP SW DELUXE SCALES	PART #100156 SERIAL #27032382	8/10/2006	8/10/2007
PLATFORM SCALE (BALLAST)	HOWE RICHARDSON	MODEL #6401 SERIAL #0181- 5509-26	8/10/2006	8/10/2007

SECTION 5
PHOTOGRAPHS



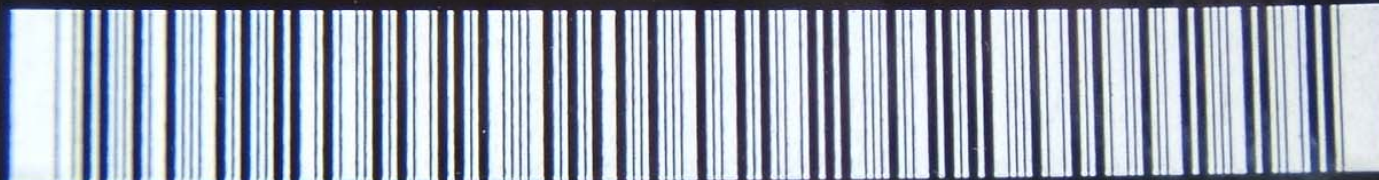
2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO.138

FIGURE 5.1
¾ FRONTAL VIEW FROM LEFT SIDE OF VEHICLE

MFD. BY: TOYOTA MOTOR MANUFACTURING,
KENTUCKY, INC. 06/06

GVWR 4345LB GAWR FR 2668LB RR 2359LB
THIS VEHICLE CONFORMS TO ALL APPLICABLE
FEDERAL MOTOR VEHICLE SAFETY, BUMPER, AND
THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE.

4T1BE46K47U038100 PASS. CAR



C/TR: 4Q2/FB40 ACV40L-CEANKA
A/TM: -03A/U250E

24183

2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.2
VEHICLE CERTIFICATION LABEL



TIRE AND LOADING INFORMATION
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION
RENSEIGNEMENTS RELATIFS AUX PNEUS ET À LA CHARGE DU VÉHICULE
CONSULTER LE GUIDE DU PROPRIÉTAIRE POUR DE PLUS AMPLES RENSEIGNEMENTS

SEATING CAPACITY | **TOTAL** | **FRONT** | **REAR**
NOMBRE DE PLACES | **TOTAL : 5** | **AVANT : 2** | **ARRIÈRE : 3**

The combined weight of occupants and cargo should never exceed **410kg** or **900lbs**.
La charge du véhicule (occupants et bagages) ne doit jamais dépasser **410kg** ou **900lbs**.

ORIGINAL TIRE SIZE DIMENSIONS DES PNEU D'ORIGINE		COLD TIRE INFLATION PRESSURE PRESSION DE GONFLAGE À FROID	
FRONT/AVANT	P215/60R16	FRONT/AVANT	210 kPa, 30PSI
REAR/ARRIÈRE	P215/60R16	REAR/ARRIÈRE	210 kPa, 30PSI
SPARE TIRE PNEU DE SECOURS		COLD TIRE INFLATION PRESSURE PRESSION DE GONFLAGE À FROID	
T155/70D17		420 kPa, 60PSI	

3M
42661-06482

2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.3
VEHICLE PLACARD



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.4
TIRE SHOWING BRAND



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.5
TIRE SHOWING MODEL



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.6
TIRE SHOWING SIZE



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.7
TIRE SHOWING DOT SERIAL NUMBER



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.8
TIRE SHOWING MAX LOAD RATING AND
MAX COLD INFLATION PRESSURE



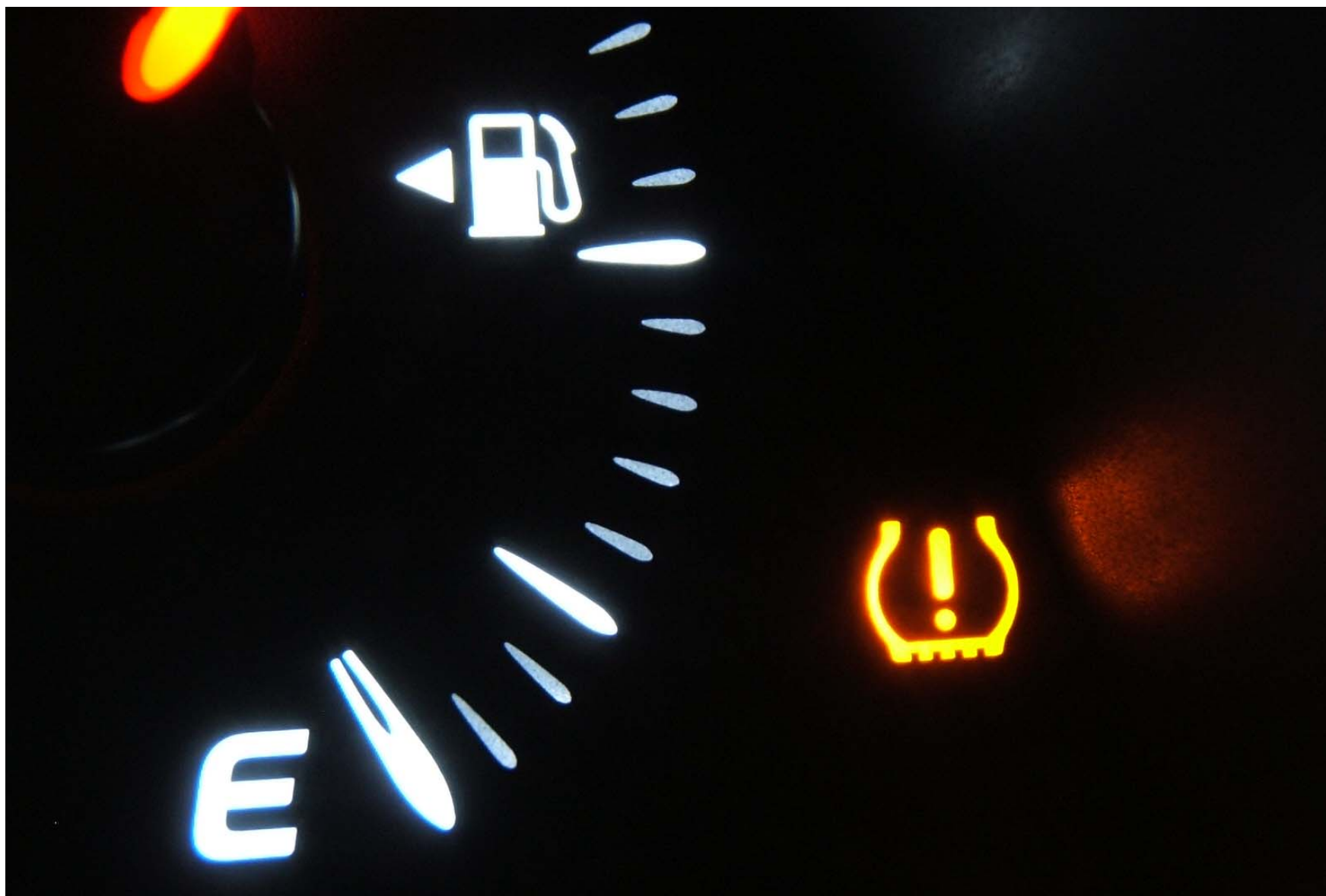
2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.9
TIRE SHOWING SIDEWALL/TREAD CONSTRUCTION



