

**ARTICLE BEGINNING** **SPECIFICATIONS** **SCAN TOOL DATA - TOTALLY INTEGRATED POWER MODULE (TIPM)** 

The following table lists data values taken from the Scan Tool Totally Integrated Power Module (TIPM) data list. The data is to be used for reference only.

The following data values were recorded under the following conditions unless otherwise specified:

- Key On, Engine Off
- No DTCs set
- Engine at operating temperature
- Vehicle in Park or Neutral
- Doors Closed
- Accessories Off
- Altitude at 297.2 meters (975 ft.) above sea level

Not all of the scan tool data is applicable and may vary as much as 20 percent due to the following:

- Vehicle age and wear
- Altitude
- Weather
- Engine, Transmission and other Vehicle Options
- Aftermarket Accessories

Scan Tool Data - TIPM		
Data Name	Value	Unit or State
A/C Clutch Sense	Open	Open/Closed
AC Pressure Sense (5V) Source	5.06	Volts
AC Refrigerant Pressure	7.5 (108.8)	bar (psi)
AC Refrigerant Pressure Voltage	1	Volts
All Doors Lock	Off	On/Off
Ambient Temperature Degrees	25.5 (77.9)	°C (°F)
Ambient Temperature Voltage	2.47	Volts
ANL LFT Bit	Not Set	Not Set/Set
Auto Headlamp on Request	Yes	Yes/No
Battery Temperature Degrees	SNA / Not Programmed	°C (°F)
Battery Temperature Voltage	5	Volts
Battery Voltage	12.549	Volts
Brake Fluid Level	Normal	Normal/Low
Brake Switch Sense	Not Pressed	Not Pressed/Pressed
Charge Voltage Low	No	Yes/No
Charging System Failure	No	Yes/No
CHMSL	Off	On/Off
Clutch Interlock	Closed	Open/Closed
Coolant Temperature	37.2 (99)	°C (°F)
Cruise Engaged	No	Yes/No
DDM SPAD Request	No	Yes/No
Door Locks	Off	All Doors Locked/Driver Door Unlocked/Off/Passenger Door Unlocked
Electric Backlite/Heated Mirror Request	No	Yes/No
Engine RPM	0	rpm

ESP Flash Request	No	Yes/No
ESP Off Button Pressed	Not Pressed	Not Pressed/Pressed
ESP Wheel Speed Front Left	0	rpm
ESP Wheel Speed Front Right	0	rpm
ESP Wheel Speed Rear Left	0	rpm
ESP Wheel Speed Rear Right	0	rpm
Flipper Glass Release Motor	Off	On/Off
Front Blower Motor	On	On/Off
Front Wash Control	Off	On/Off
Front Washer Request	No	Yes/No
Front Wiper Mist Request	No	Yes/No
Front Wiper Motor High 5-pin	Off	On/Off
Front Wiper Motor Low 5-pin	Off	On/Off
Front Wiper Park Switch Sense	Parked	Not Parked/Parked
Front Wiper Switch	Off	Intermittent 1 - 6/Low Speed/Off/High Speed
Fuel Level Sense 1	1.9	Volts
Fuel Level Sense 2	5	Volts
Fuel Pump Motor/Diesel Lift Pump	On	On/Off
Fuel Type	Unleaded	Unleaded/Diesel/Flex Fuel
Hazard Switch	Not Pressed	Not Pressed/Pressed
Headlamp Switch	OFF Position	Off Position/Parklamp Position/Headlamp Position/Auto Position/Headlamp Default
Heated Mirrors	Off	On/Off
High Beam Duty Cycle	0.0	%
High Beam Steady Status Request	No	Yes/No
Horn 1 and 2	Off	On/Off
Horn Request	No	Yes/No
IGN RUN Relay	On	On/Off
IGN RUN/ACC Relay	On	On/Off
IGN RUN/START - ABS Module, ESP Module	On	On/Off
IGN RUN/START - NGC/GPEC	On	On/Off
IGN RUN/START - ORC/OCM	On	On/Off
IGN RUN/START Relay	On	On/Off
Ignition Run/Start Sense	On	On/Off
Ignition Switch Status	RUN Position	ACC Position/LOCK Position/OFF Position/OFF/ACC Position/RUN Position/START Position
IOD Sense	Closed	Closed/Ajar
Key in Ignition	Yes	Yes/No
Left Front Door	Closed	Closed/Ajar

