



TOYOTA



Lexus



Toyota Enhanced OBD II User Guide

Warnings

The exclamation point within the triangle is a warning sign alerting you of important instructions accompanying the product. Please observe all warnings.



Do not operate the vehicle indoors. A running engine produces lethal carbon monoxide exhaust fumes that can seriously harm or kill you if inhaled. Only run the vehicle motor outdoors with proper ventilation. Many scan tool operations do not require a running motor.



Do not attempt to operate or observe the scan tool while driving a vehicle. Driving requires the full attention of the driver. Operating or observing the scan tool will cause driver distraction and could cause a fatal accident.



Ensure the PC, cable, and OBD II adapter do not interfere with the vehicle controls. A cable dangling in front of the foot pedals, gear shifter, or steering wheel can interfere with vehicle operation and cause a fatal accident. Always ensure the PC, cable, and OBD II adapter are securely fastened out of the way. If the scan tool and PC cannot be safely attached as to not interfere with the vehicle controls, then do not drive the vehicle with the OBD II adapter connected to the vehicle.

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The "Product" is the complete Dyno-Scan for Windows product including hardware, software, user manual, and packaging.

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Congratulations on your purchase of an Auterra's Toyota Enhanced OBD II software package. Please take time to read through these operating instructions and become familiar with the operating procedure.

The Toyota Enhanced OBD II software is included with the Dyno-Scan™ for Windows software. A unique Toyota Enhanced Product Key is purchased to unlock the features. The upgrade works on all 1996 and newer Toyota, Lexus and Scion vehicles. The enhanced software allows you to:

- Read enhanced diagnostic trouble codes (DTCs) from systems like ABS and airbag
- Display enhanced DTC definitions from Body and Chassis systems
- Turn off the ABS and airbag light
- View and record enhanced parameters/sensors
- View vehicle state encoded and bit values

Supported Subsystems

The Toyota Enhanced package supports these vehicle subsystems:

- Engine / Climate Control System / Immobiliser
- Engine Stop And Go
- Hybrid Vehicle
- Transmission
- 4WD (4-Wheel Drive)
- T/M Control
- ABS (Antilock Brake System)
- TPWS (Tire Pressure Warning System)
- EMPS / EHPS (Electric Motor Assisted Power Steering)
- VRGS (Variable Gear Ratio Steering)
- EMS (Electromagnetic Suspension) / AHC (Active Height Control)
- KDSS

- Body / Gateway
- Body No 2
- Steering Pad
- Body No 3
- Body No 4
- Body No 5
- AVC-LAN Adopter
- Airbag / SRS (Supplemental Restraint System)
- OCC (Occupant Detect)
- Pre-Crash Safety
- Meter
- Clearance Sonar
- AFS (Adaptive Front Lighting System)
- Passenger Seat
- Rear Right Seat
- Rear Left Seat
- Right Rear Seat Switch
- Air-Conditioning
- Driver Door
- Passenger Door
- Rear Right Door
- Rear Left Door
- Tilt And Telescoping Steering Wheel
- Driver Seat
- Side Sunroof
- Mirror / Mirror Right
- Rain Sensor
- Combination Switch
- Smart Key
- Back Door
- Retractable Hardtop

- Immobiliser / Steering Lock
- Battery
- Wiper
- Mirror Left
- TDS (Theft Detection System)
- Power Source Control
- Master Switch
- Engine EFI / CSS (Cruise Control)
- ECT (Electronically Controlled Transmission)
- Hybrid Vehicle / CCS (Cruise Control)
- Hybrid Vehicle Battery

Requirements

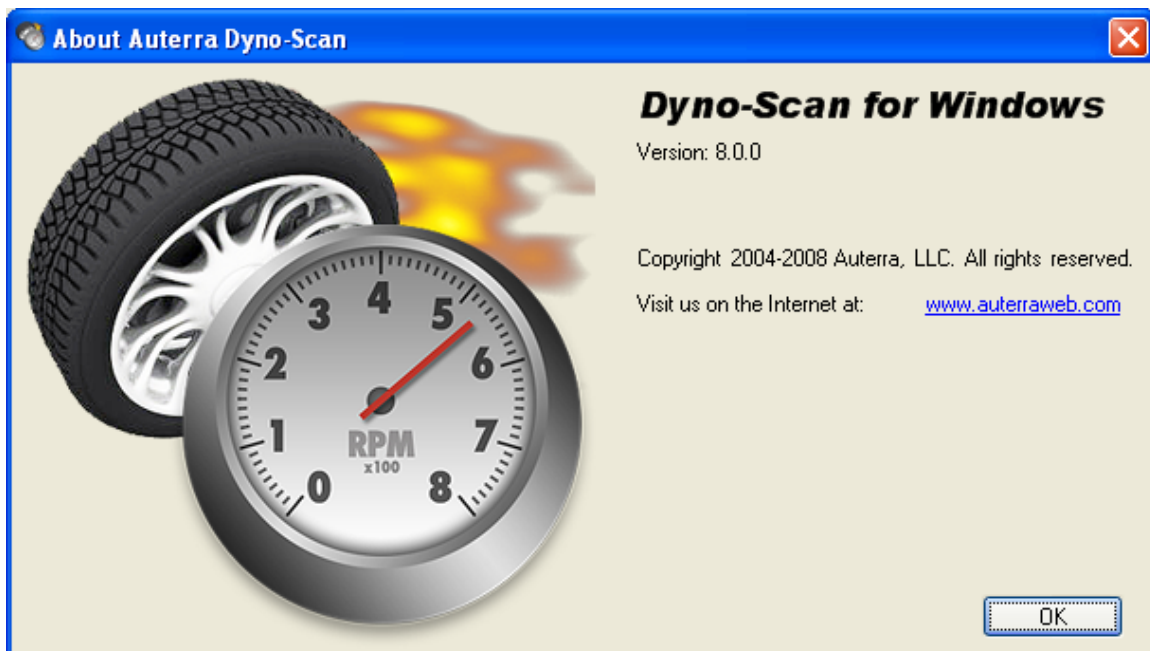
To use the S-200 Toyota Enhanced OBD II software package you must have one of these scan tool kits:

- A-302 Dyno-Scan for Windows CAN USB
- A-301 Dyno-Scan for Windows CAN
- A-500 DashDyno SPD
- A-501 DashDyno SPD ProPack

The following Auterra software is required:

- Dyno-Scan for Windows 8.0.0 or higher
- OBD II adapter firmware 3.06 or higher

Check the Dyno-Scan for Windows version in the Help > About Dyno-Scan...



If you have an older version of the Auterra Dyno-Scan for Windows software, just download the latest software from our web site Downloads page.

www.auterraweb.com/downloads.html

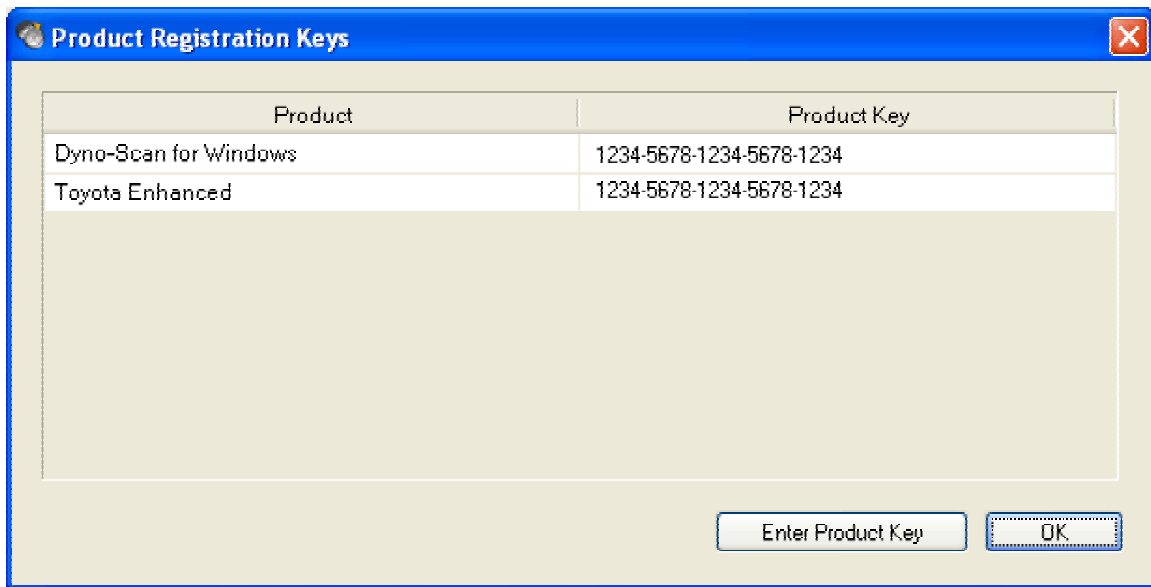
On Windows, you can check the OBD II adapter version using the Dyno-Scan software. After connecting to a vehicle, select Help > About Hardware. If the Hardware Adapter Version is 3.05 or earlier, please contact Auterra for an adapter software and/or hardware upgrade.

On DashDyno, the opening splash screen shows the "Ver B". If this is 3.05 or earlier, please contact Auterra for a DashDyno software upgrade.

Installation

The Toyota Enhanced OBD II software is already part of the version 8.0.0 or higher Dyno-Scan for Windows software. There is no CD ROM to be shipped – only a Product Key to unlock the features within the software.

- 1 Purchase the S-200 Toyota Enhanced OBD II software from the Auterra web site. You will also need to purchase any Dyno-Scan for Windows or DashDyno scan tool kit unless you already own one.
- 2 Email the following information to Auterra at: support@auterraweb.com
 - Your 4-digit order number used to purchase the S-200 Toyota Enhanced software. The order number is emailed to you after placing an order on our web site.
 - Your existing Dyno-Scan for Windows Product Key.
 - Your complete name and mailing address.
- 3 Auterra Support will respond to your email with a Toyota Enhanced Product Key. **Please keep this key in a safe place and do not lose it.**
- 4 Start the Dyno-Scan for Windows software.
- 5 Go to the Help > Product Registration Keys... menu option.
- 6 Press the Enter Product Key button and enter the Toyota Enhanced Product Key.



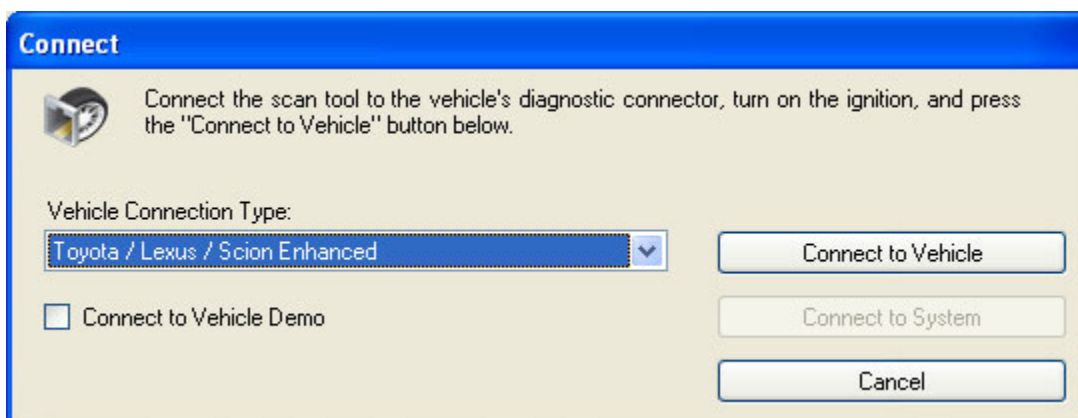
7 Congratulations! Your Toyota Enhanced software is now ready for use.

Using Toyota Enhanced Software

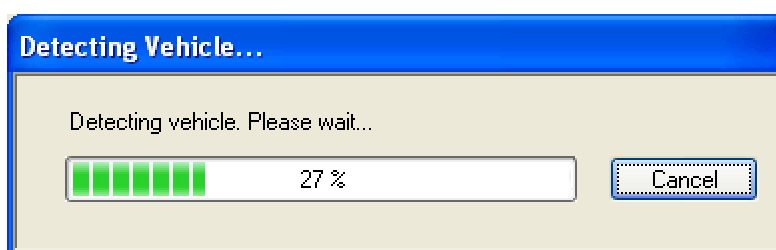
Using your Toyota Enhanced OBD II software is easy, and this section shows you how.

Connecting to Vehicle

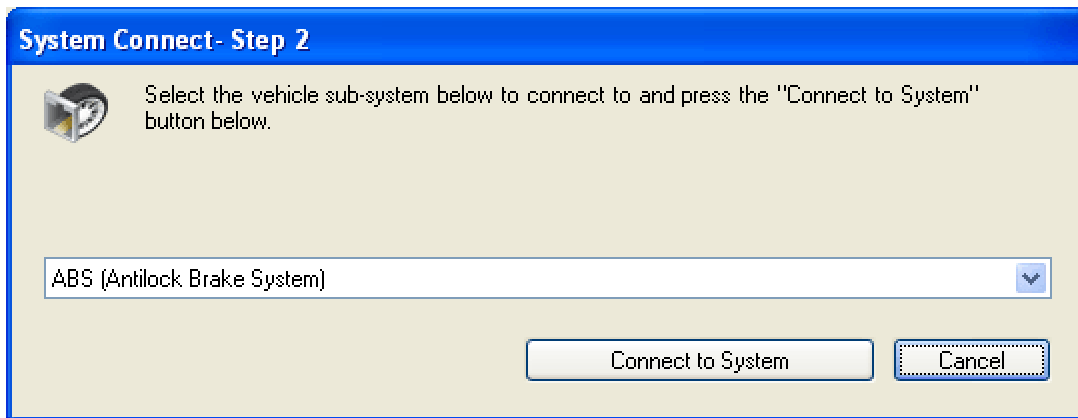
When connecting to a vehicle, the Connect dialog's Vehicle Connection Type dropdown will show a "Toyota / Lexus / Scion Enhanced" menu option. Select this option and press the "Connect to Vehicle" button.



