REPORT NUMBER 114-GTL-09-003

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 114 THEFT PROTECTION

NISSAN MOTOR CO., LTD.
2009 NISSAN ALTIMA, PASSENGER CAR
NHTSA NO. C95202

GENERAL TESTING LABORATORIES, INC.
1623 LEEDSTOWN ROAD
COLONIAL BEACH, VIRGINIA 22443

July 20, 2009

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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15. Supplementary Notes

16. Abstract

Compliance tests were conducted on the subject 2009 Nissan Altima 4-door passenger car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-114-03-Draft-GTL-REVC for the determination of FMVSS 114 compliance.

Test failures identified were as follows:
None

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SECTION 1

PURPOSE OF COMPLIANCE TEST

1.0 PURPOSE OF TEST

A model year 2009 Nissan Altima passenger car was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 114 testing to determine if the vehicle was in compliance with the requirements of the standard. FMVSS 114 specifies requirements to decrease the likelihood that a vehicle is stolen, or accidentally set in motion.

1.1 The test vehicle was a 2009 Nissan Altima Passenger Car. The vehicle was identified as follows:

A. Vehicle Identification Number: 1N4AL21E29N438896

B. NHTSA No.: C95202

C. Manufacturer: NISSAN MOTOR CO., LTD.

D. Manufacture Date: 10/08

E. Color: White

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 114 testing on April 7, 2009.

SECTION 2

TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 TEST PROCEDURE

All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedure TP-114-03-Draft-GTL-REVC and General Testing Laboratories, Inc. (GTL) Test Procedure, TP-114-03-Draft, “Theft Protection and Rollaway Prevention”.

2.1 SUMMARY OF RESULTS

Test data indicate the FMVSS 114 requirements appear to have been satisfied. All test data resulting from the tests were recorded on test data sheets in Section 3.

SECTION 3

TEST DATA

3.0 TEST RESULTS

The following data sheets document the results of FMVSS 114 testing on the 2009 Nissan Altima.

FMVSS 114, THEFT PROTECTION
DATA SHEET 1 – VEHICLE IDENTIFICATION

TEST DATE: 04/07/09 LAB.: General Testing Laboratories
CONTRACT: DTNH22-06-C-00032 VEH. NHTSA NO.: C95202
VIN: 1N4AL21E29N438896 BUILD DATE: 10/08

MY/MAKE/MODEL/BODY STYLE: 2009 Nissan Altima

TRANSMISSION TYPE:
Automatic ____; Manual ____; Other __X__ (describe: CVT)

DRIVE TRAIN TYPE:
Front Wheel __X___; Rear Wheel _____; 4-Wheel

FUEL TANK LEVEL: 100 (% OF max.) MILEAGE: 47

VEHICLE STARTING SYSTEM:

Location of the starting system:
On Dash Just to Right Side of Steering Column

Selectable settings:
Lock/Off, Accessory, On/Run,

Explain how the system is activated:
Push start/stop button once to change to accessory, two times to change to on, three times to return to off position.

KEY

Description of the key:
Electronic Intelligent key

STARTING SYSTEM ACTIVATION

Describe how the key is inserted into the starting system:
The electronic key is inserted into the starting system when (1)The FOB is inside the vehicle and (2) The operator pushes the start/stop button.

Describe how the key is used to activate the starting system:
The act of pushing the start/stop button enables and ID verification process that allows the code to be inserted into the starting system .

Describe how the key is removed from the starting system:
The electronic key is removed from the starting system when (1) The transmission is in The “park” position, (2) the engine is shut off, and (3) a door is then opened (in that order)

FMVSS 114, THEFT PROTECTION
DATA SHEET 1 continued

GEAR SELECTION CONTROL

Describe the gear selection control:
Shift lever between front seats on center console.

Describe how the gear selection control is activated:
Depress foot brake pedal, push button on front of shifter knob and move to desired gear.