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.10
RIM SHOWING VALVE STEM



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.11
INSTRUMENT PANEL SHOWING COMBINATION LOW TIRE
PRESSURE WARNING AND MALFUNCTION TELLTALE



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.12
TEST INSTRUMENTATION MOUNTED ON VEHICLE



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.13
VEHICLE REAR SEAT BALLAST FOR GVWR LOAD



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.14
VEHICLE TRUNK BALLAST FOR GVWR LOAD



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

FIGURE 5.15
VEHICLE ON WEIGHT SCALES



2007 TOYOTA CAMRY
NHTSA NO. C75100
FMVSS NO. 138

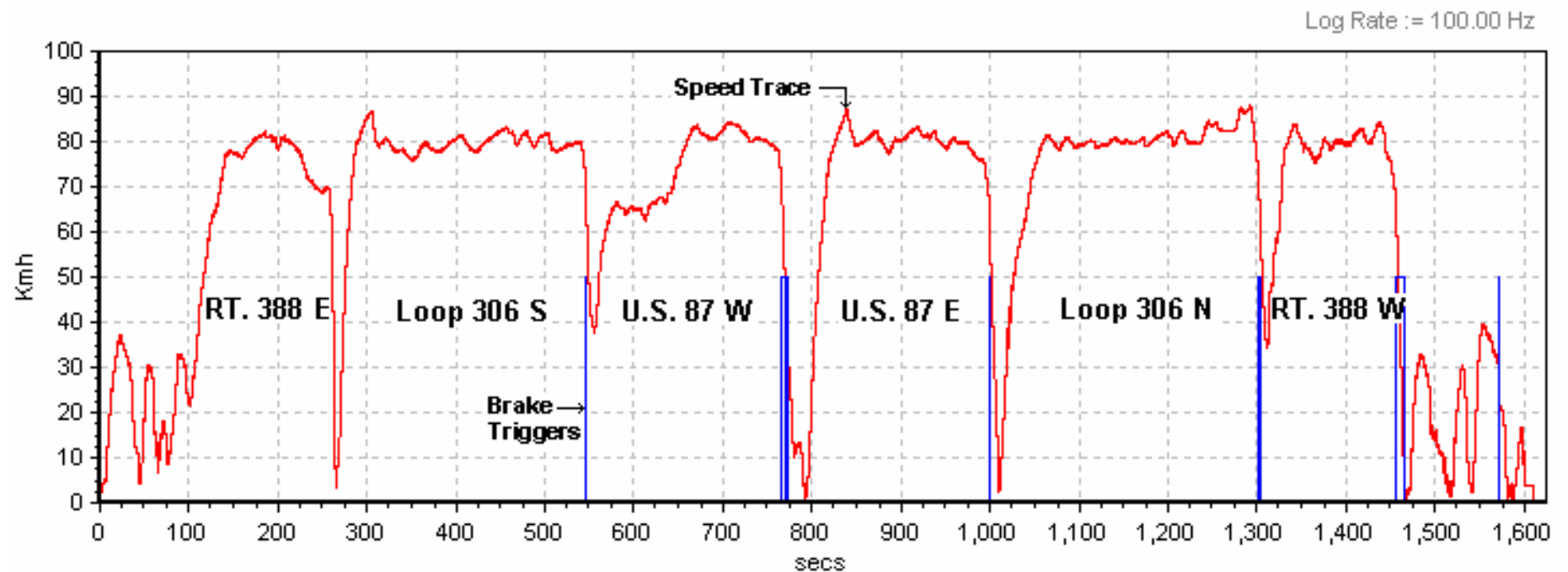
FIGURE 5.16
RIGHT FRONT WHEEL WITH SENSOR REMOVED
FOR MALFUNCTION DETECTION TEST