The software will now detect the systems available on the vehicle.



After the vehicle is detected, select the system to connect to and press the "Connect to System" button.



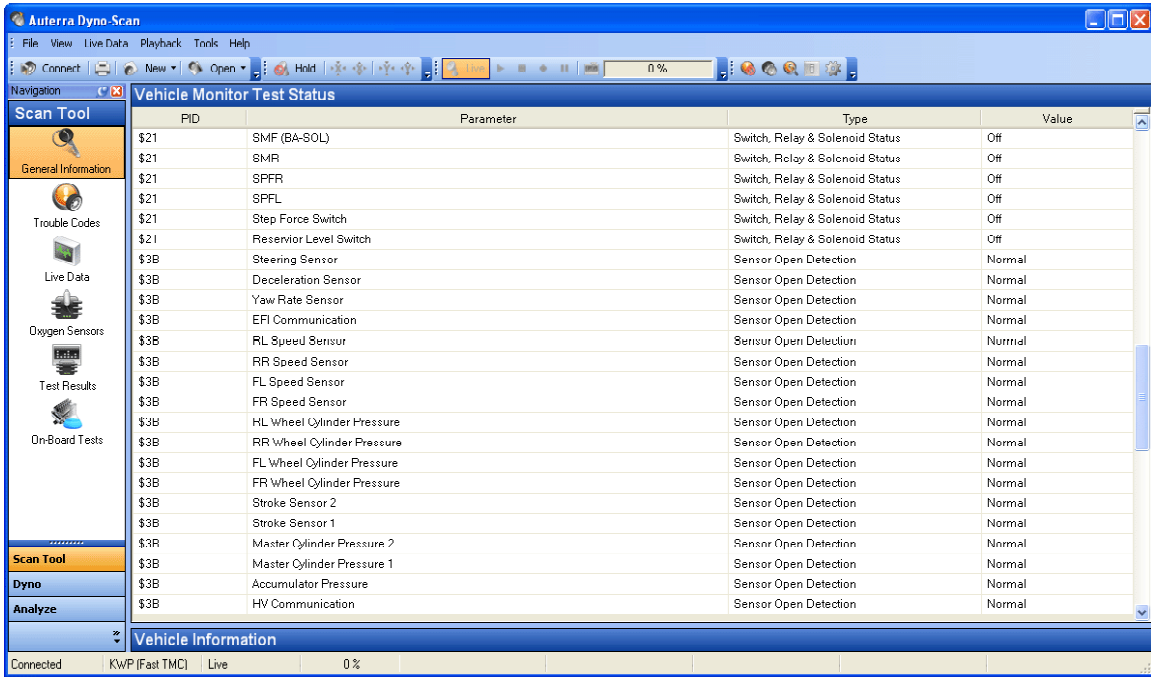
You are now connected to the selected Toyota Enhanced system.

Once connected to the vehicle, you can switch systems quickly.

- 1 Select File > Connect.
- 2 On the Connect dialog, select the "Toyota / Lexus / Scion Enhanced" menu option.
- 3 Press the "Connect to System" button. This button is only available after the vehicle has been successfully detected.
- 4 On the "System Connect – Step 2" dialog, select the system and press "Connect to System".

General Information

The Vehicle Monitor Test Status on the General Information screen will show bit and state encoded values from the enhanced system.



Trouble Codes

The Stored Diagnostic Trouble Codes pane will show any DTCs stored on the enhanced system.



Clearing Trouble Codes

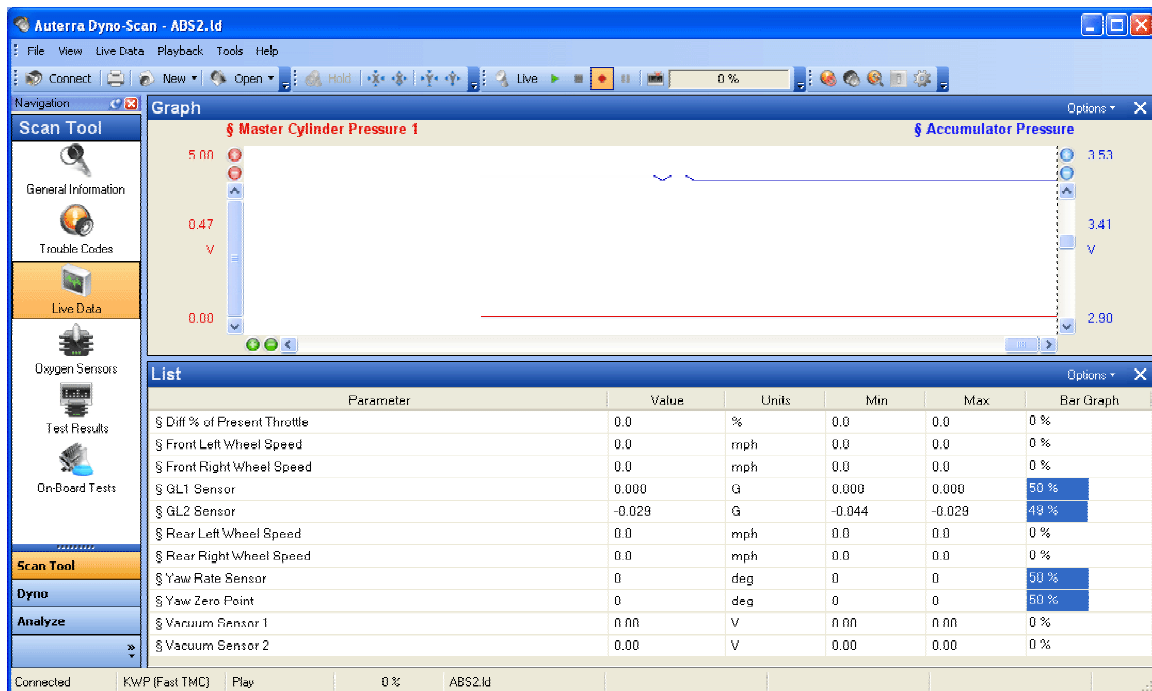
Select the Tools > Clear DTCs menu option to clear codes and turn off any dashboard light (e.g. ABS or airbag). Clear DTCs will only clear codes for the currently connected enhanced system.

Please note the following when clearing DTCs:

- 1 Some vehicles require the ignition key to be turned off then on again before the code is cleared.
- 2 Some codes cannot be cleared while the vehicle is running.
- 3 The dashboard light and diagnostic trouble code may not be clearable until the system repair has been completed.

Live Data

The Live Data screen shows sensor values for the enhanced system currently connected. Each enhanced parameter is marked with a \$ symbol (e.g. \$ Knock Retard). Some systems do not have live data parameters.



Supported Parameters

Live Data Sensors (CAN Bus)

Engine EFI, Radar Cruise, Laser Cruise, CCS

Knock Correction Learn

Knock Feedback

Misfire RPM

Misfire Load

Cylinder 1 Misfire Rate

Cylinder 2 Misfire Rate

Cylinder 3 Misfire Rate

Cylinder 4 Misfire Rate

Cylinder 5 Misfire Rate

Cylinder 6 Misfire Rate

Cylinder 7 Misfire Rate

Cylinder 8 Misfire Rate

All Cylinders Misfire Rate

Ignition

Multiple Cylinder Misfire Rate

Misfire Margin

Short Term Fuel Trim B1

Short Term Fuel Trim B3

Long Term Fuel Trim B1

Long Term Fuel Trim B3

Short Term Fuel Trim B2

Short Term Fuel Trim B4

Long Term Fuel Trim B2

Long Term Fuel Trim B4

O2 Sensor B1-S1

Short Fuel Trim B1-S1

O2 Sensor B1-S2

Short Fuel Trim B1-S2

O2 Sensor B1-S3

Short Fuel Trim B1-S3

O2 Sensor B1-S4

Short Fuel Trim B1-S4

O2 Sensor B2-S1

Short Fuel Trim B2-S1
O2 Sensor B2-S2
Short Fuel Trim B2-S2
O2 Sensor B2-S3
Short Fuel Trim B2-S3
O2 Sensor B2-S4
Short Fuel Trim B2-S4
Equivalence Ratio B1-S1
O2 B1-S1 Wide Range V
Equivalence Ratio B1-S2
O2 B1-S2 Wide Range V
Equivalence Ratio B1-S3
O2 B1-S3 Wide Range V
Equivalence Ratio B1-S4
O2 B1-S4 Wide Range V
Equivalence Ratio B2-S1
O2 B2-S1 Wide Range V
Equivalence Ratio B2-S2
O2 B2-S2 Wide Range V
Equivalence Ratio B2-S3
O2 B2-S3 Wide Range V
Equivalence Ratio B2-S4
O2 B2-S4 Wide Range V
Equivalence Ratio B1-S2 2
O2 B1-S1 Wide Range mA
Equivalence Ratio B1-S2 2
O2 B1-S2 Wide Range mA
Equivalence Ratio B1-S3 2
O2 B1-S3 Wide Range mA
Equivalence Ratio B1-S4 2
O2 B1-S4 Wide Range mA
Equivalence Ratio B2-S1 2
O2 B2-S1 Wide Range mA
Equivalence Ratio B2-S2 2
O2 B2-S2 Wide Range mA
Equivalence Ratio B2-S3 2
O2 B2-S3 Wide Range mA
Equivalence Ratio B2-S4 2
O2 B2-S4 Wide Range mA
Pilot 1 Injection
Pilot 2 Injection
Main Injection
After Injection
Pilot 1 Injection
Pilot 2 Injection
Main Injection

After Injection
Injection Feedback Value
Injection Feedback Value #1
Injection Feedback Value #2
Injection Feedback Value #3
Injection Feedback Value #4
Injection Feedback Value #5
Injection Feedback Value #6
Injection Feedback Value #7
Injection Feedback Value #8
Injection Volume
Purge Density Learning Value
Purge Flow
Engine Speed From EFI
Intake Air Temperature From EFI
Coolant Temperature From EFI
Throttle Position From EFI
Accelerator Position From EFI
Shift Position From ECT
A/T Oil Temperature From ECT
SPD (NO)
SPD (NT)
Requested Engine Torque
HV Target Engine Speed
Actual Engine Torque
Estimated Engine Torque
Engine Run Time
Request Engine Run Time
Judgement Time for Ignition of Engine
Judgement Time for Engine Output
Estimated Intake Port Temperature
Tank Outlet Water Temperature
Water Flow Valve
ISC Learning Value
Cruise Control Vehicle Speed
Cruise Control Memory Vehicle Speed
Cruise Throttle Opening Angle
Cruise Request Torque
Throttle Position No. 1
Throttle Position No. 2
Accelerator Position No. 1
Accelerator Position No. 2
Clutch Current
Throttle Motor Current
Throttle Motor Opening Duty Ratio
Throttle Motor Closing Duty Ratio

Throttle Sensor Opener Position No. 1
Throttle Sensor Opener Position No. 2
Accelerator Fully Closed Learning Value No. 1
Accelerator Fully Closed Learning Value No. 2
Throttle Position Command Value
Throttle Sensor Opener Position No. 1 (AD)
Accelerator Fully Closed Value No. 1 (AD)
Accelerator Position No. 1
Accelerator Position No. 2
Throttle Position No. 1
Throttle Position No. 2
Throttle Requirement Position
Throttle Motor Duty Ratio (Open)
Throttle Motor Duty Ratio (Close)
Throttle Step Position
Throttle Aim Position
Throttle Fully Closed Learning Value
Throttle Motor Current
Electromagnetic Clutch Current
+BM Voltage
SPD (NT)
SPD (NC)
SPD (NC0)
SPD (NC2)
SPD (SP2)
A/T Oil Temperature 1
A/T Oil Temperature 2
A/T Oil Temperature 3
NT Sensor Voltage
NC Sensor Voltage
NC0 Sensor Voltage
NC2 Sensor Voltage
SP2 Sensor Voltage
SPD (NIN)
NIN Sensor Voltage
SPD (NOUT)
NOUT Sensor Voltage
A/T Oil Pressure
G Sensor
Fuel Temp
Accelerator Position
Throttle Position
Diesel Throttle Angle
VNT Command
Pump VCM Angle
IDL Stable Control

Common Rail Pressure
Turbine Speed
Accelerator Position 1
Accelerator Position 2
Alternate Duty Ratio
Throttle Value Fully Closed
Target Common Rail Pressure
VNT Max Angle
VNT Min Angle
Ex Fuel Addition Feedback
Injection Pressure Feedback Value
DPNR A/F
Differential Pressure Feedback
EGR Learn Value
EGR Step Position
EGR Position
EGR Gas Temperature
EGR Close Learning Value
VVT Aim Angle (Bank 1)
VVT Change Angle (Bank 1)
VVT OCV Operation Duty (Bank 1)
VVT Aim Angle (Bank 2)
VVT Change Angle (Bank 2)
VVT OCV Operation Duty (Bank 2)
VVT Exhaust Hold Duty Ratio Learning Value (Bank 1)
VVT Exhaust Change Angle (Bank 1)
VVT Exhaust OCV Duty (Bank 1)
VVT Exhaust Hold Duty Ratio Learning Value (Bank 2)
VVT Exhaust Change Angle (Bank 2)
VVT Exhaust OCV Duty (Bank 2)
Injection Timing (D4)
SCV Status (D4)
SCV Angle (D4)
SCV Angle Sensor (D4)
Fuel Pump Duty
Injection Time (D4)
SCV Duty Ratio
ACM
Power Steering Pressure Sensor
DPNR Differential Pressure Sensor
Air Pump Pressure (Absolute)
Air Pump Pulsation Pressure
Initial Engine Coolant Temperature
Initial Intake Air Temperature
Initial Exhaust Temperature (IN)
Initial Exhaust Temperature (OUT)