Ajar Switch		
Left Front Fog Lamp	Off	On/Off
Left Front Signal Mirror Lamp Failure	No	Yes/No
Left Front Turn Lamp	0	%
Left High Beam Duty Cycle	0	%
Left Low Beam Duty Cycle	0	%
Left Rear Stop/Turn Signal	0	%
Left Side Door (s) Unlock	Off	On/Off
Left Signal Mirrors/Side Repeaters	Off	On/Off
Left Tail/Lic/Running Lamps	Off	On/Off
Left Trailer Tow Turn/Stop Signal	Off	On/Off
Left Turn Signal Request	No	Yes/No
Liftgate Release Motor	Off	On/Off
Low Coolant Level	Low	Low/High
MIL Lamp Request	Yes	Yes/No
Multifunction Turn/Hazard Switch State	Hazards On	Turn Hazard Off/Hazards On
Multifunction Turn/Hazard Switch Voltage	4.86	Volts
Odometer	407 (252.7)	km (miles)
Oil Indicator Request	Yes	Yes/No
Output Speed	0	KM/H (MPH)
Panic Mode Active	No	Yes/No
PDM SPAD Request	No	Yes/No
Power Windows (IGN RUN/ACC)	On	On/Off
PRND DISPLAY TYPE	"P"	"P"/"R"/"N"/"D"/"L"/"A"/"SIX"/"FIVE"/"FOUR"/"THREE"/"TWO"/"ONE"/"FAULT"/"DS"/"D2"/"D3"/"D4"/"D5"/"SNOW"/"Park Neutral switch not true"
PRND Status	Park	Drive/Neutral/Not Reverse/Park/Reverse
Radiator Fan	Off	On/Off
Rad Fan #1 Duty Cycle	0.0	%
Rad Fan #2 Duty Cycle	0.0	%
Radiator Fan 1	Off	On/Off
Radiator Fan 2	Off	On/Off
Rear Fog Lamps	Off	On/Off
Rear Front Fog Lamp	Off	On/Off
Rear Gear Switch	Open	Open/Closed
Reverse Lamps	Off	On/Off
Right Front Door Ajar Switch	Closed	Closed/Ajar
Right Front Fog Lamp	Off	On/Off
Right Front Signal Mirror Lamp Failure	No	Yes/No
Right Front Turn Lamp	0	%
Right High	0	%

Beam Duty Cycle		
Right Low Beam Duty Cycle	0	%
Right Rear Stop/Turn Signal	0	%
Right Side Door (s)/Gate Unlock	Off	On
Right Signal Mirrors/Side Repeaters	Off	On/Off
Right Tail/Running Lamps	Off	On/Off
Right Trailer Tow Turn/Stop Signal	Off	On/Off
Right Turn Signal Request	No	Yes/No
RKE Basic Function Request	No Basic REQUEST	Flipper Glass Release/LEFT SLIDING DOOR TOGGLE/No Basic REQUEST/REMOTE OFF/REMOTE ON/RIGHT SLIDING DOOR TOGGLE/RKE LOCK REQUEST/RKE RELOCK REQUEST/RKE UNLOCK ALL/RKE UNLOCK DRIVER/TRUNK/LIFTGATE TOGGLE/BASIC REQUEST SNA
RKE Complex Function Request	No Complex RKE	Global Window Close/Global Window Open/Horn Chirp Toggle/No Complex RKE/Optical Chirp Toggle/Sequential Unlock Toggle
Stop Lamp Suppression	No	Yes/No
Suppress Horn Request	No	Yes/No
Tailgate Ajar Switch	Not Ajar	Not Ajar/Ajar
T-Case Encoder 5V Source	5.08	Volts
TPM Horn Chirp Request	No	Yes/No
Trailer Park/Running Lamp	Off	On/Off
Transmission Type	Automatic	Automatic/Manual
Valid SKIM Key	Yes	Yes/No
Vehicle Speed	0 (0.0)	KM/H (MPH)
Washer Fluid Level Voltage	0.16	Volts
Washer Fluid Levels	Normal	Normal/Open/Low
Washer Motor State	Off	Off/Front Wash/Rear Wash