SECTION 6
TEST PLOTS

Scenario A: Left Front Tire
Test Date: 11/16/06
Data File Time: 26:50 minutes
Cumulative Driving Time: 20:20 minutes
Start Point: SATF shop

Calibration Phase

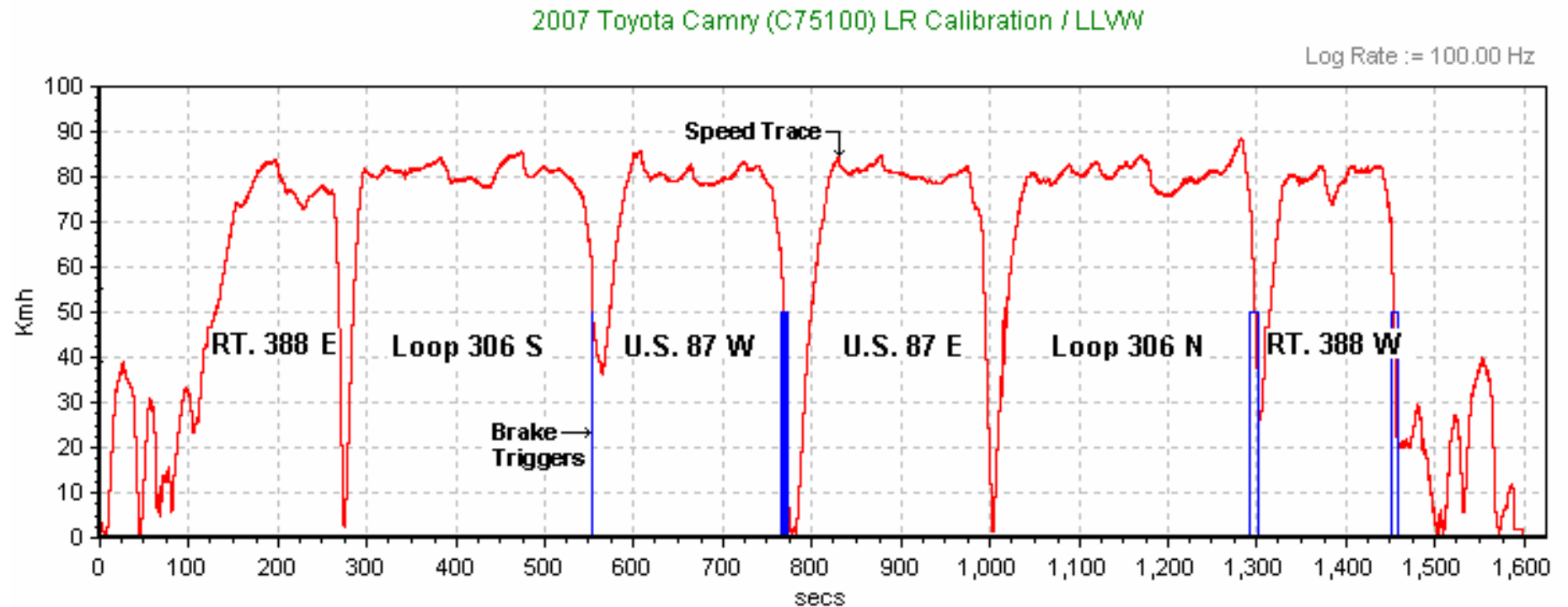
2007 Toyota Camry (C75100) LF Calibration / LLWW



LF Detection Phase: Telltale illuminated upon ignition activation. Driving was not required.

Scenario B: Left Rear Tire
Test Date: 11/16/06
Data File Time: 26:39 minutes
Cumulative Driving Time: 20:04 minutes
Start Point: SATF shop

Calibration Phase



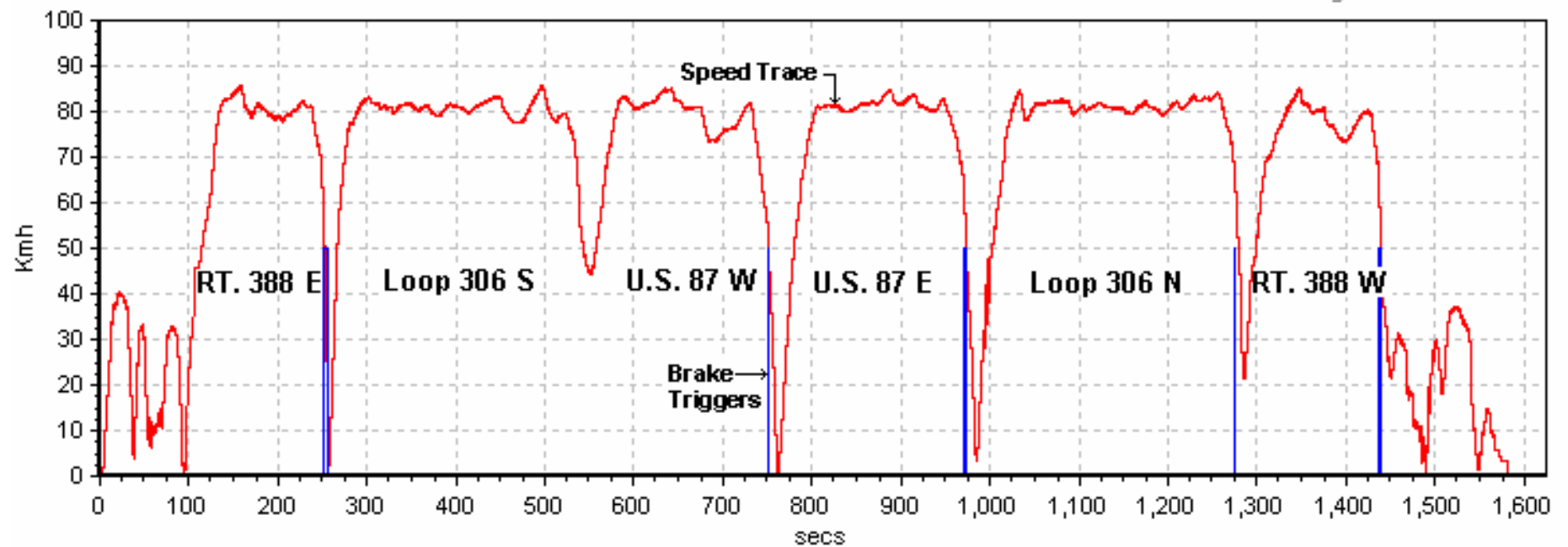
LR Detection Phase: Telltale illuminated upon ignition activation. Driving was not required.

