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CALSPAN ON-SITE CHILD RESTRAINT SYSTEM CRASH INVESTIGATION
SCI CASE NO: CA09074

VEHICLE: 2007 SATURN ION

LOCATION: VIRGINIA

CRASH DATE: SEPTEMBER 2009

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points are coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

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16. Abstract This on-site investigation focused on a forward facing Child Restraint System (CRS) and the source of injury for a 2-year-old male rear right passenger of a 2007 Saturn Ion. The CRS was installed utilizing the Saturn's 3-point manual lap and shoulder belt system that was routed through the forward facing belt path of the CRS. The Saturn was driven by a 43-year-old restrained female. This vehicle was also occupied by a 60-year-old restrained female front right passenger and a 12-year-old restrained male rear left passenger. The Saturn was struck by a 2004 Ford Explorer in a front-to-rear configuration within a four-leg, multi-lane intersection. The Saturn was displaced forward and subsequently departed the west side of the roadway where it impacted a wire field fence and two large rocks. The driver of the Saturn sustained a moderate severity injury and was transported by ground ambulance to a local hospital where she was treated and released. The 12-year-old rear left passenger sustained serious level injuries and was transported by ground ambulance to a local hospital and subsequently transferred to a regional trauma center and where he was admitted for treatment. The 60-year-old front right passenger and the 2-year-old rear right passenger sustained fatal injuries and expired at the scene of the crash.			
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BACKGROUND

This on-site investigation focused on a forward facing Child Restraint System (CRS) and the source of injury for a 2-year-old male rear right passenger of a 2007 Saturn Ion. The CRS was installed utilizing the Saturn's 3-point manual lap and shoulder belt system that was routed through the forward facing belt path of the CRS. The Saturn was driven by a 43-year-old restrained female. This vehicle was also occupied by a 60-year-old restrained female front right passenger and a 12-year-old restrained male rear left passenger. The Saturn was struck by a 2004 Ford Explorer in a front-to-rear configuration within a four-leg, multi-lane intersection. **Figure 1** is a right rear oblique view of the Saturn. The Saturn was displaced forward and subsequently departed the west side of the roadway where it impacted a wire field fence and two large rocks. The driver of the Saturn sustained a moderate severity injury and was transported by ground ambulance to a local hospital where she was treated and released. The 12-year-old rear left passenger sustained serious level injuries and was transported by ground ambulance to a local hospital and subsequently transferred to a regional trauma center and where he was admitted for treatment. The 60-year-old front right passenger and the 2-year-old rear right passenger sustained fatal injuries and expired at the scene of the crash.

Figure 1: Image of 2007 Saturn Ion right/rear oblique view displaying damage from Event 1.

The Crash Investigation Division (CID) of the National Highway Traffic Safety Administration (NHTSA) identified this crash through an Internet news article. Due to the fatal outcome and the presence of the CRS, the article was forwarded to the Calspan Special Crash Investigations (SCI) team for follow-up on September 15, 2009. Cooperation was established with the investigating police agency to conduct the on-site investigation and inspect the vehicles and the CRS that were secured in a police impound lot; however, legal issues associated with this case delayed the investigation. The case was subsequently assigned for an on-site investigation on October 20, 2009. The vehicle,

CRS and scene inspections took place October 22-23, 2009. The Event Data Recorder (EDR) in the Saturn and Ford Powertrain Control Module (PCM) were also imaged at that time.