Engine Coolant Temperature (IN)
Intake Air Temperature (Turbo)
Injection Volume (Cylinder 1)
Injector
Total Fuel Trim 1
Total Fuel Trim 2
Vapor Pressure
Vapor Pressure
Vapor Pressure (Calculated)
O2 Lean-Rich Bank 1 Sensor 1
O2 Lean-Rich Bank 2 Sensor 1
O2 Rich-Lean Bank 1 Sensor 1
O2 Rich-Lean Bank 2 Sensor 1

ECT

Engine Speed From EFI
Intake Air Temperature From EFI
Coolant Temperature From EFI
Throttle Position From EFI
Accelerator Position From EFI
SPD (NT)
SPD (SP2)
A/T Oil Temperature 1

HV ECU / CCS

Motor (MG2) Revolution
Motor (MG2) Torque
Regenerative Brake Torque
Request Regenerative Brake Torque
Generator (MG1) Revolution
Generator (MG2) Torque
Request Power
Target Engine Revolution
Engine SPD
Master Cylinder Control Torque
Status Of Charge
Wout Control Power
Win Control Power
Discharge Request To Adjust SOC
Drive Condition ID
Inverter Temperature (MG1)
Inverter Temperature (MG2)
Motor Temperature 2
Motor Temperature 1

Power Resource VB
Power Resource IB
Shift Sensor Main
Shift Sensor Sub
Shift Sensor Select Main
Shift Sensor Select Sub
Vehicle SPD (Resolver)
Difference Degree Of An Accelerator
VL-Voltage Before Raising Pressure
VH-Voltage After Raising Pressure
Converter Temperature
Crank Position
Motor (MG2) Torque Execute Value
Generator (MG1) Torque Execute Value
Short Circuit Wave Highest Value
Raising Pressure Ratio
Air-Conditioner Consumption Power
Generator (MG1) Revolution
Motor (MG2) Revolution
Generator (MG1) Torque
Motor (MG2) Torque
Request Power
Engine SPD
Master Cylinder Control Torque
State Of Charge
Wout Control Power
Win Control Power
Drive Condition ID
Inverter Temperature (MG1)
Inverter Temperature (MG2)
Motor Temperature MG2 (No2)
Motor Temperature MG2 (No1)
Power Resource VB
Power Resource IB
Shift Sensor Shift Position
Accel Sensor Main
Auxillary Battery Voltage
Exclusive Information 1
Exclusive Information 2
Exclusive Information 3
Exclusive Information 4
Exclusive Information 5
Exclusive Information 6
Exclusive Information 7
Occurence Order
Information N

Converter Temperature
VL-Voltage Before Raising Pressure
VH-Voltage After Raising Pressure
The Time Of Ignition ON
Inverter Temperature (MG1) After IG-ON
Inverter Temperature (MG2) After IG-ON
Motor Temperature (MG2) After IG-ON
Converter Temperature After IG-ON
Status Of Charger After IG-ON
Inverter Temperature (MG1) Max
Inverter Temperature (MG2) Max
Motor Temperature (MG2) Max
Converter Temperature Max
Status Of Charge Max
Status Of Charge Min
vehicle Speed Max
Air-Conditioner Consumption Power
Generator (MG1) Revolution
Motor (MG2) Revolution
Generator (MG1) Torque
Motor (MG2) Torque
Request Power
Engine SPD
Master Cylinder Control Torque
State Of Charge
Wout Control Power
Win Control Power
Drive Condition ID
Inverter Temperature (MG1)
Inverter Temperature (MG2)
Motor Temperature MG2 (No2)
Motor Temperature MG2 (No1)
Power Resource VB
Power Resource IB
Shift Sensor Shift Position
Accel Sensor Main
Auxillary Battery Voltage
Exclusive Information 1
Exclusive Information 2
Exclusive Information 3
Exclusive Information 4
Exclusive Information 5
Exclusive Information 6
Exclusive Information 7
Occurence Order
Information N

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VL-Voltage Before Raising Pressure
VH-Voltage After Raising Pressure
The Time Of Ignition ON
Inverter Temperature (MG1) After IG-ON
Inverter Temperature (MG2) After IG-ON
Motor Temperature (MG2) After IG-ON
Converter Temperature After IG-ON
Status Of Charger After IG-ON
Inverter Temperature (MG1) Max
Inverter Temperature (MG2) Max
Motor Temperature (MG2) Max
Converter Temperature Max
Status Of Charge Max
Status Of Charge Min
vehicle Speed Max
Air-Conditioner Consumption Power
Generator (MG1) Revolution
Motor (MG2) Revolution
Generator (MG1) Torque
Motor (MG2) Torque
Request Power
Engine SPD
Master Cylinder Control Torque
State Of Charge
Wout Control Power
Win Control Power
Drive Condition ID
Inverter Temperature (MG1)
Inverter Temperature (MG2)
Motor Temperature MG2 (No2)
Motor Temperature MG2 (No1)
Power Resource VB
Power Resource IB
Shift Sensor Shift Position
Accel Sensor Main
Auxillary Battery Voltage
Exclusive Information 1
Exclusive Information 2
Exclusive Information 3
Exclusive Information 4
Exclusive Information 5
Exclusive Information 6
Exclusive Information 7
Occurence Order
Information N

Converter Temperature
VL-Voltage Before Raising Pressure
VH-Voltage After Raising Pressure
The Time Of Ignition ON
Inverter Temperature (MG1) After IG-ON
Inverter Temperature (MG2) After IG-ON
Motor Temperature (MG2) After IG-ON
Converter Temperature After IG-ON
Status Of Charger After IG-ON
Inverter Temperature (MG1) Max
Inverter Temperature (MG2) Max
Motor Temperature (MG2) Max
Converter Temperature Max
Status Of Charge Max
Status Of Charge Min
vehicle Speed Max
Air-Conditioner Consumption Power
Generator (MG1) Revolution
Motor (MG2) Revolution
Generator (MG1) Torque
Motor (MG2) Torque
Request Power
Engine SPD
Master Cylinder Control Torque
State Of Charge
Wout Control Power
Win Control Power
Drive Condition ID
Inverter Temperature (MG1)
Inverter Temperature (MG2)
Motor Temperature MG2 (No2)
Motor Temperature MG2 (No1)
Power Resource VB
Power Resource IB
Shift Sensor Shift Position
Accel Sensor Main
Auxillary Battery Voltage
Exclusive Information 1
Exclusive Information 2
Exclusive Information 3
Exclusive Information 4
Exclusive Information 5
Exclusive Information 6
Exclusive Information 7
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Inverter Temperature (MG2) After IG-ON
Motor Temperature (MG2) After IG-ON
Converter Temperature After IG-ON
Status Of Charger After IG-ON
Inverter Temperature (MG1) Max
Inverter Temperature (MG2) Max
Motor Temperature (MG2) Max
Converter Temperature Max
Status Of Charge Max
Status Of Charge Min
vehicle Speed Max
Air-Conditioner Consumption Power
Generator (MG1) Revolution
Motor (MG2) Revolution
Generator (MG1) Torque
Motor (MG2) Torque
Request Power
Engine SPD
Master Cylinder Control Torque
State Of Charge
Wout Control Power
Win Control Power
Drive Condition ID
Inverter Temperature (MG1)
Inverter Temperature (MG2)
Motor Temperature MG2 (No2)
Motor Temperature MG2 (No1)
Power Resource VB
Power Resource IB
Shift Sensor Shift Position
Accel Sensor Main
Auxillary Battery Voltage
Exclusive Information 1
Exclusive Information 2
Exclusive Information 3
Exclusive Information 4
Exclusive Information 5
Exclusive Information 6
Exclusive Information 7
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Converter Temperature
VL-Voltage Before Raising Pressure
VH-Voltage After Raising Pressure
The Time Of Ignition ON
Inverter Temperature (MG1) After IG-ON
Inverter Temperature (MG2) After IG-ON
Motor Temperature (MG2) After IG-ON
Converter Temperature After IG-ON
Status Of Charger After IG-ON
Inverter Temperature (MG1) Max
Inverter Temperature (MG2) Max
Motor Temperature (MG2) Max
Converter Temperature Max
Status Of Charge Max
Status Of Charge Min
vehicle Speed Max
Air-Conditioner Consumption Power
Cruise Control Vehicle Speed
Cruise Control Memory Vehicle Speed
Cruise Throttle Opening Angle", "" },
Cruise Request Torque

HV Battery

Battery State Of Charge
Current Value Of Battery Pack
Battery Block Voltage - V01
Battery Block Voltage - V02
Battery Block Voltage - V03
Battery Block Voltage - V04
Battery Block Voltage - V05
Battery Block Voltage - V06
Battery Block Voltage - V07
Battery Block Voltage - V08
Battery Block Voltage - V09
Battery Block Voltage - V10
Battery Block Voltage - V11
Battery Block Voltage - V12
Battery Block Voltage - V13
Battery Block Voltage - V14
Inhalation-Of-Air Temp Into A Battery Pack
VMF Fan Motor Voltage
Auxillary Battery Voltage
Charge Control Value To HV-ECU From Batt-ECU
Discharge Control Value To HV-ECU From Batt-ECU
Delta SOC
Cooling Fan Mode

Temperature Of Battery TB1
Temperature Of Battery TB2
Temperature Of Battery TB3
Number Of Battery Block
Accumulated Time Of Battery Low
Accumulated Time Of DC Inhibit
Accumulated Time Of Battery Too High
Accumulated Time Of Hot Temperature
Battery Block Minimum Voltage
Minimum Battery Block No
Battery Block Max Voltage
Max Battery Block No
Internal Resistance R01
Internal Resistance R02
Internal Resistance R03
Internal Resistance R04
Internal Resistance R05
Internal Resistance R06
Internal Resistance R07
Internal Resistance R08
Internal Resistance R09
Internal Resistance R10
Internal Resistance R11
Internal Resistance R12
Internal Resistance R13
Internal Resistance R14

EFI

Calculated Load
Engine Coolant Temp
Fuel Rail Pressure (gauge)
Intake Manifold Pressure
Engine RPM
Vehicle Speed
Ignition Timing Advance
Intake Air Temperature
Air Flow Rate From MAF
Absolute Throttle Position
Time Since Engine Start
Distance Traveled MIL On
Fuel Rail Press Rel Manifold
Fuel Rail Pressure
Commanded EGR
EGR Error
Commanded Evap Purge
Fuel Level Input

Warm-ups Since DTCs Clrd
Distance Since DTCs Clrd
Evap System Vapor Press
Barometric Pressure
Catalyst Temp B1-S1
Catalyst Temp B2-S1
Catalyst Temp B1-S2
Catalyst Temp B2-S2
Control Module Voltage
Absolute Load Value
Commanded Equival Ratio
Relative Throttle Position
Ambient Air Temperature
Absolute Throttle Pos B
Absolute Throttle Pos C
Accelerator Pedal Pos D
Accelerator Pedal Pos E
Accelerator Pedal Pos F
Command Throttle Actuator
Minutes Run with MIL On
Time Since DTCs Cleared
Alcohol Fuel Percentage
Absolute Evap Vapor Pres
Evap System Vapor Pres

ECT

Calculated Load
Engine Coolant Temp
Fuel Rail Pressure (gauge)
Intake Manifold Pressure
Engine RPM
Vehicle Speed
Ignition Timing Advance
Intake Air Temperature
Air Flow Rate From MAF
Absolute Throttle Position
Time Since Engine Start
Distance Traveled MIL On
Fuel Rail Press Rel Manifold
Fuel Rail Pressure
Commanded EGR
EGR Error
Commanded Evap Purge
Fuel Level Input
Warm-ups Since DTCs Clrd
Distance Since DTCs Clrd

Evap System Vapor Press
Barometric Pressure
Catalyst Temp B1-S1
Catalyst Temp B2-S1
Catalyst Temp B1-S2
Catalyst Temp B2-S2
Control Module Voltage
Absolute Load Value
Commanded Equival Ratio
Relative Throttle Position
Ambient Air Temperature
Absolute Throttle Pos B
Absolute Throttle Pos C
Accelerator Pedal Pos D
Accelerator Pedal Pos E
Accelerator Pedal Pos F
Command Throttle Actuator
Minutes Run with MIL On
Time Since DTCs Cleared
Alcohol Fuel Percentage
Absolute Evap Vapor Pres
Evap System Vapor Pres

HV

Calculated Load
Engine Coolant Temp
Fuel Rail Pressure (gauge)
Intake Manifold Pressure
Engine RPM
Vehicle Speed
Ignition Timing Advance
Intake Air Temperature
Air Flow Rate From MAF
Absolute Throttle Position
Time Since Engine Start
Distance Traveled MIL On
Fuel Rail Press Rel Manifold
Fuel Rail Pressure
Commanded EGR
EGR Error
Commanded Evap Purge
Fuel Level Input
Warm-ups Since DTCs Clrd
Distance Since DTCs Clrd
Evap System Vapor Press
Barometric Pressure

Catalyst Temp B1-S1
Catalyst Temp B2-S1
Catalyst Temp B1-S2
Catalyst Temp B2-S2
Control Module Voltage
Absolute Load Value
Commanded Equival Ratio
Relative Throttle Position
Ambient Air Temperature
Absolute Throttle Pos B
Absolute Throttle Pos C
Accelerator Pedal Pos D
Accelerator Pedal Pos E
Accelerator Pedal Pos F
Command Throttle Actuator
Minutes Run with MIL On
Time Since DTCs Cleared
Alcohol Fuel Percentage
Absolute Evap Vapor Pres
Evap System Vapor Pres

HV Battery

Calculated Load
Engine Coolant Temp
Fuel Rail Pressure (gauge)
Intake Manifold Pressure
Engine RPM
Vehicle Speed
Ignition Timing Advance
Intake Air Temperature
Air Flow Rate From MAF
Absolute Throttle Position
Time Since Engine Start
Distance Traveled MIL On
Fuel Rail Press Rel Manifold
Fuel Rail Pressure
Commanded EGR
EGR Error
Commanded Evap Purge
Fuel Level Input
Warm-ups Since DTCs Clrd
Distance Since DTCs Clrd
Evap System Vapor Press
Barometric Pressure
Catalyst Temp B1-S1
Catalyst Temp B2-S1

Catalyst Temp B1-S2
Catalyst Temp B2-S2
Control Module Voltage
Absolute Load Value
Commanded Equival Ratio
Relative Throttle Position
Ambient Air Temperature
Absolute Throttle Pos B
Absolute Throttle Pos C
Accelerator Pedal Pos D
Accelerator Pedal Pos E
Accelerator Pedal Pos F
Command Throttle Actuator
Minutes Run with MIL On
Time Since DTCs Cleared
Alcohol Fuel Percentage
Absolute Evap Vapor Pres
Evap System Vapor Pres

Bit Encoded Values (CAN Bus)

Bit encoded values are single bit values translated as On or Off, Complete or Not Complete, etc...