Scenario C: Right Front Tire
Test Date: 11/16/06
Data File Time: 26:22 minutes
Cumulative Driving Time: 20:07 minutes
Start Point: SATF shop

Calibration Phase

2007 Toyota Camry (C75100) RF Calibration / LLWW

Log Rate := 100.00 Hz



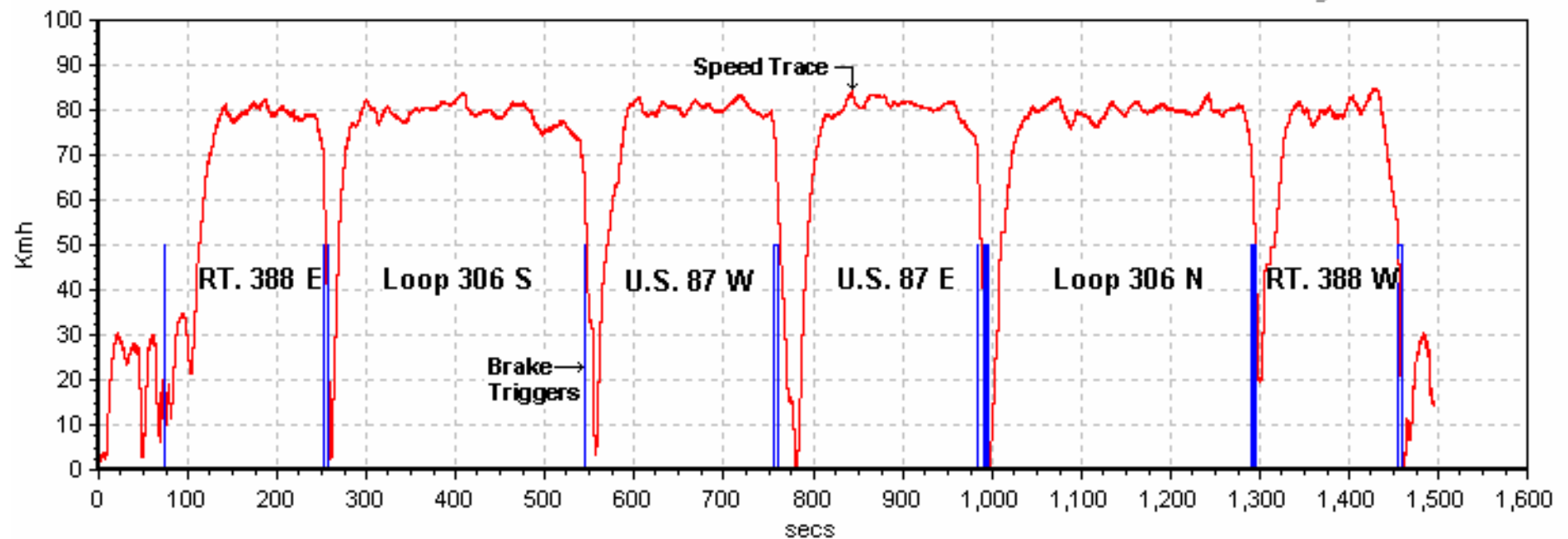
RF Detection Phase: Telltale illuminated upon ignition activation. Driving was not required.

Scenario D: Right Rear Tire
Test Date: 11/17/06
Data File Time: 24:55 minutes
Cumulative Driving Time: 20:18 minutes
Start Point: SATF shop