Describe all of the selectable settings:
Park, Reverse, Neutral, Drive (drive has +/- selection)

IMMOBILIZER

Is the vehicle equipped with an immobilizer YES X NO

Describe the immobilizer device and how it prevents vehicle theft (if equipped):
Electronic coded key. Engine will not run without the correctly coded key.

OPTIONAL RELEASE DEVICES

Describe if the vehicle is equipped with optional release devices:
Vehicle has release device for gear shifter.

OPTIONAL RELEASE DEVICES:

Key Removal Gear Selection Control X None Other

VEHICLE FLUIDS

Check all vehicle fluids and adjust to the proper levels for operation: Full

VEHICLE TIRE PLACARD INFORMATION

Vehicle Mfg. Recommended Tire Inflation Pressure
(kPa): Front 220 Rear 220

TIRE INFLATION PRESSURES:

Measured (kPa): LF 220 LR 220 RF 220 RR 220

WEIGHT

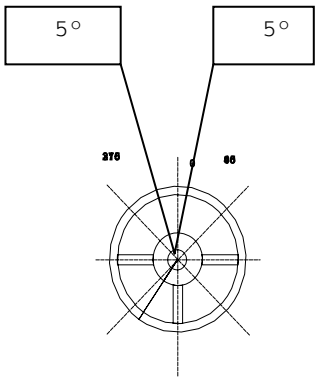
Vehicle Curb Weight(kg): 1434.5 Weight of Driver (kg): 91 (target = 91kg)

FMVSS 114, THEFT PROTECTION
DATA SHEET 2

VEH. NHTSA NO.: C95202 TEST DATE: 04/07/09

REQUIREMENT S5.1.1	PASS	FAIL
Engine cannot be started without using the key _X_ Yes ____ No	X	

With key removed, steering wheel locks:
Yes: _X_ No:_____



Identify locking position(s) on wheel using arrow(s)

Clockwise: 5 (degrees)
Counterclockwise: 5 (degrees)

*Removing key does not lock steering wheel until the driver's door is opened.

Key removal prevents forward self-mobility: Yes: X No:_____

If yes describe: If key is removed from vehicle while the engine is off, the gear selector will lock in park position.

When key is removed from the starting system, starting of the engine or motor and either steering or self mobility is prevented. YES*	X	

REMARKS: If physical key device is removed from vehicle while engine is running, steering and driving are un-affected until the first time the engine is turned off, at which time the engine cannot be re-started and the steering locks.

If physical key device is removed from vehicle while engine is off, the engine cannot be started and the gear shift selector is locked in the park position and steering wheel locks.

FMVSS 114, THEFT PROTECTION
DATA SHEET 2 continued

REQUIREMENT S5.1.3	PASS	FAIL
An audible warning is activated whenever the key is in any starting system position with the exception of "on" and "start" and the door closest to driver's designated seating position is opened. Yes__X__ No ___ Identify ALL key/starting system position setting: Off/Lock, Accessory, On/Run, Start	X	

REQUIREMENT S5.1.4	PASS	FAIL
With the vehicle engine or motor shut down and the transmission gear selection control in any position other than "park"; The steering wheel can rotate without locking? Yes__X__ No_____	X	
The vehicle is free to roll forward? Yes__X__ No_____	X	

REMARKS:

RECORDED BY: G. Farrand DATE: 04/07/09

APPROVED BY: D. Messick

FMVSS 114, ROLLAWAY PREVENTION
DATA SHEET 3
(for vehicles equipped with transmission with a “park” position)

VEH. NHTSA NO.: C95202 TEST DATE: 04/07/09

REQUIREMENT S5.2.1	PASS	FAIL
The starting system prevents key removal in ALL gear selection control positions except “park”. Yes X No		
Can the gear selection control be placed between each gear selection position and will it remain there without assistance? Yes X No		
If yes, can the key be removed from the starting system? Yes No X	X	
If the key can be removed from the vehicle starting system when the gear selection control is not locked in “park”, a mechanism shall exist which, upon key removal, the vehicle transmission or gear selection control shall become locked in “park” as the direct result of removing the key. If such a mechanism exists, describe the mechanism and its function: The physical key device can be removed from vehicle, but the stored key code stays in memory until vehicle is in park, turned off, and the door is opened.		