Engine EFI / CCS

Malfunction Indicator Lamp (MIL)
Misfire Monitoring
Fuel System Monitoring
Comprehensive Component
Compression Ignition
Misfire Monitoring Ready
Fuel System Monitoring Ready
Comprehensive Component Ready
Catalyst Monitoring
Heated Catalyst Monitoring
Evaporative System Monitoring
Secondary Air System Monitoring
Oxygen Sensor Monitoring
Oxygen Sensor Heater Monitoring
EGR and/or VVT System Monitoring
NMHC Catalyst Monitoring
NOx Aftertreatment Monitoring
Boost Pressure System Monitoring
Exhaust Gas Sensor Monitoring
PM Filter Monitoring

EGR and/or VVT System Monitoring
Catalyst Monitoring Ready
Heated Catalyst Monitoring Ready
Evaporative System Monitoring Ready
Secondary Air System Monitoring Ready
Oxygen Sensor Monitoring Ready
Oxygen Sensor Heater Monitoring Ready
EGR and/or VVT System Monitoring Ready
NMHC Monitoring Ready
NOx Aftertreatment Monitoring Ready
Boost Pressure System Monitoring Ready
Exhaust Gas Sensor Monitoring Ready
PM Filter Monitoring Ready
EGR and/or VVT System Monitoring Ready
Misfire Monitoring Enabled
Fuel System Monitoring Enabled
Comprehensive Component Monitoring Enabled
Compression Ignition Monitoring Supported
Misfire Monitoring Ready
Fuel System Monitoring Ready
Comprehensive Component Monitoring Ready
Catalyst Monitoring Enabled
Heated Catalyst Monitoring Enabled
Evaporative System Monitoring Enabled
Secondary Air System Monitoring Enabled
Oxygen Sensor Monitoring Enabled
Oxygen Sensor Heater Monitoring Enabled
EGR and/or VVT System Monitoring Enabled
NMHC Catalyst Monitoring Enabled
NOx Aftertreatment Monitoring Enabled
Boost Pressure System Monitoring Enabled
Exhaust Gas Sensor Monitoring Enabled
PM Filter Monitoring Enabled
EGR and/or VVT System Monitoring Enabled
Catalyst Monitoring Ready
Heated Catalyst Monitoring Ready
Evaporative System Monitoring Ready
Secondary Air System Monitoring Ready
Oxygen Sensor Monitoring Ready
Oxygen Sensor Heater Monitoring Ready
EGR and/or VVT System Monitoring Ready
NMHC Monitoring Ready
NOx Aftertreatment Monitoring Ready
Boost Pressure System Monitoring Ready
Exhaust Gas Sensor Monitoring Ready
PM Filter Monitoring Ready

EGR and/or VVT System Monitoring Ready
ECT Lockup
Engine Independently Control Operation
Request Warm-Up
Racing Operation
Engine Independently Operation
Fuel Cut for Engine Stop Request
ISC Learning
Fuel Level
Cruise Control Main Switch (Main CPU)
Cruise Control Main Switch-Ready (Main CPU)
Cruise Control Main Switch-Indication (Main CPU)
Cruise Control
Shift D Position
Stop Light Switch-1 (Sub CPU)
Stop Light Switch-2 (Sub CPU)
Stop Light Switch (Main CPU)
RES/ACC Switch
SET/COAST Switch
Cancel Switch
System Guard
Open Side Malfunction
Actuator Power Supply
ST1
Throttle Motor
Electromagnetic Clutch
ETCS Actuator Power
Accelerator IDL POS
Throttle IDL POS
Fail Safe Drive
Fail Safe Drive (Main CPU)
Shift Switch Status (L Range)
Shift Switch Status (2 Range)
Shift Switch Status (R Range)
Pattern Switch Status
Overdrive Cut Switch No. 2 Status
Kick Down Switch Status
Shift Switch Status (P Range)
Overdrive Cut Switch No. 1 Status
Shift Switch Status (3 Range)
Shift Switch Status (4 or D Range)
Shift Switch Status (D Range)
Snow Switch Status
Sports Mode Selection Switch
Sports Shift Down Switch
Sports Shift Up Switch

Shift Switch Status (N Range)
Shift Switch Status (B Range)
SD Switch
TPS 1 Switch
TPS 2 Switch
TPS 3 Switch
Lock Up Solenoid Status
ST Solenoid Status
Lockup
Solenoid (DSU)
SLN Solenoid Status
SLU Solenoid Status
SLT Solenoid Status
Solenoid (SLC)
Solenoid (SLS)
Solenoid (DS1)
Solenoid (DS2)
AT Fluid
G Sensor Calibration
OXS1 Test
OXS2 Test
Misfire Test
AS Test
NSW Test
SPD Test
Check Mode
A/F Sensor Test Results (Bank 1)
A/F Sensor Test Results (Bank 2)
O2 Sensor After HC Adsorber & Catalyst (Bank 1)
O2 Sensor After HC Adsorber & Catalyst (Bank 2)
Starter Control
Power Steering Switch
Stop Light Switch
Electrical Load Switch
Neutral Position Switch Signal
A/C Signal
Closed Throttle Position Switch
Starter Signal
FC TAU
Idle Fuel Cut
AI Operation Prohibit
Power Steering Signal
Diesel Throttle Learning Status
EGR Learning Status
Engine Oil Pressure Switch
Throttle Open Switch

Fuel Lid Switch
Fuel Lid
Brake Switch
Brake Switch Status
Starter Relay
Accessory Relay
VVTL OCV Operation Duty
VVTL Oil Pressure Switch
VVTL
OXS1 Test
OXS2 Test
Misfire Test
AS Test
NSW Test
SPD Test
Check Mode
ACT VSV
VSV Status For Variable Intake Control
VSV Status For Fuel Pressure Up
EGR
ACIS VSV
Fuel Pump Speed Control Status
VSV Status For Secondary Air Control
VSV Status For Swirl Control Valve
Fuel Pump / Speed Status
A/C Magnetic Clutch Relay
EVAP Purge VSV
VVT Control Status (Bank 2)
Intake Air control VSV
VVT Control Status (Bank 1)
VSV Status For Intake Air Control
Canister Control VSV
Tank Bypass VSV
VVTL System (Bank 1)
VVTL System (Bank 2)
AICV VSV
Electric Fan Motor
EVAP System Vent Valve
Vacuum Pump
TC and TE1
ACM Inhibit
Fuel Shutoff Value For Delivery Pipe
Regulator Shut Valve

ECT

Shift Switch Status (R Range)
Pattern Switch Status
Shift Switch Status (D Range)
Snow Switch Status
Sports Mode Selection Switch
Sports Shift Down Switch
Sports Shift UP Switch
Lock Up Solenoid Status
SLU Solenoid Status
SLT Solenoid Status
SPD Test
Check Mode
Stop Light Switch

HVECU / CCS

Loading Condition
Engine Warming Up Request
Air-Conditioning Request
HCAC OBD Request
Main Battery Charging Request
Engine Idling Request
Engine Stop Request
System Main RElay Status - Cont3
System Main RElay Status - Cont2
System Main RElay Status - Cont1
Converter Carrier Frequency
Smart Key Status
Air-Conditioning Gate Status
Converter Gate Status
MG2 Gate Status
MG1 Gate Status
Cruise Control
Stop Switch
Engine Warming Up Request
Main Battery Charging Request
Engine Fuel Cut
Engine Idling Request
Engine Stop Request
Cruise Control
Stop Switch
Engine Warming Up Request
Main Battery Charging Request
Engine Fuel Cut
Engine Idling Request

Engine Stop Request
Cruise Control
Stop Switch
Engine Warming Up Request
Main Battery Charging Request
Engine Fuel Cut
Engine Idling Request
Engine Stop Request
Cruise Control
Stop Switch
Engine Warming Up Request
Main Battery Charging Request
Engine Fuel Cut
Engine Idling Request
Engine Stop Request
Cruise Control
Stop Switch
Engine Warming Up Request
Main Battery Charging Request
Engine Fuel Cut
Engine Idling Request
Engine Stop Request
Cruise Control Main Switch (Main CPU)
Cruise Control Main Switch-Ready (Main CPU)
Cruise Control Main Switch-Indication (Main CPU)
Cruise Control
Shift D Position
Stop Light Switch-1 (Sub CPU)
Stop Light Switch-2 (Sub CPU)
Stop Light Switch (Main CPU)
RES/ACC Switch
SET/COAST Switch
Cancel Switch

HV Battery

Malfunction Indicator Lamp (MIL)
Misfire Monitoring
Fuel System Monitoring
Comprehensive Component
Compression Ignition
Misfire Monitoring Ready
Fuel System Monitoring Ready
Comprehensive Component Ready
Catalyst Monitoring
Heated Catalyst Monitoring
Evaporative System Monitoring

Secondary Air System Monitoring
Oxygen Sensor Monitoring
Oxygen Sensor Heater Monitoring
EGR and/or VVT System Monitoring
NMHC Catalyst Monitoring
NOx Aftertreatment Monitoring
Boost Pressure System Monitoring
Exhaust Gas Sensor Monitoring
PM Filter Monitoring
EGR and/or VVT System Monitoring
Catalyst Monitoring Ready
Heated Catalyst Monitoring Ready
Evaporative System Monitoring Ready
Secondary Air System Monitoring Ready
Oxygen Sensor Monitoring Ready
Oxygen Sensor Heater Monitoring Ready
EGR and/or VVT System Monitoring Ready
NMHC Monitoring Ready
NOx Aftertreatment Monitoring Ready
Boost Pressure System Monitoring Ready
Exhaust Gas Sensor Monitoring Ready
PM Filter Monitoring Ready
EGR and/or VVT System Monitoring Ready
Misfire Monitoring Enabled
Fuel System Monitoring Enabled
Comprehensive Component Monitoring Enabled
Compression Ignition Monitoring Supported
Misfire Monitoring Ready
Fuel System Monitoring Ready
Comprehensive Component Monitoring Ready
Catalyst Monitoring Enabled
Heated Catalyst Monitoring Enabled
Evaporative System Monitoring Enabled
Secondary Air System Monitoring Enabled
Oxygen Sensor Monitoring Enabled
Oxygen Sensor Heater Monitoring Enabled
EGR and/or VVT System Monitoring Enabled
NMHC Catalyst Monitoring Enabled
NOx Aftertreatment Monitoring Enabled
Boost Pressure System Monitoring Enabled
Exhaust Gas Sensor Monitoring Enabled
PM Filter Monitoring Enabled
EGR and/or VVT System Monitoring Enabled
Catalyst Monitoring Ready
Heated Catalyst Monitoring Ready
Evaporative System Monitoring Ready

Secondary Air System Monitoring Ready
Oxygen Sensor Monitoring Ready
Oxygen Sensor Heater Monitoring Ready
EGR and/or VVT System Monitoring Ready
NMHC Monitoring Ready
NOx Aftertreatment Monitoring Ready
Boost Pressure System Monitoring Ready
Exhaust Gas Sensor Monitoring Ready
PM Filter Monitoring Ready
EGR and/or VVT System Monitoring Ready
Cooling Fan Stop Control Request
Equal Transaction Charge Permit Signal
Equal Charge Out Relay Signal
Charge Control Signal

State Encoded Values (CAN Bus)

EFI (state)

Received MIL From ECT
Transmission Type
System Identification
Shift Status
VNT Type
DPNR Status (S)
Combustion Status (D4)

ECT

Transmission Type
System Identification
Shift Status

HV

MG2 Carrier Frequency
MG2 Control Mode
MG1 Carrier Frequency
MG1 Control Mode
ECU Control Mode

Live Data Sensors (non-CAN bus)

Engine EFI

Calculated Load
Engine Coolant Temp
Fuel Rail Pressure (gauge)

Intake Manifold Pressure
Engine RPM
Vehicle Speed
Ignition Timing Advance
Intake Air Temperature
Air Flow Rate From MAF
Absolute Throttle Position
Time Since Engine Start
Distance Traveled MIL On
Fuel Rail Press Rel Manifold
Fuel Rail Pressure
Battery
Injector
Revised Injection Volume
Fuel FB Coef
A/F Learn
Purge Learn
KCS Feedback
KCS Feedback
Fuel Pressure
Injector
IAC Step Position
IAC Duty Ratio
EGRT Gas
E-ABV Step Position
Engine Run Time
EGR Valve Position
SPD (SP2)
SPD (NC0)
SPD (NC2)
SPD (NC)

ABS

Throttle Sensor
Sub Throttle Sensor
Engine RPM
Vehicle Speed
Steering Angle
Master Pressure Sensor
Stroke Sensor
Vehicle Speed (for EMPS)