Calibration Phase

2007 Toyota Camry (C75100) RR Calibration / LLWW

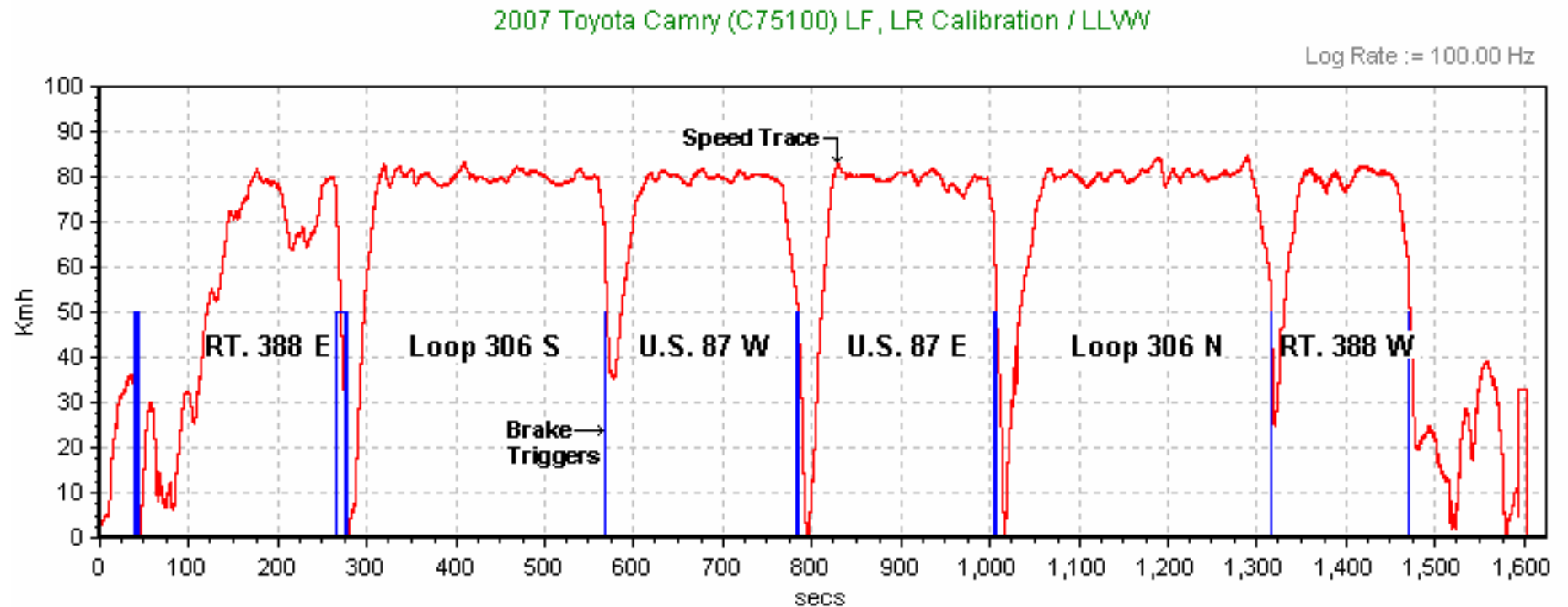
Log Rate := 100.00 Hz



RR Detection Phase: Telltale illuminated upon ignition activation. Driving was not required.

Scenario E: Left Front, Left Rear Tires
Test Date: 11/17/06
Data File Time: 26:44 minutes
Cumulative Driving Time: 20:10 minutes
Start Point: SATF shop

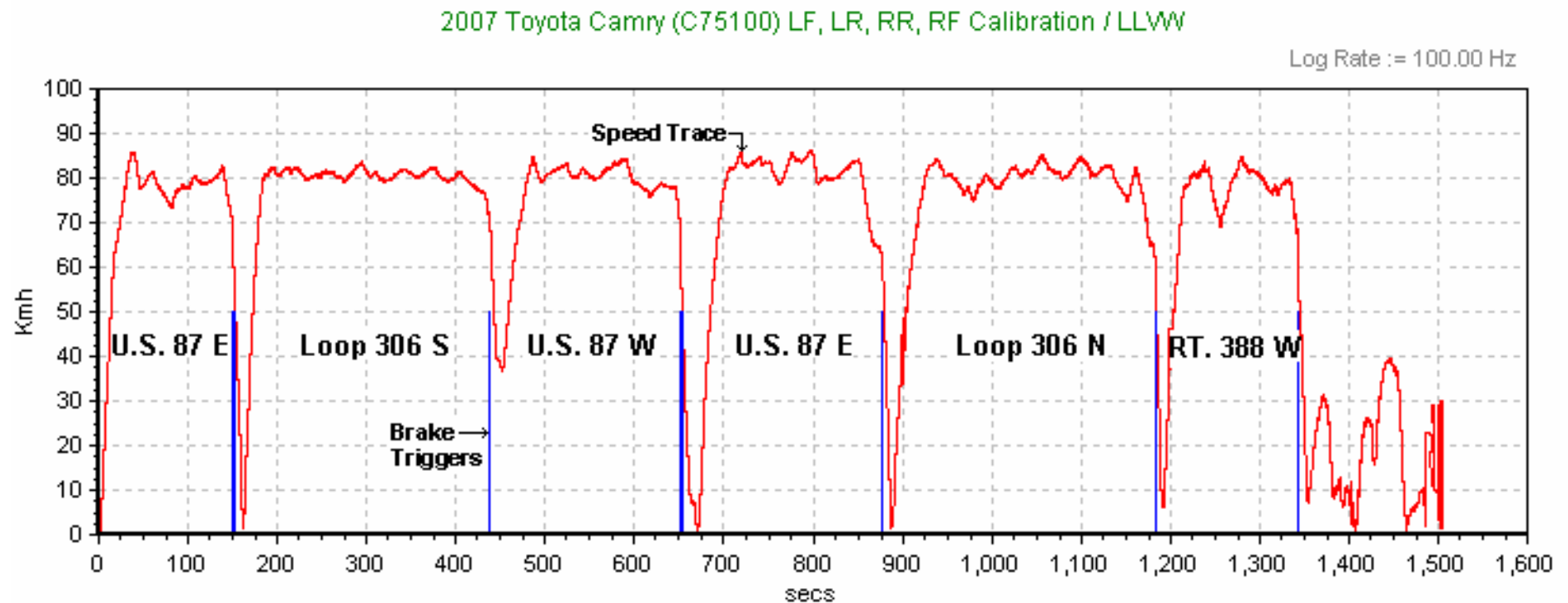
Calibration Phase



LF, LR Detection Phase: Telltale illuminated upon ignition activation. Driving was not required.