REQUIREMENT S5.2.2	PASS	FAIL
The gear selection control is locked in the “park” position when the key is removed from the starting system. Yes X No	X	

REMARKS:

DATA SHEET 3 continued

REQUIREMENT S5.2.3	PASS	FAIL
ELECTRICAL FAILURE (Battery Discharge) In the event of an electrical failure, key removal from the starting system when the transmission or gear selection control is not locked in "park" is permitted". Yes __X___ No_____	X	
The vehicle is equipped with an override device that permits key removal from the starting system when the transmission or gear selection control is not locked in "park". Yes_____ No __X___	X	
If yes, select the type of override device equipped: Opaque Cover_____ No Cover_____ Describe the override device design and mode of activation (if equipped):	X	
FILL IN THE SECTION BELOW THAT APPLIES: OVERRIDE WITH AN OPAQUE COVER: The opaque surface cover prevents sight of and use of override device. Yes_____ No_____ The opaque surface cover can only be removed by using a screwdriver or other tool. Yes_____ No_____ As a direct result of removing the key from starting system, the following is prevented: Steering_____ or Self-Mobility_____ OVERRIDE WITH NO COVER The override device requires the use of a tool to activate. Yes_____ No_____ Simultaneous activation of the override device and removal of key from starting system is required. Yes_____ No_____ As a direct result of removing the key from the starting system, the following is prevented: Steering_____ or Self-Mobility_____	N/A* N/A*	

REMARKS:

DATA SHEET 3 continued

REQUIREMENT S5.2.4	PASS	FAIL
GEAR SELECTION CONTROL OVERRIDE DEVICE The vehicle is equipped with an override device that allows the user to move the gear selection control from "park" after the key has been removed from the starting system. Yes __X__ No_____ If yes, select the type of override device that is equipped: Override operated with a: Key_____ Opaque Cover __X__ No Cover_____ Describe the override device design and mode of activation (if equipped): Remove small cover on left side of shifter and insert a small screwdriver and push down while moving shift lever from the park position. **FILL IN THE SECTION BELOW THAT APPLIES:** OVERRIDE OPERATED WITH KEY: The key is required to operate the override device that allows the user to move the gear selection control from "park" after the key has been removed from the starting system. Yes_____ No_____ OVERRIDE WITH AN OPAQUE COVER The opaque surface cover prevents sight of and use of override device. Yes__X__ No_____ The opaque surface cover can only be removed by using a screwdriver or other tool. Yes__X__ No_____ As a direct result of removing the key from the starting system, the following is prevented: Steering ____X__ or Self-Mobility_____ OVERRIDE WITH NO COVER The override device requires the use of a tool to operate. Yes_____ No_____ Simultaneous activation of the override device and removal of key from starting system is required. Yes_____ No_____ As a direct result of removing the key from the starting system, the following is prevented: Steering_____ or Self-Mobility_____	X N/A X X N/A	

REMARKS:

DATA SHEET 3 continued

REQUIREMENTS S5.2.5	PASS	FAIL
VEHICLE FACING UPHILL ON 10% GRADE With the gear selection control in “park” measure movement of the vehicle down the slope upon releasing the service brake. Test grade: 11 % (9% to 15%) Measured movement: 15 mm (150mm maximum) **NOTE:** Repeat procedure if vehicle fails on grade in excess of 10%. Test grade: _____ % (9% to 10%) Measured movement: _____ mm (150 mm maximum) VEHICLE FACING DOWNHILL ON 10% GRADE With the gear selection control in “park” measure movement of the vehicle down the slope upon releasing the service brake. Test grade: 11 % (9% to 15%) Measured movement: 42 mm (150mm maximum) **NOTE:** Repeat procedure if vehicle fails on grade in excess of 10%. Test grade: _____ % (9% to 10%) Measured movement: _____ mm (150 mm maximum)	X X	see note

REMARKS:

DATA SHEET 3 continued

REQUIREMENTS S5.3	PASS	FAIL
VEHICLE FACING UPHILL ON 10% GRADE		
With the key in the "off" position, the transmission will shift out of "park" without the service brake being applied. Yes_____ No__X	X	
With the key in the "acc" position, the transmission will shift out of "park" without the service brake being applied. Yes_____ No__X	X	
With the key in the "on" position (engine off), the transmission will shift out of "park" without the service brake being applied. Yes____ No _X	X	
With the key in the "start" position, the transmission will shift out of "park" without the service brake being applied. Yes_____ No _X	X	
With the key in the "other" position (please specify), the transmission will shift out of "park" without the service brake being applied. Yes_____ No_____	N/A*	
Does the key stay between starting system positions without being held by operator? Yes_____ No_X	X	
If so, please describe.		
Brake force readings (force required to allow the transmission to shift out of "park"):		
The vehicle is equipped with adjustable pedals: Yes_____ No _X		
Fore Position: Aft Position (if applicable)		
Reading 1 25.3 N Reading 1_____ Reading 2 25.8 N Reading 2_____ Reading 3 23.1 N Reading 3_____ Reading 4 26.2 N Reading 4_____ Reading 5 25.4 N Reading 5_____ Avg. 25.2 N Avg. _____	X	