TPWS

Vehicle Speed

AC

Room Temperature Sensor
Ambient Temperature Sensor
Evaporative Temperature Sensor
Solar Sensor (D Side)
Solar Sensor (P Side)
Engine Coolant Temperature
Duct Sensor (D Side)
Duct Sensor (P Side)
Set Temperature (D Side)
Set Temperature (P Side)
Air Mix Damper Position (D Side)
Air Mix Damper Position (P Side)
Air Outlet Damper Position
Air Inlet Damper Position
Cool Air Bypass Damper Position (D Side)
Cool Air Bypass Damper Position (P Side)
Air Mix Damper Target Position (D Side)
Air Mix Damper Target Position (P Side)
Air Outlet Damper Target Position
Air Inlet Damper Target Position
Air Mix Servo Motor Target Step (D Side)
Air Mix Servo Motor Target Step (P Side)
Air Outlet Servo Motor Target Step (D Side)
Air Outlet Servo Motor Target Step (P Side)
Blower Motor Speed Level
Adjusted Ambient Temperature
+B Abnormal Low Voltage Counter
Emission Gas Sensor
Rear Solar Sensor
Emission Gas NOx Sensor
Regulator Pressure Current
Filter Flow Volume
Regulator Control Current
Room Temperature Sensor (Rear)
Ambient Temperature Sensor (Rear)
Set Temperature (Rear)
Air Mix Damper Position (Rear)
Air Outlet Mode Damper Position (Rear)
Air Mix Target Position (Rear)
Air Outlet Target Position (Rear)
Blower Motor Speed Level (Rear)
Humidity Sensor
Air Mix Servo Motor Target Pulse (D Side)
Air Mix Servo Motor Target Pulse (P Side)

Air Outlet Servo Motor Target Pulse (D Side)
Air Inlet Damper Target Pulse
Cool Air Bypass Pulse
Compressor Speed
Compressor Target Speed
Evaporator Fin Thermistor
Number of Trouble Codes

EFI

Cyl 1 Misfire Rate
Cyl 2 Misfire Rate
Cyl 3 Misfire Rate
Cyl 4 Misfire Rate
Cyl 5 Misfire Rate
Cyl 6 Misfire Rate
Cyl 7 Misfire Rate
Cyl 8 Misfire Rate

CCS / Immobiliser

Short Term Fuel Trim B1
Short Term Fuel Trim B3
Long Term Fuel Trim B1
Long Term Fuel Trim B3
Short Term Fuel Trim B2
Short Term Fuel Trim B4
Long Term Fuel Trim B2
Long Term Fuel Trim B4
O2 Sensor B1-S1
Short Fuel Trim B1-S1
O2 Sensor B1-S2
Short Fuel Trim B1-S2
O2 Sensor B1-S3
Short Fuel Trim B1-S3
O2 Sensor B1-S4
Short Fuel Trim B1-S4
O2 Sensor B2-S1
Short Fuel Trim B2-S1
O2 Sensor B2-S2
Short Fuel Trim B2-S2
O2 Sensor B2-S3
Short Fuel Trim B2-S3
O2 Sensor B2-S4
Short Fuel Trim B2-S4
Equivalence Ratio B1-S1
O2 B1-S1 Wide Range V

Equivalence Ratio B1-S2
O2 B1-S2 Wide Range V
Equivalence Ratio B1-S3
O2 B1-S3 Wide Range V
Equivalence Ratio B1-S4
O2 B1-S4 Wide Range V
Equivalence Ratio B2-S1
O2 B2-S1 Wide Range V
Equivalence Ratio B2-S2
O2 B2-S2 Wide Range V
Equivalence Ratio B2-S3
O2 B2-S3 Wide Range V
Equivalence Ratio B2-S4
O2 B2-S4 Wide Range V
IACV Position
IACV Open Stuck
IACV CLS Stuck
Accelerator Pos 1
Accelerator Pos 2
Throttle Pos 2
Throttle Request Pos
Throttle Motor Opening Duty Ratio
Throttle Motor Closing Duty Ratio
Throttle Fully Closed Learning
Accelerator Fully Closed Learning
Throttle Motor Current
Electromagnetic Clutch Current
Fuel Tank Pressure
Target Cam Phaser
Cam Phaser
OCV Duty Ratio
Total FT 1
Total FT 2
O2 LR B1 S1
O2 LR B2 S1
O2 RL B1 S1
O2 RL B1 S2
O2 RL B2 S1
O2 RL B2 S2
Cruise Control Vehicle Speed
Cruise Control Memory Vehicle Speed
Cruise Control Throttle Opening Angle
Registered Key Number

CCS / Immobiliser

Cruise Control Vehicle Speed

Cruise Control Memory Vehicle Speed
Cruise Control Throttle Opening Angle
Registered Key Number

Stop and Go

Starter Operation #
Engine Speed (EFI ECU)
Engine Speed (NE Signal)
Vehicle Speed (EFI ECU)
Vehicle Speed (Speed Signal)
Battery Current
Battery Voltage
Brake Booster Pressure
Vacuum For Brake
CRC Stroke Sensor
Coolant Temp
Ambient Temp Sensor
Multiple Current (1 Trip)
Multiple Current (30 Min)
Cranking Time
Coolant Temp (Cranking)
Min Voltage (Cranking)
Learning Volt (CRC Lo)
Learning Volt (CRC Up)

Sequential MT

Calculated Load
Engine Coolant Temp
Engine Revolution
Vehicle Speed
Intake Air Temperature
Throttle Absolute Position
Driving Mileage After Malfunction
Backup Engine Speed
Accelerator Pedal Angle
Theoretical Engine Torque
Driver Demand Torque
Engine Loss Torque
Idle Set Speed
Requested Engine Torque
Requested Engine Speed
Gear Indicator Pos (except R & N)
Gear Indicator Pos (R & N)
Buzzer Output Status
Clutch Position (Current)

Clutch Position (Target)
Shift Position (Current)
Shift Position (Target)
Select Position (Current)
Select Position (Target)
Shift Pressure
Accumulate Pressure
Clutch Solenoid Current
Master Solenoid Current
Shift Solenoid Current
Select Solenoid Current
Wheel Speed FR
Wheel Speed FL
Wheel Speed RR
Wheel Speed RL
T/M Input Shaft Speed
Clutch Solenoid Null Position
Master Solenoid Null Position
Shift Solenoid Null Position
Select Solenoid Null Position
Clutch Touch Position
Clutch Clamp Position
Clutch Coast Position
Neutral Position (Shift Position)
Neutral Position (Select Position)
1st Gear Position (Shift Position)
1st Gear Position (Select Position)
2nd Gear Position (Shift Position)
2nd Gear Position (Select Position)
3rd Gear Position (Shift Position)
3rd Gear Position (Select Position)
4th Gear Position (Shift Position)
4th Gear Position (Select Position)
5th Gear Position (Shift Position)
5th Gear Position (Select Position)
Reverse Gear Position (Shift Position)
Reverse Gear Position (Select Position)
Cold Condition Judgment
1st Drive Gear Teeth Number
1st Driven Gear Teeth Number
2nd Drive Gear Teeth Number
2nd Driven Gear Teeth Number
3rd Drive Gear Teeth Number
3rd Driven Gear Teeth Number
4th Drive Gear Teeth Number
4th Driven Gear Teeth Number

5th Drive Gear Teeth Number
5th Driven Gear Teeth Number
Final Drive Gear Teeth Number
Final Driven Gear Teeth Number
Reverse Drive Gear Teeth Number
Reverse Driven Gear Teeth Number
6th Gear Position (Shift Position)
6th Gear Position (Select Position)
Trouble Codes

T/M Control

BATT Voltage
IG (+B) Voltage Value
U Phase Voltage Value
V Phase Voltage Value
W Phase Voltage Value
Detail Information 1
Detail Information 2
Detail Information 3
PSW Indicator Mode
Number Of Trip Counter After Learning
Fuel Rank
Type Of ECU

ABS

Front Right Wheel Speed
Front Left Wheel Speed
Rear Right Wheel Speed
Rear Left Wheel Speed
Deceleration Sensor GL1
Deceleration Sensor GL2
Yaw Rate Sensor
Yaw Zero Point
Output Value of GL1
Output Value of GL2
Front Right Wheel Speed
Front Left Wheel Speed
Rear Right Wheel Speed
Rear Left Wheel Speed
VSP1 Vehicle Speed On Meter
Front Right Wheel Speed
Front Left Wheel Speed
Rear Right Wheel Speed
Rear Left Wheel Speed
VSP1 Vehicle Speed On Meter

GL1 Sensor
GL2 Sensor
Vacuum Sensor 1
Vacuum Sensor 2
Master Cylinder Pressure 1
Master Cylinder Pressure 2
Master Cylinder Pressure
Regulator Pressure
Front Pressure
Rear Pressure
Regeneration Request Torque
Regeneration Operation Torque
ECB SLAFR Solenoid Current
ECB SLAFL Solenoid Current
ECB SLARR Solenoid Current
ECB SLARL Solenoid Current
ECB SLRFR Solenoid Current
ECB SLRFL Solenoid Current
ECB SLRRR Solenoid Current
ECB SLRRL Solenoid Current
ECB Stroke Sensor
ECB Stroke Sensor 2
ECB Accumulator Pressure 1
ECB Accumulator Pressure 2
ECB Front Right Pressure
ECB Front Left Pressure
ECB Rear Right Pressure
ECB Rear Left Pressure
Regenerative Request Torque (FR)
Regenerative Request Torque (FL)
Regenerative Request Torque (RR)
Regenerative Request Torque (RL)
Master Cylinder Pressure 1
Master Cylinder Pressure 2
Accumulator Pressure
Diff Degree of Present Accelerator
Diff % of Present Accelerator
Real Output Torque
Diff % of Present Throttle
Number IG ON After Enter Inspection Mode
Number of IG On
Vehicle Speed
Steering Angle
Yaw Rate Sensor
Master Cylinder Pressure
Stroke Sensor

Throttle Opening Angle
Master Cylinder Pressure Grade
Stroke Sensor Grade
Right and Left G
Back and Forth G
Vehicle Speed Grade
Diff % of Present Accelerator
FR Wheel Cylinder Pressure
FL Wheel Cylinder Pressure
RR Wheel Cylinder Pressure
RL Wheel Cylinder Pressure
Accumulator Pressure
Master Cylinder Pressure 2
Stroke Sensor 2
MTT
Voltage Value of IG1
Voltage Value of IG2
BS1
BS2
VM1
VM2
+B1
+B2
Elapsed Time After Ignition Switch ON
Target Oil Pressure (FR)
Target Oil Pressure (FL)
Target Oil Pressure (RR)
Target Oil Pressure (RL)
Current of SLAFR Solenoid
Current of SLAFL Solenoid
Current of SLARR Solenoid
Current of SLARL Solenoid
Current of SLRFR Solenoid
Current of SLRFL Solenoid
Current of SLRRR Solenoid
Current of SLRRL Solenoid
Front Right Wheel Speed
Front Left Wheel Speed
Rear Right Wheel Speed
Rear Left Wheel Speed
Detailed Code for Freeze DTC
ABS Trouble Codes

TPWS (Tire Pressure)

ID1 Tire Inflation Pressure
ID2 Tire Inflation Pressure

ID3 Tire Inflation Pressure
ID4 Tire Inflation Pressure
ID1 Temperature In Tire
ID2 Temperature In Tire
ID3 Temperature In Tire
ID4 Temperature In Tire
ID1 Battery Voltage
ID2 Battery Voltage
ID3 Battery Voltage
ID4 Battery Voltage
ID1 Tire Inflation Pressure
ID2 Tire Inflation Pressure
ID3 Tire Inflation Pressure
ID4 Tire Inflation Pressure
ID5 Tire Inflation Pressure
ID1 Temperature In Tire
ID2 Temperature In Tire
ID3 Temperature In Tire
ID4 Temperature In Tire
ID5 Temperature In Tire
ID1 Initial Threshold Of Low Pressure
ID2 Initial Threshold Of Low Pressure
ID3 Initial Threshold Of Low Pressure
ID4 Initial Threshold Of Low Pressure
ID5 Initial Threshold Of Low Pressure
TPWS Trouble Codes

EHPS / EMPS

Torque Sensor 1 Output
Torque Sensor 2 Output
Torque Sensor Control
Meter Vehicle Velocity
Wheel Speed (Right)
Wheel Speed (Left)
Engine Revolution
Motor Actual Current
Command Value Current
Steering Wheel Angle Velocity
Thermistor Temperature
PIG Power Supply
IG Power Supply
TRQ1 Zero Point Value
TRQ2 Zero Point Value
TRQ3 Zero Point Value
Motor Terminal Voltage (+)
Motor Terminal Voltage (-)

Control Mode
IG On/Off Times
Motor Hi Power Record
Number of Trouble Codes
ROM Version (CAR)
ROM Version (Major Version)
ROM Version (Minor Version)
Assist Map Select State
Ready Status

VGRS

Steering Position 1 (Parallel)
Steering Position 2 (Serial)
Vehicle Speed (Vsc ECU)
Wheel Speed (Right)
Wheel Speed (Left)
Motor Power Source Current
Estimated Motor Current
Actuator Position
Steering Angle Velocity
Lock Motor Output Volt
Thermistor Temperature
PIG-Power Source Volt
IG-Power Source Volt
Actuator Target Angle
Actuator Revolution Speed
Command Value Duty
Motor Estimated Current
Actuator Lock Duty Value
Terminal Voltage U
Terminal Voltage V
Terminal Voltage W
Actuator Deviation Angle
Actuator Estimate Temp

AIRSUS & AHC

FR Wheel Height
FL Wheel Height
R Wheel Height
Front Pressure Sensor
Rear Pressure Sensor
Accumulator Pressure Sensor
Vehicle Speed
FR Wheel Speed
FL Wheel Speed