### SCAN TOOL DATA - POWERTRAIN CONTROL MODULE (PCM) (NGC)

The following table lists data values taken from the Scan Tool Powertrain Control Module (PCM) data list for the NGC controller. The values were taken at key on, engine off and at idle. The data is to be used for reference only.

The following data values were recorded under the following conditions unless otherwise specified:

- No DTCs set
- Key On, Engine Off values recorded at ambient air temperature.
- Engine at operating temperature.
- Vehicle in Park or Neutral
- A/C Off
- Speed Control Off
- Accessories Off
- Altitude at 55.7 meters (600 ft) above sea level

Some data values can vary as much as 20 percent due to the following:

- Vehicle age and wear
- Altitude
- Weather
- Ambient air temperature
- Engine, Transmission and other Vehicle Options
- Aftermarket Accessories

**NOTE:** There are footnotes located next to values in the data table to reference specific conditions or additional information. They are

listed in detail after the data table.

Scan Tool Data - Powertrain Control Module (PCM) (NGC)			
Data	Unit	Key On, Engine Off	Idle
Current Fuel Shutoff	-	ASD	None
SKIM/VTA Has Completed	-	True	True
MAP Vacuum	in Hg	0.06	18.94
MAP Volts	Volts	4.2819 (1)	1.378 (1)
Barometric Pressure	in Hg	28.56 (1)	29.03 (1)
P-Ratio MAP/BARO	P-Ratio	1.0 (1)	0.3 (1)
Accelerator Pedal Position	%	0.0	0.0
APP1	Volts	0.4399	0.8896
APP2	Volts	0.2151	0.4497
TPS1 Minimum Volts	Volts	0.5209	0.124
TPS1 Volts	Volts	0.9138	0.6503
TPS2 Minimum Volts	Volts	4.4859	4.4933
TPS2 Volts	Volts	4.0821	4.3591
Desired TPS Position	Volts	0.3941	0.1391
Throttle Blade Position	%	8	3
ETC Directional Duty Cycle	%	-1.733 - -2.09	-24.5 - -21.19
RPM vs Vehicle Speed Ratio	RPM/	255.0	255.0
Engine Speed	rpm	0	650
Target Idle Speed	rpm	720	648
Time from Start Run	second	0	Varies
Time Fuel System in Run Mode	second	0	Varies
Ignition Off Time	minute	869	4
Engine Runtime	second	0.0	0.0 to 655.3
Purge Duty Cycle	%	0.0	18 - 20
Desired Purge Current	mA	0.0	147.52
Actual Purge Current	mA	-0.977 - 1.954	148 - 150
Purge Airflow	g/s / kg/h	0.0	0.0801
Purge Mode	-	Off	Normal Flow
Purge Vapor Ratio	-	0.23	0.14
Purge Adaptive	-	0	-4.1 - -1.4
Actual Torque	Ft-Lbs / N*m	-61.47	-1.65 - -2.45
ETC Starter Inhibit	miles/km	2146.3041	Varies
EGR Sensed Volts	Volts	3.9691	3.9691
EGR Duty Cycle	%	0.0	1.001
EGR Flow	g/s / kg/h	0.0	0.0
Desired EGR Position	inch/mm	0.0	0.0
Actual EGR Position	inch/mm	0.0	0.01
Injector Pulse Width Cylinder 1	US	0.0	1950 - 2050
Injector Pulse Width Cylinder 2	US	0.0	1950 - 2050
Injector Pulse Width Cylinder 3	US	0.0	1950 - 2050
Injector Pulse Width Cylinder 4	US	0.0	1950 - 2050
Injector Pulse Width Cylinder 5	US	0.0	1950 - 2050
Injector Pulse Width Cylinder 6	US	0.0	1950 - 2050
Injector Pulse Width Cylinder 7 (9)	US	0.0	1950 - 2050
Injector Pulse Width Cylinder 8 (9)	US	0.0	1950 - 2050
Cranking Injector Pulse Width	US	0.0	25504
1/1 O2 Sensor Level	-	Low	Low/High (2)
2/1 O2 Sensor Level	-	Low	Low/High (2)
1/1 O2 Goal (0-1)	Volts	0.0	0.41
2/1 O2 Goal (0-1)	Volts	0.0	0.45
1/1 O2 Volts (0-1)	Volts	2.49	0.08 - 0.85 (3)
1/1 O2 Sensor Volts	Volts	5.0004	2.6 - 3.3
1/2 O2 Volts (0-1)	Volts	2.49	0.75
1/2 O2 Sensor Volts	Volts	5.0004	3.275 (4)
2/1 O2 Volts (0-1)	Volts	2.49	0.08 - 0.85 (3)
2/1 O2 Sensor Volts	Volts	5.0004	2.6 - 3.3
2/2 O2 Volts (0-1)	Volts	2.49	0.75
2/2 O2 Sensor Volts	Volts	5.0004	3.275 (4)
1/1 O2 Fuel Feedback	-	Open	Closed
2/1 O2 Fuel Feedback	-	Open	Closed
1/1 O2 Heater Temp	C°/F°	699.8	1250.0
1/2 O2 Heater Temp	C°/F°	771.8	1250.0
2/1 O2 Heater Temp	C°/F°	708.8	1250.0
2/2 O2 Heater Temp	C°/F°	780.6	1250.0
1/1 Short Term ADAP	%	0.0	-3.5 - 0.2
2/1 Short Term ADAP	%	0.0	-3.5 - 1.0
1/1 Long Term ADAP	%	-0.6	-0.6
2/1 Long Term ADAP	%	-0.2	-0.2