Scenario F: Left Front, Left Rear, Right Rear, Right Front Tires
Test Date: 11/17/06
Data File Time: 25:05 minutes
Cumulative Driving Time: 20:10 minutes
Start Point: SATF shop

Calibration Phase



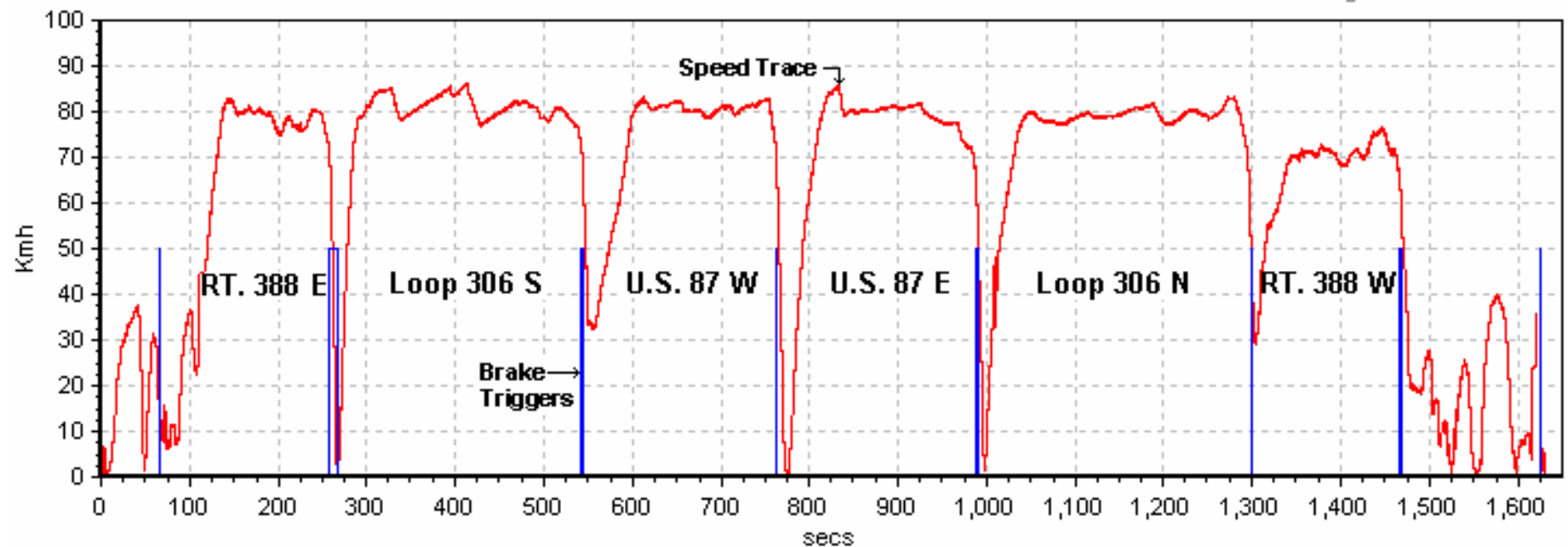
LF, LR, RR, RF Detection Phase: Telltale illuminated upon ignition activation. Driving was not required.

Scenario G: Left Front Tire
Test Date: 11/20/06
Data File Time: 27:12 minutes
Cumulative Driving Time: 20:29 minutes
Start Point: SATF shop