IG Voltage
+B Voltage
Steering Angle
Steering Angle
Engine Speed
Oil Temperature Sensor
Front Damper Step
Rear Damper Step
G (Back & Forth) Sensor
G (Up and Down) Sensor FR
G (Up and Down) Sensor FL
G (Up and Down) Sensor Rear
FR Height Control Sensor
FL Height Control Sensor
RR Height Control Sensor
RL Height Control Sensor
Damper Step FR
Damper Step FL
Damper Step RR
Damper Step RL
Wheel Speed FR
FR Height Adjust
FL Height Adjust
RR Height Adjust
RL Height Adjust
FR After Height Adjust
FL After Height Adjust
RR After Height Adjust
RL After Height Adjust
RR Wheel Speed
RL Wheel Speed
AHC Trouble Codes
Max Damper Step FR
Max Damper Step FL
Max Damper Step RR
Max Damper Step RL

BODY

Illumination Rate Information
Shoulder Belt Position 1
Shoulder Belt Position 2
Shoulder Belt Position 3

BODY No2

Illumination Rate Information

Shoulder Belt Position 1
Shoulder Belt Position 2
Shoulder Belt Position 3

Steering Pad

Rheostat Signal

SRS

SRS Trouble Codes

OCC (occupant detect)

FL Sensor Voltage
FR Sensor Voltage
RL Sensor Voltage
RR Sensor Voltage
FL Sensor Weight
FR Sensor Weight
RL Sensor Weight
RR Sensor Weight
Total Sensor Weight
OCC Trouble Codes
OCC Past Trouble Codes

Meter

Speed Meter
Tachometer
Input Value Of Fuel Gauge
Input Value Of Light Rheostat
Tube Temperature
Input Value Of Oil Gauge
Output Value Of Sub Fuel Gauge

AFS

+B
Height Sensor Power Supply
Front Height Sensor Signal
Rear Height Sensor Signal
Steering Sensor Signal
Steering Sensor Center Position
Left Swivel Motor Position Sensor
Right Swivel Motor Position Sensor
AFS Trouble Codes

P-Seat

ECU IG Power Voltage
Current Slide Position
Current Reclining Position
Current Front Vertical Position
Current Lifter Position
Current Headrest Position
Memorized Slide Position 1
Memorized Reclining Position 1
Memorized Front Vertical Position 1
Memorized Lifter Position 1
Memorized Headrest Position 1
Memorized Slide Position 2
Memorized Reclining Position 2
Memorized Front Vertical Position 2
Memorized Lifter Position 2
Vehicle Speed

D-Door

Mirror Position Sensor (Vertical)
Mirror Position Sensor (Horizontal)

P-Door

Mirror Position Sensor (Vertical)
Mirror Position Sensor (Horizontal)

Tilt and Telescope

T&T Manual Switch Data
Power Source Voltage
Tilt Position (Pulse)
Telesco Position (Pulse)
Tilt Position (Analog)
Telesco Position (Analog)
SB Position
Tilt Return Position
Telesco Return Position
Tilt Up Limit Position
Tilt Down Limit Position
Telesco Short Limit Position
Telesco Long Limit Position
Tilt Memory Position 1
Telesco Memory Position 1
Tilt Memory Position 2
Telesco Memory Position 2
SB Memory Position 2

Tilt Return Position
Telesco Return Position
Tilt Up Limit Position
Tilt Down Limit Position
Telesco Short Limit Position
Telesco Long Limit Position
Tilt Memory Position 1
Telesco Memory Position 1
Tilt Memory Position 2
Telesco Memory Position 2
Mirror Manual Select
Freeze Speed Information
Tilt Memory Position 3
Telesco Memory Position 3
ECU IG Power Voltage
Current Slide Position
Current Reclining Position
Current Front Vertical Position
Current Lifter Position
Current Headrest Position
Memorized Slide Position 1
Memorized Reclining Position 1
Memorized Front Vertical Position 1
Memorized Lifter Position 1
Memorized Headrest Position 1
Memorized Slide Position 2
Memorized Reclining Position 2
Memorized Front Vertical Position 2
Memorized Lifter Position 2
Memorized Headrest Position 2
Memorized Driver Mirror Position 1
Memorized Passenger Mirror Position 1
Memorized Driver Mirror Position 2
Memorized Passenger Mirror Position 2
Vehicle Speed
Memorized Cushion Position 1
Memorized Cushion Position 2
Memorized Slide Position 3
Memorized Reclining Position 3
Memorized Front Vertical Position 3
Memorized Lifter Position 3
Memorized Headrest Position 3
Memorized Cushion Position 3
Memorized Driver Mirror Position 3
Memorized Driver Mirror Position 3
Memorized Passenger Mirror Position 1

Memorized Belt Anchor Position 1
Memorized Belt Anchor Position 2
Memorized Belt Anchor Position 3
Slide Front Most Position
Headrest Down Most Position
Current Cushion Position

MIRROR, MIRROR-R

Driver Side Mirror Position Vertical Sensor
Driver Side Mirror Position Horizontal Sensor
Passenger Side Mirror Position Vertical Sensor
Passenger Side Mirror Position Horizontal Sensor
Mirror Position Sensor Vertical
Mirror Position Sensor Horizontal

Combination Switch

Wiper Volume Position

SMART KEY

Power Save Counter - 10 Minutes
Power Save Counter - 5 Days
Power Save Counter - 14 Days

Immobiliser

Registered Key Number

MIRROR-L

Mirror Position Sensor Vertical
Mirror Position Sensor Horizontal

Bitmap Encoded Values (non-CAN Bus)

Engine EFI

Engine Run Permission
Engine Warm Up Signal
Acc Racing Signal
Engine Run Signal
RAM Monitor
ATF
Throttle Motor
Electromagnetic Clutch
ETCS Actuator Power
Accel Idle Pos
Throttle Idle Pos

Fail Safe Drive
Fail Safe Drive (Main CPU)
Lock Up Solenoid
Status Of EVAP Auto Test (Mode 8)
Status Of EVAP Auto Test (Mode 8)
Status Of EVAP Auto Test (Mode 8)
PS Oil Pressure Switch
Stop Light Switch
Elect Load Signal
PNP Switch
A/C Signal
CTP Switch
Starter Signal
FC TAO
FC IDL
PS Signal
Stop Light Switch 1
Engine Stop Signal
A/C Cut Signal
Variable Intake VSV
Fuel Pressure Up VSV
EGR System
Intake Control VSV 1
Fuel Pump Relay
Second Air VSV
SCV VSV
A/C Idle VSV
Fuel Pump SPD
Purge Cut VSV
A/C Magnetic Clutch
EVAP VSV
Vapor Press VSV
VVT Ctrl B2
Intake Ctrl VSV2
Supercharge Control Relay
VVT Ctrl B1
Boost Pressure VSV
Auto Oil Supply
Air Bleed VSV
Int Air Ctrl VSV
Exh Gas Ctrl VSV
Exh Bypass VSV
Canister Pressure Control VSV
Tank Pressure Bypass VSV
VVTL Control (Bank 1)
VVTL Control (Bank 2)

AICV
Engine Cooling Fan
Vent Valve
Pump For EVAP System
Low
2nd
Reverse
Pattern Sel Switch (M)
Overdrive Cut Switch
Kickdown Switch
Overdrive Cut Switch 1
3rd
4th/Drive
Drive
Snow Switch
Sport Mode Selection Switch
Sport Shift Down Switch
Sport Shift Up Switch
Solenoid (SLN)
Solenoid (SLU)
Solenoid (SLT)
Solenoid (SLD)
Solenoid (SLC)
Solenoid (SLS)
Solenoid (DSU)

CCS

Cruise Control Main Switch (Main CPU)
Cruise Control Main Switch-Ready (Main CPU)
Cruise Control Main Switch-Indicator (Main CPU)
Cruise Control
Shift D Position
Stop Light Switch 1 (Sub CPU)
Stop Light Switch 2 (Sub CPU)
Stop Light Switch 2 (Main CPU)
RES/ACC Switch
SET/COAST Switch
Cancel Switch

Stop and Go

MIL Status
Clutch Lower Switch
Clutch Upper Switch
Neutral Switch
1st and 2nd Switch

Reverse
Engine Hood Switch 1
Engine Hood Switch 2
D Curtsey Switch Signal
Cancel Switch
Stop Light Switch
Oil Pressure Switch
Alternator L Terminal
TC Terminal
Starter Signal
A/C Signal
Starter Control Signal
Eco Run Mode Indicator
Eco Run Operate Indicator
Indicator Lamp OIL
Charge Lamp
Buzzer
Eco Run (Pre Condition)
Eco Run (Vehicle Speed)
Eco Run (Shift Cond)
Eco Run (Clutch Cond)
Eco Run (Idle Cond)
Engine Start (Battery)
Engine Start (Vacuum)
Engine Start (Brake)
Engine Start (Stop Cond)
Engine Start (Moving)
Engine Start (Shift Cond)
P1642 (Engine ECU)
P1642 (S&G)
P0335 (Open)
P0335 (Int)
P0355 (Engine ECU)
P0500 (Engine ECU)
P0500 (Open)
P1862
P1855
P1857
P1780 (Open)
P1780 (Short)
P1870 (Open)
P1870 (Short)
P1871 (Open)
P1871 (Short)
P1540
P1541 (Stop Cond)

P1541 (Spd)
P1542 (Open/Short)
P1542 (Output)
P1543
P1523
P1520 (Short)
P1520 (Open)
P1520 (Engine ECU)
P1643
P1644
P1544
P1545
P1115
P1875
P1642 (EFI)
P1642 (Eco)
P0335 (Open)
P0335 (Int)
P0355 (Engine ECU)
P0500 (Engine ECU)
P0500 (Open)
P1862
P1855
P1857
P1780 (Open)
P1780 (Short)
P1870 (Open)
P1870 (Short)
P1871 (Open)
P1871 (Short)
P1540
P1541 (Stp)
P1541 (Spd)
P1542 (Open/Short)
P1542 (Output)
P1543
P1523
P1520 (Short)
P1520 (Open)
P1520 (Engine ECU)
P1643
P1644
P1544
P1545
P1115
P1875

P1642 (EFI)
P1642 (Eco)
P0335 (Open)
P0335 (Int)
P0355 (Engine ECU)
P0500 (Engine ECU)
P0500 (Open)
P1862
P1855
P1857
P1780 (Open)
P1780 (Short)
P1870 (Open)
P1870 (Short)
P1871 (Open)
P1871 (Short)
P1540
P1541 (Stp)
P1541 (Spd)
P1542 (Open/Short)
P1542 (Output)
P1543
P1523
P1520 (Short)
P1520 (Open)
P1520 (Engine ECU)
P1643
P1644
P1544
P1545
P1115
P1875
Fail Safe (Comm Fail 1)
Fail Safe (Comm Fail 2)
Fail Safe (Spd Sensor)
Fail Safe (Cancel Switch)
Fail Safe (Shift Switch Fail)

Sequential MT

MIL Status
Clutch Fully Engaged
Clutch Engaging
Clutch Fully Disengaged
Clutch Disengaged
Changing Gear
Torque Reduction Request

MIL Illumination
Cruise Control Inhibit
Invalid Position
Reverse
SAS Change Up
SAS
SAS Change Down
Shift Lever Switch Signal 1
Shift Level Switch Signal 2
Shift Lever Switch Signal 3
Shift Level Switch Signal 4
Shift Lever Check Signal 3
Shift Level Check Signal 4
Shift Lever Check Signal 3
Shift Level Check Signal 4
Steering Switch Signal Up
Steering Switch Signal Down
CAN Communication
Door Lamp
Ignition Signal
T/M Reverse Switch Signal
Motor Pump Relay Signal
T/M Neutral Switch Signal
STP Switch Signal
NSW Signal
A/C Switch Signal
IDL Switch Signal
NSW Switch Signal
SPD Switch Signal
XTEST Switch Signal

T/M Control

Initial Drive Control Completed
Completion Of Detecting Lock Position
Completion Of Detecting Unlock Position
Completion Of Learning Lock Position
Completion Of Learning Unlock Position
P/Not P Movable Shift Range
Power Supply Off Preparation Request Signal
Main Relay For Motor Drive
U Phase Current-Carrying Status
V Phase Current-Carrying Status
W Phase Current-Carrying Status
Main Relay
Signal Of Electrical Key Condition
Vehicle Condition

ACC Condition Signal
BATT Voltage Status
IG (+B) Phase Voltage Status
U Phase Voltage Status
V Phase Voltage Status
W Phase Voltage Status
Shift Position Display (P)
Shift Position Display (not P)
Master Caution Display

ABS

Solenoid Relay
ABS Motor Relay
TRAC Motor Relay
Pre-Charge Pump
Stop Light Switch
Main Idle Switch
Sub Idle Switch
VSC/TRC Off Switch
Hydro Booster High Pressure Switch
Hydro Booster Low Pressure Switch
Reservoir Level Switch
FR
FL
RR
RL
SFRR
SFRH
SFRL
SFLH
SRRR (SRR)
SRRH (SRH)
SRLR
SRLH
SMFR
SMFL
SMR
SPFR
SPFL (SMV2)
SRCF (SRC1)
SRCR (SRC2)
Test Mode Status
Regeneration Cooperation Control
1 System Brake
SMC1
SMC2

SS
Solenoid Relay
ABS Motor Relay
H/B Motor Relay
ECU IG Power Voltage
Stop Light Switch
SA1 Solenoid
SA2 Solenoid
Hydro Booster Low Pressure Switch
Hydro Booster High Pressure Switch
Test Mode Status
SFRH
SFRR
SFLH
SFLR
SRRH (SRH)
SRRR (SRR)
SRLH
SRLR
Stop Light Switch
Main Idle Switch
Sub Idle Switch
VSC/TRC Off Switch
Hydro Booster High Pressure Switch
Hydro Booster Low Pressure Switch
PKB Switch
Air Bleed Support
Test Mode Status
ECU Code 1
ECU Code 2
ECU Code 3
ECU Code 4
Solenoid Relay
ABS Motor Relay
H/B Motor Relay
FR
FL
RR
RL
SFRH
SFRR
SFLH
SFLR
SRRH (SRH)
SRRR (SRR)
SRLH