Closed Loop Timer	second	12.6	0.0
Current ADAP Cell ID	-	24	24
Engine Coolant Temp	C°/F°	73.4	199.4
Engine Coolant Temp Volt	Volts	3.6856	0.8701
Intake Air Temp Deg	C°/F°	73.4 (5)	80.6 (5)
Intake Air Temp Deg Volt	Volts	3.4265 (5)	3.4705 (5)
Ambient Temp	C°/°F	73.4	71.6
Fuel Level Percent	%	80(6)	80(6)
Fuel Tank Vapor Volume	Gallon/Liters	5.125 (7)	5.125 (7)
Fuel Tank Size	Gallon/Liters	20.5 (8)	20.5 (8)
Fuel Level Sensor #1 Volts	Volts	0.65 (6)	0.65 (6)
Ambient Temp Voltage	Volts	3.14	3.14
CAT Modeled Temp	C°/F°	-83.2	834.8
OIL PRESS SW	-	Closed	Open
Voltage Sense	Volts	12.29	14.0
Target Charging Voltage	Volts	14.143	14.267
Generator Duty Cycle	% DC	0.0	55.0
Mass Airflow	g/s / kg/h	3.43	4.192 - 4.229
Knock Sensor 1 Volts	Volts	0.0	0.2465
ST Knock Retard	degree/Grad	0.0	0.0
Base Spark	degree/Grad	-55.0	-37.0
Spark Advance	Engine	0.0	7.5 - 12.5
ESIM Switch	-	Open	Closed
AC Hi-Side Pressure	psi/kpa	83.3	77.2
AC Hi-Side Voltage	Volts	0.92	0.88
PCM Odometer	miles/km	Varies	Varies
Vehicle Speed	MPH / km/hr	0.0	0.0
Cam Sync State	-	Out of Sync	In Sync
Crank Signal Missing	-	False	False
Crank Sync State	-	Out of Sync	In Sync
Crank System Fault and in Limp-Home Mode	-	False	False
Cam Crank Difference	degree/Grad	1.2	1.9
Brake Switch Filtered Switch State	-	Off	Off
Brake Switch 2 Filtered Switch State	-	Off	Off
Park Neutral Switch Filtered Switch State	-	On	On
AC Select Switch Filtered Switch State	-	Off	Off
AC Request Switch Filtered Switch State	-	Off	Off
Act AC Clutch Relay	-	Off	Off
AC Output Current	Amps	0.0	0.0
ASD Sense Switch Filtered Switch State	-	Off	Off
Desired ASD Relay	-	Off	On
MTV Output State	-	Deenergized	Deenergized
MTV PWM Feedback	%	49	49
SRV Output State	-	Deenergized	Deenergized
SRV PWM Feedback	%	49	49
Fuel Pump Relay	-	Off	On
Ignition Start Switch Filtered Switch State	-	Off	On
Ignition Run/Start Switch Filtered Switch State	-	On	On
Desired Malfunction Lamp	-	On	Off
S/C Switch Voltage	Volts	4.55	4.55
S/C Switch Voltage 2	Volts	4.55	4.55
Cruise Lamp Status	-	Off	Off
S/C Working Status	-	Off	Off
S/C Denied Status	-	Allowed	Allowed
S/C Disenable Reason	-	Cruise Off	Remain Enable
S/C Disengage Reason	-	Disengage Due To	Speed Sensor
S/C Switch State 1	-	Open (Switch	Open (Switch
S/C Switch State 2	-	Open (Switch	Open (Switch
EATX Limp-In Status	-	Not Set	Not Set
Turbine Speed	rpm	0	607-615
Transfer Speed	rpm	0	0
Output Speed	rpm	0	0
Torque Converter Slip	rpm	0	28-41
Converter Clutch State	-	TCC Unlock	TCC Unlock
Calculate Trans Oil Temp	-	False	True
Trans Oil Temp	C°/F°	-3.0	104.53