REMARKS: *MANUAL TRANSMISSION

RECORDED BY: G. Farrand DATE: 04/07/09

APPROVED BY: D. Messick

SECTION 4
TEST EQUIPMENT LIST

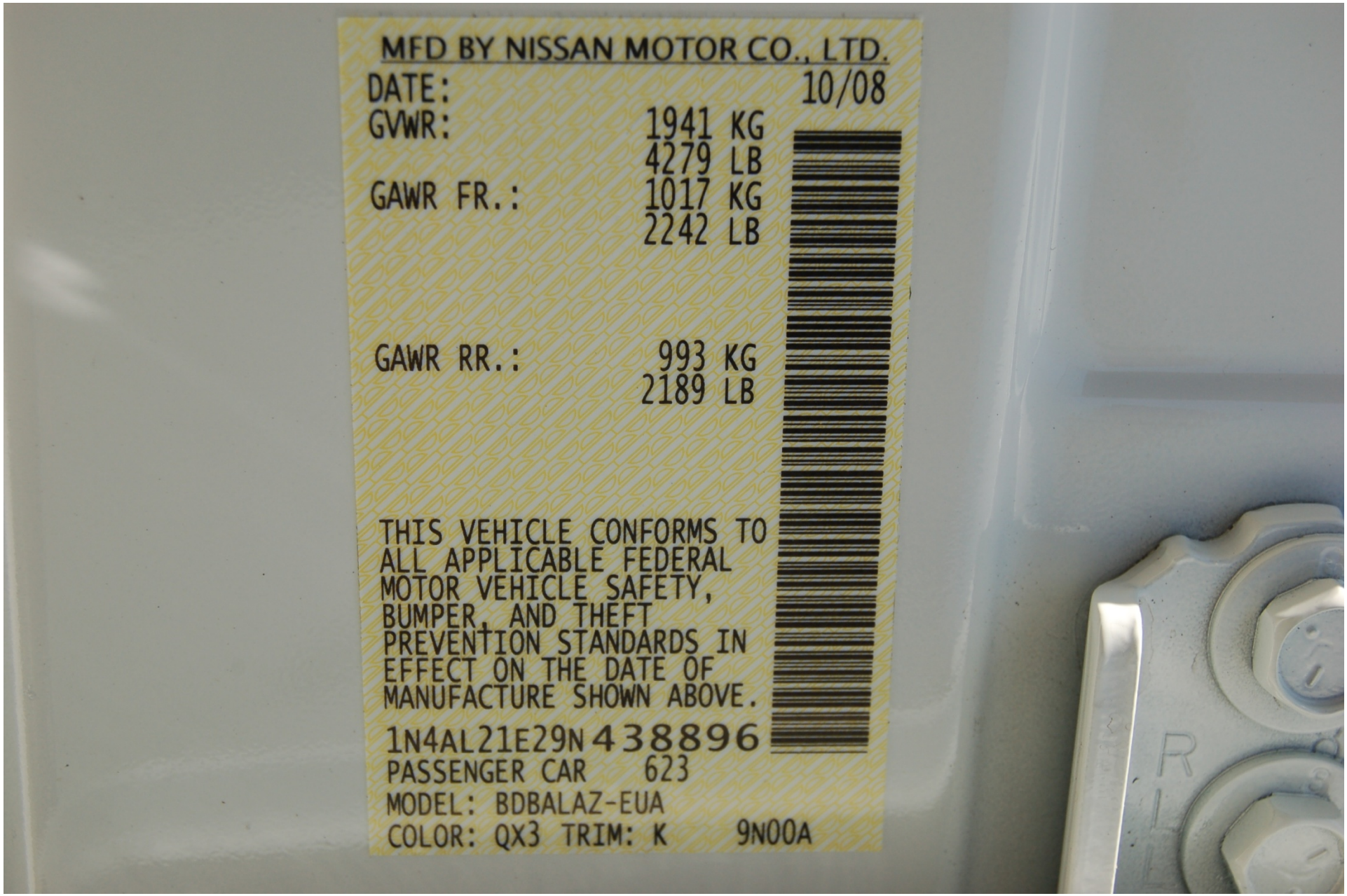
ITEM	MFR	MODEL	S/N	CAL. PERIOD	DATE OF NEXT CALIB.	REMARKS
SLR DIGITAL CAMERA	NIKON	D50	N/A	N/A	N/A	
TIRE PRESSURE GAUGE	WESKLER	45-0/100	107	12 MO.	03/10	
INCLINOMETER	MITUTOYO	PRO 360	950-315	N/A	BEFORE USE	
STEEL TAPE	STANLEY	FAT MAX	33-890	12 MO.	03/10	
WHEEL SCALES	INTERCOMP	SERIES 94	199744	12 MO.	04/10	
WHEEL SCALES	INTERCOMP	SERIES 94	199744	12 MO.	04/10	
WHEEL SCALES	INTERCOMP	SERIES 94	199744	12 MO.	04/10	
WHEEL SCALES	INTERCOMP	SERIES 94	199744	12 MO.	04/10	
SPRING SCALE	CHATILLON	DPP-10	4729	12 MO.	04/10	

SECTION 5

PHOTOGRAPHS

2009 NISSAN ALTIMA
NHTSA NO. C95202
FMVSS NO. 114

FIGURE 5.1
¾ FRONTAL VIEW FROM LEFT SIDE OF VEHICLE



2009 NISSAN ALTIMA
NHTSA NO. C95202
FMVSS NO. 114

FIGURE 5.2
VEHICLE CERTIFICATION LABEL

2009 NISSAN ALTIMA
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FMVSS NO. 114

FIGURE 5.3
VEHICLE TIRE INFORMATION LABEL

2009 NISSAN ALTIMA
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FMVSS NO. 114

FIGURE 5.4
CLOSE-UP VIEW OF ELECTRONIC KEY

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FMVSS NO. 114

FIGURE 5.5
ELECTRONIC KEY RECEPTACLE IN DASH

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NHTSA NO. C95202
FMVSS NO. 114

FIGURE 5.6
STARTING SYSTEM CONTROL

2009 NISSAN ALTIMA
NHTSA NO. C95202
FMVSS 114

FIGURE 5.7
TRANSMISSION GEAR SELECTION CONTROL

2009 NISSAN ALTIMA
NHTSA NO. C95202
FMVSS NO. 114

FIGURE 5.8
DEVICE WHICH ALLOWS MOVING GEAR SELECTOR OUT OF "PARK" POSITION

2009 NISSAN ALTIMA
NHTSA NO. C95202
FMVSS NO. 114

FIGURE 5.9
“NO KEY” WARNING