SRLR
SRCF (SA1, SRC1, SBAR)
SRCR (SA2, SRC2, SBAL)
SRMF (SMCF, SA3, SMC1)
SRMR (SMCR, STR, SMC2)
SMF (BA-SOL)
SMR
SPFR
SPFL
Step Force Switch
Reservoir Level Switch
PPS Solenoid
SSC
MC1
MC2
SC1
SC2
Main Relay 1
Main Relay 2
A Pattern Drive Is Under Enforcement
Two Or More Frame For Freeze Frame Data
Existence of VSC
Brake Type
Motor Relay 1
Motor Relay 2
Steering Sensor
Deceleration Sensor
Yaw Rate Sensor
EFI Communication
RL Speed Sensor
RR Speed Sensor
FL Speed Sensor
FR Speed Sensor
RL Wheel Cylinder Pressure
RR Wheel Cylinder Pressure
FL Wheel Cylinder Pressure
FR Wheel Cylinder Pressure
Stroke Sensor 2
Stroke Sensor 1
Master Cylinder Pressure 2
Master Cylinder Pressure 1
Accumulator Pressure
HV Communication
Inspection Mode
Stop Light Switch
VSC/TRC Off Switch

Park Brake Switch
Reservoir Level Switch
Buzzer
Rear Right Wheel Direction
Rear Left Wheel Direction
Front Right Wheel Direction
Front Left Wheel Direction
Main Relay 1 for ECB
Main Relay 2 for ECB
Motor Relay 1
Motor Relay 2
SMC1
SMC2
SCSS
Capacitor ModeTPWS (Tire Pressure)
Initialization Switch Status
Select Switch Status
ID Code of Transmission Place
ID Code of Transmission Status
Initialization Switch Setting Information
Select Switch Setting Information

AIRSUS & AHC

Height Control Switch (Down)
Height Control Switch (Up)
Height Control Hold Switch
Stop Light Switch
Door Switch
Height Switch Hold
Height Switch Up
Height Switch Down
Damping Force Switch 1
Damping Force Switch 2
MOD2
Height Control Switch
TD Terminal
Access Mode Switch
Rear Leveling Solenoid
Rear Gate Solenoid
Front Leveling Solenoid
Front Gate Solenoid
Accumulator Solenoid
Motor Relay
Main Relay
Main Relay Monitor

Rear Wheel Down
Front Wheel Down
Rear Wheel Up
Front Wheel Up
Main Relay Expectation
Motor Relay
Exhaust Solenoid
FR Height Solenoid
FL Height Solenoid
RR Height Solenoid
RL Height Solenoid
Low Pressure Tank Solenoid
Test Mode Status
Height Control Off Switch

BODY

Open Door Warning
Down The Power Window With Transmitter
Up The Power Window With Transmitter
Hazard Answer Back
Wireless Door Lock Control Function
Car Finder Function
Panic Function
Light Comes ON When Unlocking The Transmitter
Unlock With 2 Time Operation By Transmitter
Wireless Buzzer Response
Auto Lock Time
Lock When IG Switch Is On, Shift D
Unlock When IG On, Shift P and Speed 0
Driver Door Close-Open Linked, Unlock All The Door Lock
Unlock With 2 Times Operation By Driver Door Key
Auto Lock
Warning By Glass Broken Sensor
Answer Back
Passive Mode (Security System)
Warning By Vehicle's Horn
Security System
Indicator Blinking When Armed State
Auto Lock / Shift Not P
Automatic Door Lock Linked Shift
Intrusion Sensor
Warning By Self Power Siren
Door Key Linked Power Window Up
Door Key Linked Power Window Down
Power Window Operation Mode When IG Switch Is Off
Power Window Operation When IG Switch Is Off

Outer Mirror Auto Return
Outer Mirror Fold Function
Rear Door Opening Warning
Light Reminder
Seat Belt Warning Buzzer
Light The I/L When ACC Off
Battery Saver
Lounge Illumination Control
Lounge Illumination
Lighting Time (2 Selection)
Light The I/L When Unlocking With Door Key
Light Dome Lamp When Unlocking With Door Key
Foot Lights Set Up (All Seat)
Response Time
R-Linked Wiper
Auto Wiper
Rewipe Time
Rewipe Function
Speed Mode
Angle Mode
Auto Lock / Shift Not P
Automatic Door Lock Linked Shift
DRL Control Function
Luggage Courtesy Switch
Hood Courtesy Switch
Luggage Door Lock / Unlock Switch
Luggage Opener Switch
Stop Light Switch
Parking Brake Switch
Key Unlock Warning Switch
Shift P Position Switch (P1)
Mirror Position Switch (Down)
Mirror Position Switch (Up)
Mirror Position Switch (Left)
Mirror Position Switch (Right)
Mirror Selection Switch (Left)
Mirror Selection Switch (Right)
P Seat Buckle Switch
D Seat Buckle Switch
Outer Mirror Fold Switch
Alternator L Terminal
Fuel Lid Opener Switch
Sport A/T Switch
ECT Power Mode Switch
ECT Snow Mode Switch
Lamp Failure Signal

Brake Fluid Level Warning Switch
Driver Door Lock Position Switch
Passenger Lock Position Switch
Rear Lock Position Switch
PNP Switch
Rear Door Courtesy Switch
P Door Courtesy Switch
D Door Courtesy Switch
Wiper Angle Control Motor Terminal (PA3)
Wiper Angle Control Motor Terminal (PA2)
Wiper Angle Control Motor Terminal (PA1)
Washer Switch Terminal (W)
Wiper Switch Terminal (SM)
Wiper Switch Terminal (+1)
Wiper Switch Terminal (C1)
Wiper Switch Terminal (2S)
Head Light Switch (Tail)
Head Light Switch (Head)
Auto Light Switch
Front Fog Light Switch
Rear Fog Light Switch
Passing Light Switch
Dimmer Light Switch
Trunk And Back-Door Opener Switch
IG Switch
ACC Switch
Trunk Opener & Metal Top Switch
Outer Mirror Return Switch
Outer Mirror Fold Switch
Tail Cancel Switch
Brake Pad Sensor Open Switch
Auto Mirror Switch
PSD Operation Switch (Passenger's Side)
PSD Operation Switch (Driver's Side)
Back Door Operation Switch
Memory Set Switch
Seat Memory Switch 2
Seat Memory Switch 1
Lock Position Switch (Except D and Back Door)
Driver Door Key Switch-Unlock Side
Passenger Door Key Switch-Unlock Side
Door Key Switch-Lock Side
Door Lock Switch-Unlock Side
Door Lock Switch-Lock Side
Driver Door Key Switch-Unlock Side
Intrusion Sensor OFF Switch

Intrusion Sensor Detection

Steering Pad

Horn Switch
Meter Multireset Switch
Meter Multi DSP2 Switch
Meter Multi DSP1 Switch
Audio Mode Switch
Audio Volume Up Switch
Audio Volume Down Switch
Audio Selector Up Switch
Audio Selector Down Switch
Audio Volume Set Switch
Speech Recognition Hook Switch
ACC Switch Signal
IG Switch Signal
Tail Lamp Signal

BODY No3

Rear Seat Return Switch
High Level Warning Switch
ECT Snow Switch
ECT Power Switch
PIND Switch
WIP Switch
MPX-IG Switch
ACC Switch
Wiper Switch
Illumination System With ACC Off
Light Control
Illumination System
Auto Wiper Operation Mode
Speed Mode

BODY No4

Back-up Light
High Mount Light
License Light
Stop Light
Rear Fog Light
Tail Light
Trunk Lid Open
Rear Defroster
Fuel Lid Open
Luggage Light

FRC (Body No 5)

Washer Level Switch

METER

Tail Cancel Switch

Trip Reset Switch

Odo/Trip Switch

Light Reminder

Clearance Sonar

Clearance Sonar Main Switch

Keep Sense Status Buzzer

Rear Buzzer Specified

Front Buzzer Specified

Rear Sensor

Front Side Distance Sensor

Sensor Condition N Range

No Move Judgment Buzzer

Approach Delay Off

AFS

AFS Off Switch

Headlamp Auto Signal

Headlamp Signal

Generator Signal

Transmission Position N Signal

Transmission Position R Signal

P-Door

Slide Position Initial Flag

Reclining Position Initial Flag

P-Seat

Memory Switch 1

Memory Switch 2

Seat Memory 1

Seat Memory 2

IG Switch

Stop Light Switch

Key Unlock Switch

D-Door Warning Switch

Shift 'P' Position Switch

Memory Switch No 2
Memory Switch No 1
SET Switch
Reclining Rear Switch
Reclining Front Switch
Front Vertical Down Switch
Front Vertical Up Switch
Lifter Down Switch
Lifter Up Switch
Slide Rear Switch
Slide Front Switch
Headrest Switch Down
Headrest Switch Up
Cushion Switch Rear
Cushion Switch Front
Slide Switch Rear (Wireharness)
Slide Switch Front (Wireharness)
Shift 'N' Position Switch
Passenger Door Courtesy

RR-SEAT

Refreshing ECU Stop
Refreshing ECU Start
Headrest Down
Headrest Up
Slide Rear
Slide Front

RL-SEAT

Refreshing ECU Stop
Refreshing ECU Start
Headrest Down
Headrest Up
Slide Rear
Slide Front

R-SEAT-SW

RR Seat Refreshing ECU Stop Switch
RR Seat Refreshing ECU Start Switch
RR Seat Headrest Down Switch
RR Seat Headrest Up Switch
RR Seat Slide Rear Switch
RR Seat Slide Front Switch
RL Seat Refreshing ECU Stop Switch
RL Seat Refreshing ECU Start Switch

RL Seat Headrest Down Switch
RL Seat Headrest Up Switch
RL Seat Slide Rear Switch
RL Seat Slide Front Switch
IG Switch

D-Door

Lock Position Switch
Jam Protection Limit Switch
RL Door Remote Power Window Auto Switch
RR Door Remote Power Window Auto Switch
P Door Remote Power Window Auto Switch
Door Power Window Auto Switch
Glass Position (3/4 Open - Full Open)
Glass Position (Fully Close - 3/4 Open)
Glass Position (Fully Close - 2/4 Open)
Glass Position (Fully Close - 1/4 Open)
Door Key Linked Power Window Down
Door Key Linked Power Window Up
Full Switch
Half Switch
Pole Switch
DBL Lock Position Switch
Cam Position Switch 1
Cam Position Switch 2
Cam Position Switch 3
Courtesy Switch
Trigger Switch
Trespass Sensor

P-Door

Lock Position Switch
Jam Protection Limit Switch
RL Door Remote Power Window Auto Switch
RR Door Remote Power Window Auto Switch
P Door Remote Power Window Auto Switch
Door Power Window Auto Switch
Glass Position (3/4 Open - Full Open)
Glass Position (Fully Close - 3/4 Open)
Glass Position (Fully Close - 2/4 Open)
Glass Position (Fully Close - 1/4 Open)
Door Key Linked Power Window Down
Door Key Linked Power Window Up
Full Switch
Half Switch

Pole Switch
DBL Lock Position Switch
Cam Position Switch 1
Cam Position Switch 2
Cam Position Switch 3
Courtesy Switch
Trigger Switch
Trespass Sensor

RR-DOOR

Lock Position Switch
Jam Protection Limit Switch
Door Power Window Auto Switch
Glass Position (3/4 Open - Full Open)
Glass Position (Fully Close - 3/4 Open)
Glass Position (Fully Close - 2/4 Open)
Glass Position (Fully Close - 1/4 Open)
Full Switch
Half Switch
Pole Switch
DBL Lock Position Switch
Cam Position Switch 1
Cam Position Switch 2
Cam Position Switch 3
Courtesy Switch
Trigger Switch
Rear Seat Memory Switch Memory
Rear Seat Memory Switch Set
Rear Seat Memory Switch Cancel
Trespass Sensor
PSD Switch Operation Condition
Fuel Lid Switch
Child Lock Switch
B Pillar Switch
PSD Main Switch
Handle Switch
Closer Position Switch
Glass Position (3/4 Open - Full Open)
Glass Position (Fully Close - 3/4 Open)
Glass Position (Fully Close - 2/4 Open)
Glass Position (Fully Close - 1/4 Open)
RL-DOOR
Lock Position Switch
Jam Protection Limit Switch
Door Power Window Auto Switch
Glass Position (3/4 Open - Full Open)

Glass Position (Fully Close - 3/4 Open)
Glass Position (Fully Close - 2/4 Open)
Glass Position (Fully Close - 1/4 Open)
Full Switch
Half Switch
Pole Switch
DBL Lock Position Switch
Cam Position Switch 1
Cam Position Switch 2
Cam Position Switch 3
Courtesy Switch
Trigger Switch
Rear Seat Memory Switch Memory
Rear Seat Memory Switch Set
Rear Seat Memory Switch Cancel
Trespass Sensor
PSD Switch Operation Condition
Fuel Lid Switch
Child Lock Switch
B Pillar Switch
PSD Main Switch
Handle Switch
Closer Position Switch
Glass Position (3/4 Open - Full Open)
Glass Position (Fully Close - 3/4 Open)
Glass Position (Fully Close - 2/4 Open)
Glass Position (Fully Close - 1/4 Open)

Tilt and Telescopic

T&T Autoaway Function
T&T Memory 3
Tilt Up Limit Point
Tilt Down Limit Point
Telesco Short Limit Point
Telesco Long Limit Point
T&T Memory 1
T&T Memory 2
Belt Memory 1
Belt Memory 2
Tilt Up Manual Switch (MPX)
Tilt Down Manual Switch (MPX)
Telesco Short Manual Switch (MPX)
Telesco Long Manual Switch (MPX)
Key Code Confirm (MPX)
IG Switch (MPX)
Key Switch (MPX)