Calibration Phase

2007 Toyota Camry (C75100) LF Calibration / GVWR

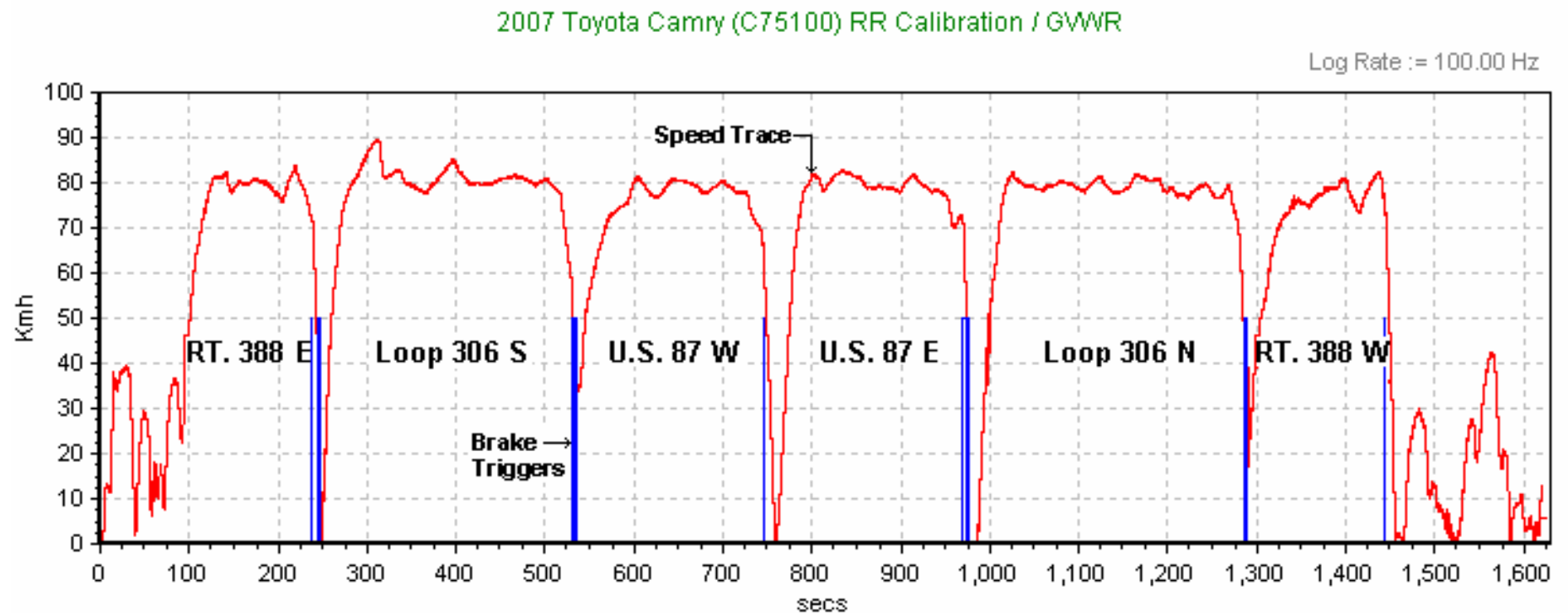
Log Rate := 100.00 Hz



LF Detection Phase: Telltale illuminated upon ignition activation. Driving was not required.

Scenario H: Right Rear Tire
Test Date: 11/21/06
Data File Time: 27:08 minutes
Cumulative Driving Time: 20:36 minutes
Start Point: SATF shop

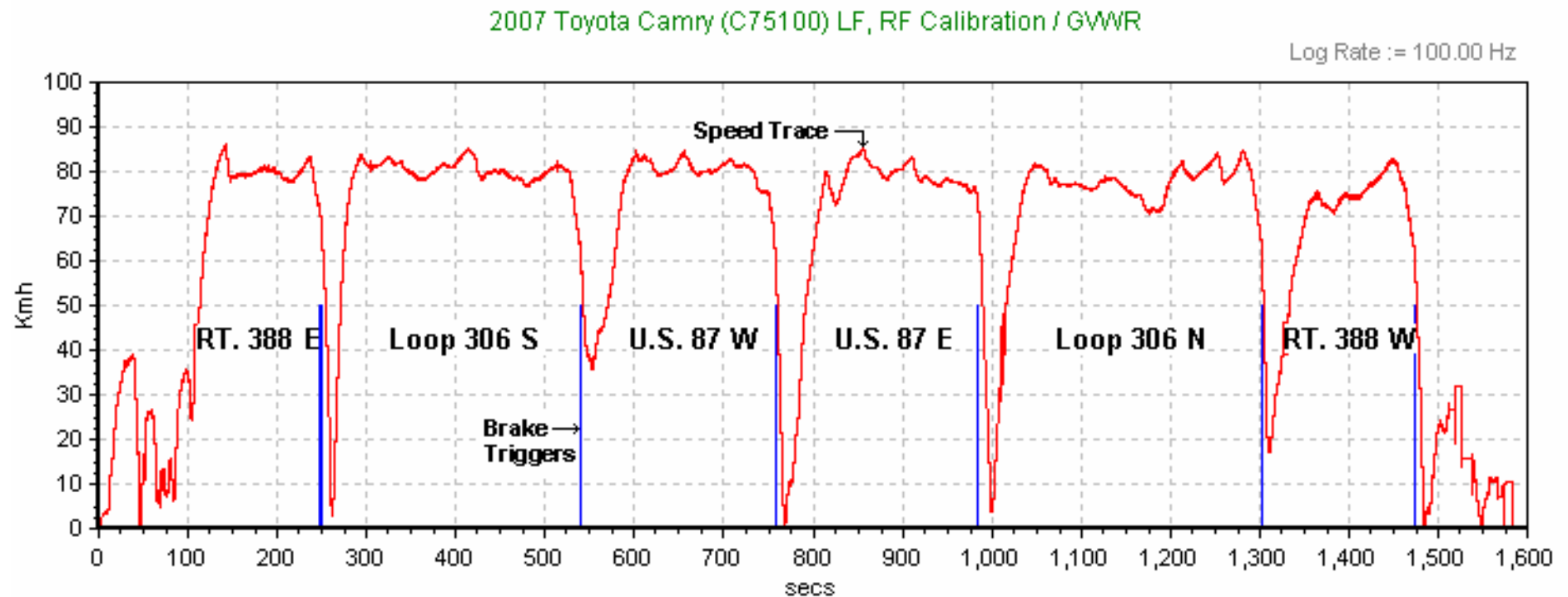
Calibration Phase



RR Detection Phase: Telltale illuminated upon ignition activation. Driving was not required.

Scenario I: Left Front, Right Front Tires
Test Date: 11/21/06
Data File Time: 26:23 minutes
Cumulative Driving Time: 20:14 minutes
Start Point: SATF shop