Trans Temperature Voltage	Volts	2.86	2.75
LR Pressure Switch	-	Open	Closed
2-4 Pressure Switch	-	Open	Open
OD Pressure Switch	-	Open	Open
LC Pressure Switch	-	Open	Open
DC Pressure Switch	-	Open	Open
Pressure Switch Error Counter	-	0	0
OD Lockout Switch	-	Open	Open
Autostick Upshift	-	False	False
Autostick Downshift	-	False	False
Autostick Gear Position	-	No Display	No Display
PRNDL Display	-	Park	Park
T41/C1 Switch	-	Closed	Closed
T42/C2 Switch	-	Closed	Closed
T3/C3 Switch	-	Closed	Closed
T1/C4 Switch	-	Open	Open
Line Pressure Sensor	Volts	0.469	2.265 - 2.325
Actual Line Pressure Sensor 1	psi/kpa	0.0	124.0 - 127.0
Desired Line Pressure	psi/kpa	135.0	135.0
LR Clutch Fill Volume Index	-	35	35
LC Clutch Fill Volume Index	-	18	18
DC 1-2 Shift Fill Volume Index	-	28	28
2-4 or 2C Clutch Fill Volume Index	-	27	27
UD Clutch Fill Volume Index	-	25	25
OD Clutch Fill Volume Index	-	78	78
Present Gear	-	Neutral	Neutral
Target Gear	-	Neutral	Neutral

#### Footnotes

1. Value may vary due to altitude and weather.
2. O2 Sensor will toggle from Low to High every few seconds.
3. Pre-catalyst O2 Sensors will toggle from 0.0 volt to 1.0 volt when operating in closed loop.
4. Post-catalyst O2 Sensors should remain near a fixed value.
5. Value may vary due to ambient air temperature.
6. Value will change due to fuel level change. Voltage will increase as available fuel decreases.
7. Will vary due to fuel level and ambient air temperature.
8. Can be different due to vehicle option.
9. Value is application specific.