IG Switch
Tilt Up Switch
Tilt Down Switch
Telesco Short Switch
Telesco Long Switch
Meter ECU Information
Body No. 1 ECU Information
Body No. 2 ECU Information
Seat ECU Information
Combi ECU Information
Steering Lock ECU Information
Power ECU Info

D-Seat

Memory Switch 1
Memory Switch 2
Seat Memory 1
Seat Memory 2
Driver Mirror Memory 1
Driver Mirror Memory 2
Passenger Mirror Memory 1
Passenger Mirror Memory 2
IG Switch
Stop Light Switch
Key Unlock Switch
D-Door Warning Switch
Shift 'P' Position Switch
Memory Switch No 2
Memory Switch No 1
SET Switch
Reclining Rear Switch
Reclining Front Switch
Front Vertical Down Switch
Front Vertical Up Switch
Lifter Down Switch
Lifter Up Switch
Slide Rear Switch
Slide Front Switch
Headrest Switch Down
Headrest Switch Up
Cushion Switch Rear
Cushion Switch Front
Slide Switch Rear (Wireharness)
Slide Switch Front (Wireharness)
Memory Switch 3

Seat Memory 3
Driver Memory 3
Passenger Mirror Memory 3
Shift 'N' Position Switch
IG 'Push' Position Switch
Slide Position Initial Flag
Headrest Position Initial Flag
Reclining Position Initial Flag
Temporary Stop Moving Flag
Headrest Control

SLIDE ROOF

Open Switch
Close Switch
Tilt Up Switch
Tilt Down Switch
Limit Switch 1
Limit Switch 2
Motor Pulse
Motor Status
IG Switch
IG (Bit)
Permission Of Key Off Operating
D-Door Warning Switch
Door-Key Open Operation
Door-Key Close Operation
Wireless Open Operation
Wireless Close Operation
Hall IC1 Pulse
Hall IC1 Status
Hall IC2 Pulse
Hall IC2 Status
Permission Of Key Off Operating
Slide Roof Closed Signal
Permission Of Key Off Operating
Open With Door-Key
Close With Door-Key
Open With Wireless
Close With Wireless
Direction Of Door-Key Operation
Direction Of Wireless Operation

MIRROR, MIRROR-R

Mirror Position Right Switch

Mirror Position Left Switch
Mirror Position Down Switch
Mirror Position Up Switch
Select Mirror Switch
Reverse Position Switch
ACC Switch
IG Switch
Mirror Memory 3
Mirror Memory 2
Mirror Memory 1

RAIN SENSOR

Wiper Switch Auto Signal
Wiper Switch Hi Signal
Wiper Switch Lo Signal
Sensor Low Temp Condition
Sensor High Temp Condition
Sensor Reaction Condition
Sensor Condition
Key Push Switch Signal
Key Switch Signal
Wiper Switch Mist Signal
Washer Switch Signal

Combination Switch

Light TAIL Switch
Light HEAD Switch
Light AUTO Switch
Dimmer HI Switch
Passing Light Switch
Front Fog Light Switch
Turn Right Switch
Turn Left Switch
Front Wiper INT Switch
Front Wiper LO Switch
Front Wiper HI Switch
Front Wiper AUTO Switch
Front Wiper MIST Switch
Front Washer Switch
Tilt UP Switch
Tilt DOWN Switch
Telesco LONG Switch
Telesco SHORT Switch
Horn Switch
IG Switch

SMART KEY

PR Door Trigger Switch
DR Door Trigger Switch
P Door Trigger Switch
D Door Switch
PR Door Touch Sensor Switch
DR Door Touch Sensor Switch
P Door Touch Sensor Switch
D Door Touch Sensor Switch
Trunk/Back Door Unlock Switch Switch
Trunk/Back Door Lock Switch
ACC Switch
Ignition Switch
Key Unlock Warning Switch
Smart Cancel Switch
Trunk Open Mode When The Key Is Left In A Trunk
Trunk Open Mode When Vehicle Is Locked
Warn A Key Is Taken Out By Fellow Passengers
Warn A Key Is Taken From D-Door Without P Range
Warn A Key Is Taken From D-Door With P Range
Warn Starting E/G When The Key Is Out Of Range
Warn When The Key Battery Becomes Weak
C Code Difference
ID Code Difference (Response)
Key Low Battery
Unmatched Response Code Or Format
No Response
Unmatched Vehicle ID
Registered Condition Of Master Key ID #1
Registered Condition Of Master Key ID #2
Registered Condition Of Master Key ID #3
Registered Condition Of Master Key ID #4
Registered Condition Of Master Key ID #5
Registered Condition Of Master Key ID #6
Registered Condition Of Master Key ID #7
Registered Condition Of Master Key ID #8
ID Code Difference
Difference Rolling Code
Smart Cancel Switch
Immobiliser
Permit (Start)
Response
Frame Error
Different Serial Number

Different Encrypt Code
Abnormal Status
BCC Malfunction
Sub Key
Master Key
Wireless C Code
Wireless Starter Communication ID
Steering Lock Sleep Condition
Steering Lock Start Condition
Engine Start Condition
Push Start Error
Lock Bar Stuck Error
Lock/Unlock Receive
Motor Driver Open
Motor Driver Short
Power Supply Open
Power Supply Short
Sensor Value
LG (Lin)
IG2 Status
IDBOX Start Condition
IDBOX Sleep Condition
Lock Request Receive
Unlock Request Receive
L Code Check
S Code Check
3bit Code Request
Engine Start Request
L Code Check (Past)
S Code Check (Past)
3bit Code Request (Past)
Engine Start Request (Past)

BACK DOOR

Courtesy Switch
Wiper Turn Position Switch
Wiper Retracting Switch
Power Window Limited Switch
Lock Position Switch
Unlock Switch Linked With Key
Lock Switch Linked With Key
Door Key Linked Power Window Down
Door Key Linked Power Window Up
PBD Closer Switch
Power Window Position
Door Lock Status

Back Door Handle Switch
Full Latch Switch
Wiper Stop Position
Half Latch Switch
Glass Position (Fully Close - 1/4 Open)
Glass Position (1/4 Open - 2/4 Open)
Glass Position (2/4 Open - 3/4 Open)
Glass Position (3/4 Open - Fully Open)
Door Position (Fully Close - 1/4 Open)
Door Position (1/4 Open - 2/4 Open)
Door Position (2/4 Open - 3/4 Open)
Door Position (3/4 Open - Fully Open)
PBD Assist Open Operation
PBD Assist Close Operation
Wireless PBD One Motion Operation
PBD Switch Operation Condition
PBD Main Switch

Steering Lock

Push Switch
Key Switch
IG Switch
Lock Position Sensor
Unlock Position Sensor
Unlock Sensor
P2 Switch
+B
Steering Lock
Immobiliser
Check (Security)
Permission To Start
G-Code Support Status
No Response
Frame Error
Unrecognized Serial No
Unrecognized Encrypted Code
Abnormal Status
Abnormal BCC
Sub Key Matching
Master Key Matching
Registration Error 3/EFI Reg Status
Registration Error 2/Number Error
Registration Error 1/Password Error
Space For Code Registration
Security B Code Confirmation
Communication ID Confirmation

FCVC Status / No Resp From FCVC For 10s While IG On
FCVC Status / FCV Failure
FCVC Status / Codeline Failure
FCVC Status / Factory Code Initializing
FCVC Status / Checksum Error
FCVC Status / Code Incorrect Status
FCVC Status / Unlock Status
FCVC Status / Code Learning Status

MIRROR-L

Mirror Memory 3
Mirror Memory 2
Mirror Memory 1

TDS

Security Horn 2
Security Horn
Security Indicator
Tail Light Relay
Headlight Relay
Front Fog Light Relay
Luggage Transmitter
In Luggage Transmitter
RR-Sheet Transmitter
FR-Sheet Transmitter
PR-Sheet Transmitter
DR-Sheet Transmitter
P-Sheet Transmitter
D-Sheet Transmitter
Smart Indicator
Buzzer Response Sound
Buzzer
Pager

PWR SOURCE CONTROL

Shift P Signal
Steering Unlock Switch
Card Half-Insertion Detection Switch
Card Full-Insertion Detection Switch
Stop Lamp Switch 2
Stop Lamp Switch 1
Start Switch 2
Start Switch 1
Neutral Switch / Clutch Switch

Starter Requesting Signal Monitor
Ratch Circuit
Ignition 1 Relay Monitor (Inside)
Ignition 2 Relay Monitor (Inside)
ACC Relay Monitor
Ignition 1 Relay Monitor (Outside)
Ignition 2 Relay Monitor (Outside)
Starter Relay Monitor
Driving Request Of Starter
ACC Relay Cut Signal
Engine Condition (Only For Non HV-Car)
Vehicle Speed Signal

Master Switch

RL Door Remote Power Window Up Switch
RR Door Remote Power Window Up Switch
P Door Remote Power Window Up Switch
Door Power Window Up Switch
RL Door Remote Power Window Auto Switch
RR Door Remote Power Window Auto Switch
P Door Remote Power Window Auto Switch
D Door Power Window Auto Switch
Power Window Lock Switch
Manual Door Unlock Switch
Manual Door Lock Switch
RL Door Remote Power Window Down Switch
RR Door Remote Power Window Down Switch
P Door Remote Power Window Down Switch
Door Power Window Down Switch
Seat Memory No3
Seat Memory No2
Seat Memory No1
Memory Set Switch
Door Key Linked Unlock Switch
Door Key Linked Lock Switch
Lock Position Sensor
Glass Position (3/4 Open - Full Open)
Glass Position (Fully Close - 3/4 Open)
Glass Position (Fully Close - 2/4 Open)
Glass Position (Fully Close - 1/4 Open)
Wireless Power Window Down
Wireless Power Window Up
Door Key Linked Power Window Down
Door Key Linked Power Window Up

State Encoded Values (non-CAN Bus)

Immobiliser

Key Discrimination

Sequential MT

Gear Position (Current)

Gear Position (Target)

ABS

ECU IG Power Voltage

Deceleration Switch

Shift Position

TPWS (Tire Pressure)

TPWS Mode

Main Tire

2nd Tire

Registered Main Tire

Registered 2nd Tire

Paint Color of ID1 Transmitter

Paint Color of ID2 Transmitter

Paint Color of ID3 Transmitter

Paint Color of ID4 Transmitter

Registered ID

ID1 Battery Voltage

ID2 Battery Voltage

ID3 Battery Voltage

ID4 Battery Voltage

ID5 Battery Voltage

EMPS / EHPS

ECU Identification

Test Mode Status

VGRS

Steering Sensor 1

Steering Sensor 2

Steering Sensor 3

Engine Revolution (RPM)

Motor Rev Angle Sensor U

Motor Rev Angle Sensor V

Motor Rev Angle Sensor W
Straight Angle Valid Flag
Motor Overheat Record
Motor Lo Power Record
Motor Overload Record
Record Of Wheel Speed Malfunction (Left)
Record Of Wheel Speed Malfunction (Right)
Test Mode Status

BODY

Wireless Door Lock Buzzer Volume
Code Selection For Trunk Lid Open Function
Back Door Power Window Open Function Code Select
Auto Lock Specification Of Vehicle Speed
Slight Open
Key Reminder Buzzer Sound
Lighting Time (3 Selection)
Light Auto Turn Off Delay
Control Type
Sensitivity
Display Extinction Release Luminous Intensity
Entry Delay Time
Back Door Power Window Open Function Code Select
Rear Sunshade Delay Time

SRS

Driver Side Seat Position
Passenger Classification
Passenger Detection
Driver (Left) Side Buckle Switch
Driver (Right) Side Buckle Switch
Display Type Information

OCC (occupant detect)

IG Switch
Passenger Side Buckle Switch
Passenger Classification
Sensor Range Information
RR Sensor Range Information
RL Sensor Range Information
FR Sensor Range Information
FL Sensor Range Information

METER

Key Reminder Buzzer Frequency
Key Reminder Buzzer Volume
Current Unit On Multi-Display

Clearance Sonar

Front And Rear Buzzer Volume
Front And Rear Buzzer Frequency
Non P/R Range Sensor
Reverse Range Sensor
Sonar Display Off Time
Display Timeout Time
Front Left Sensor
Front Left Side Sensor
Front Right Center Sensor
Front Left Center Sensor
Front Right Side Sensor
Front Right Sensor
Rear Left Center Sensor
Rear Left Sensor
Rear Right Sensor
Rear Right Center Sensor

P-Seat

Status Of Motor

AC

Hands Free Telephone

D-Door

Foot Light Lighting Time
Mirror Return Type

P-Door

Foot Light Lighting Time
Mirror Return Type

RR-DOOR

Wireless PSD Switch Operation
Buzzer Volume During The PSD Operation
PSD Touch Sensor

RL-DOOR

Wireless PSD Switch Operation

Buzzer Volume During The PSD Operation
PSD Touch Sensor

D-Seat

Status Of Motor

MIRROR, MIRROR-R

Foot Lamp Setup

SMART KEY

Interval To Send A Signal To Verify SMART Entry
Wait Time To Permit Opening Door After Locking
Smart Ignition Available Area
Smart Door Unlock Mode
Warn When The Key Is Left In The Vehicle
Warn Locking Door When Engine Is Idling
Setting Warning Buzzer Sound Number
Smart Door Unlock Mode

BACK DOOR

Wireless PBD Switch Operation
Buzzer Volume During PBD Operation

PBD Touch Sensor (Left)
PBD Touch Sensor (Right)

Immobiliser / Steering Lock

Registered Sub Transponder Code No
Registered Master Transponder Code No
Key Discrimination

MIRROR-L

Foot Lamp Setup

PWR SOURCE CONTROL

Ready Signal (Only For HV-Car)
Power Supply Condition