Calibration Phase



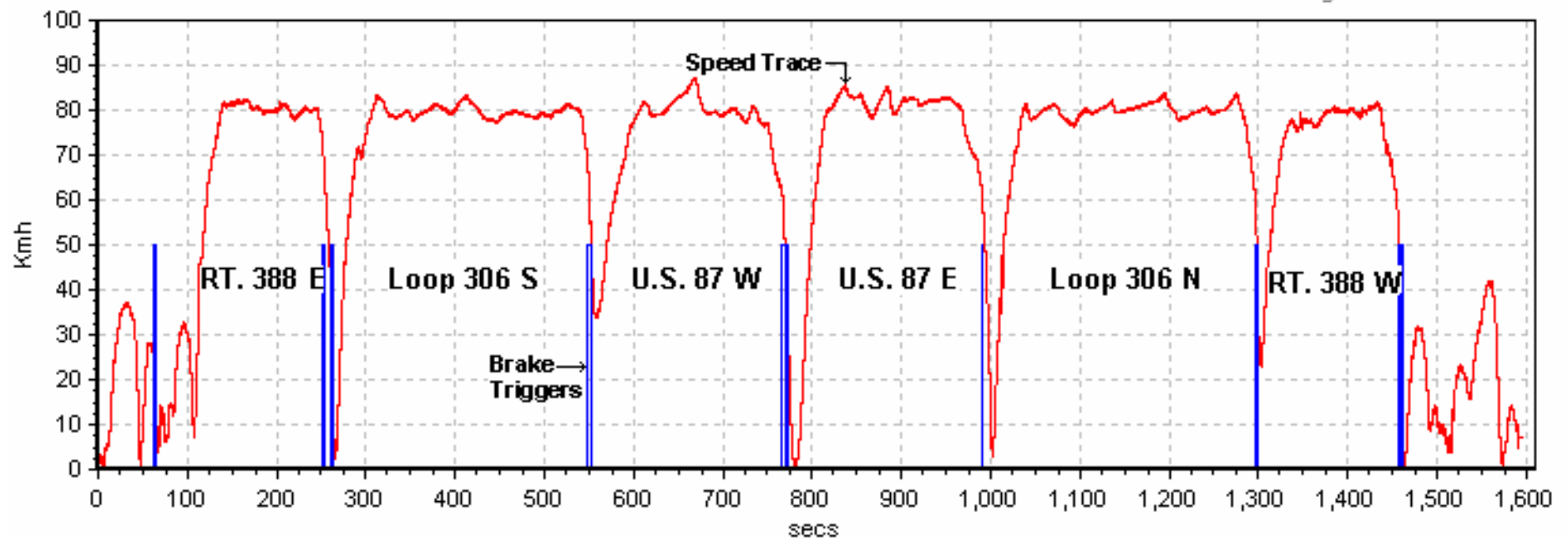
LF, RF Detection Phase: Telltale illuminated upon ignition activation. Driving was not required.

Scenario J: Left Front, Left Rear, Right Rear, Right Front Tires
Test Date: 11/27/06
Data File Time: 26:37minutes
Cumulative Driving Time: 20:16 minutes
Start Point: SATF shop

Calibration Phase

2007 Toyota Camry (C75100) LF, LR, RR, RF Calibration / GWR

Log Rate := 100.00 Hz

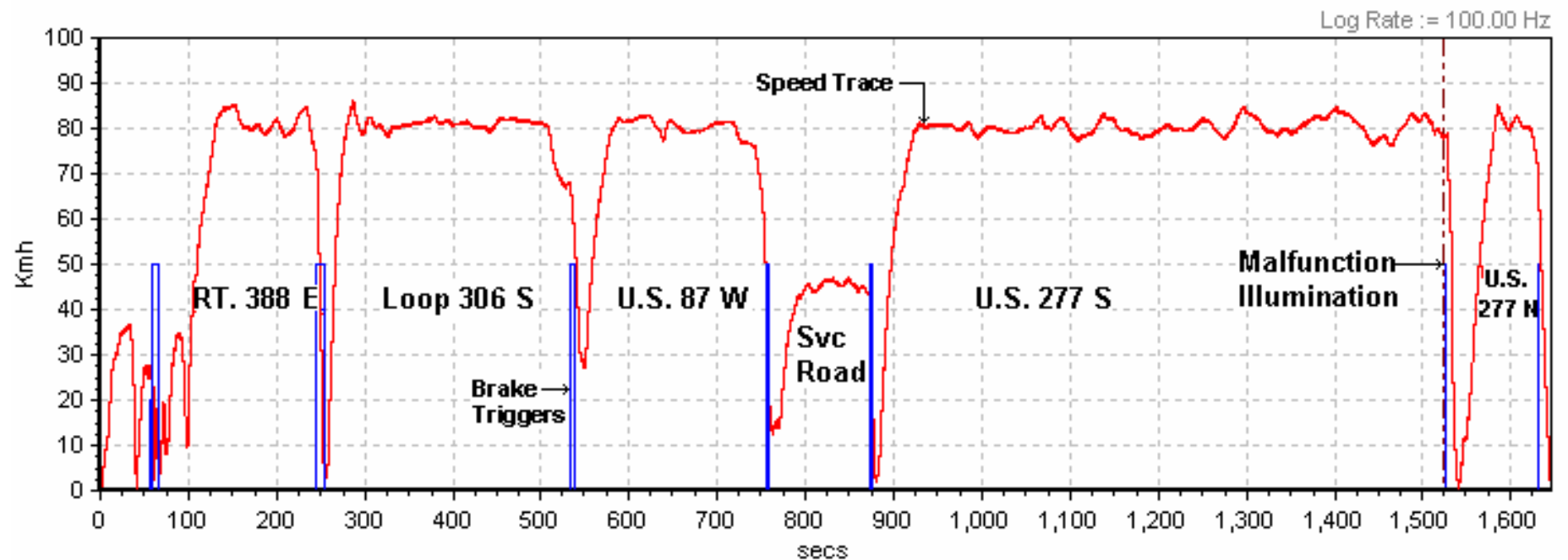


LF, LR, RR, RF Detection Phase: Telltale illuminated upon ignition activation. Driving was not required.

Scenario K: Sensor from Right Front Wheel Replaced with Non-TPMS Valve Stem
Test Date: 11/28/06
Data File Time: 27:26 minutes
Illumination: 21:41 minutes
Start Point: SATF shop

Malfunction Detection Test

2007 Toyota Camry (C75100) RF Combination Low Tire / Malfunction Telltale Illumination / GVWR



RF Malfunction Detection Telltale: Indicant test only.