SUMMARY

Crash Site

The crash occurred during nighttime hours in September 2009. At the time of the crash, the weather was clear and the bituminous roadways were dry. The crash occurred within a 4-leg intersection of a divided 6-lane north/south road and a 5-lane undivided east/west road, located within a rural commercial area. The intersection was controlled by multiple, 3-phase overhead traffic signals. Both vehicles shared the same pre-crash roadway environment which consisted of dedicated left and right turn lanes, two straight through lanes, and a depressed center grass median and was boarded by asphalt shoulders. The posted speed limit was 89 km/h (55 mph) in the north/south travel directions. The west side asphalt shoulder was bordered by a grass covered field. A wire fence was located 7.8 m (25.6 ft) west of the west edge line which paralleled the southbound roadway. A row of large rocks were located 37.6 m (123.4 ft) west of the referenced edge line which also paralleled the southbound roadway. At the time of the SCI scene inspection, an active work zone was in place and the asphalt road surface was removed to facilitate repaving of the travel lanes. As a consequence of this construction, any remaining physical evidence was destroyed during the repaving process. The on-scene police documentation of the physical evidence was used in the SCI scene diagram. A schematic of the crash is included at the end of this report as **Figure 12**. **Figure 2** is a southbound view of the intersection which depicts the pre-crash trajectory of the both the Saturn and the Ford.

Figure 2: Southbound view of intersection depicting pre-crash travel path for both vehicles.

Vehicle Data

2007 Saturn Ion

The 2007 Saturn Ion was manufactured in October 2006 and was identified by Vehicle Identification Number (VIN): 1G8AJ55F27Z (production number omitted). The electronic odometer display was not visible due to the lack of power to the vehicle. The power train consisted of a 2.2-liter, 4-cylinder engine linked to a 4-speed automatic transmission with front-wheel drive. The service brakes consisted of a 4-wheel ABS, front disc/rear drum brake system. The Saturn was equipped with Goodyear Assurance tires (size P195/60R15) mounted on OEM steel wheels. The vehicle manufacturer

recommended tire size was P195/60R15 with front and rear cold tire pressures of 207 kPa (30 PSI). The specific tire data at the time of the SCI inspection was as follows:

Position	Measured Tire Pressure	Measure Tread Depth	Damage
LF	138 kPa (20 PSI)	4 mm (5/32)	None
LR	131 kPa (19 PSI)	6 mm (8/32)	None
RF	131 kPa (19 PSI)	2 mm (3/32)	None
RR	Tire Flat	6 mm (8/32)	Rim deformation

The interior of the Saturn was configured with front bucket seats with adjustable head restraints, manual track adjustors, and reclining seatbacks. The left head restraint was adjusted 6 cm (2.4 in) above the seatback while the right side was adjusted 4 cm (1.6 in) above the seatback. The driver's seat track was adjusted 1 cm (0.4 in) forward of the full-rear track position and the front right seat was adjusted to the full-rear position. The seatback angle was measured at 10 degrees aft of vertical for the driver's seat. The front right seat had deformed rearward and the seatback had been repositioned prior to the inspection. Aftermarket seat covers were present on the front seats and covered the entire seatback and cushion. The rear seat was a three-passenger bench seat with a split, forward folding seatback (left side wide) and had integral head restraints in the two outboard positions.

The interior safety systems consisted of manual 3-point lap and shoulder safety belts in all five seat positions. The front safety belts were equipped with retractor pretensioners. The Saturn was equipped with a CAC frontal air bag system that consisted of dual-stage frontal air bags for the driver and front right passenger positions, seat track positioning sensors, safety belt buckle switches, and a front right occupant presence sensor. The vehicle manufacturer has certified that the frontal air bags in the Saturn were compliant with the advanced air bag requirements of the Federal Motor Vehicle Safety Standard No. 208.

2004 Ford Explorer

The 2004 Ford Explorer was identified by Vehicle Identification Number (VIN): 1FMZU73K64U (production number omitted). The date of manufacture was November 2003. The odometer reading was unknown due to the lack of power to the vehicle. The power train consisted of a 4.0-liter, 6-cylinder engine linked to a 5-speed automatic transmission with 4-wheel drive. The Ford was equipped with a 4-wheel ABS, disc brake system. The Ford was equipped with Bridgestone Dueler HT tires on the rear axle and the left front wheel position. A BF Goodrich Rugged Trail T/A was mounted on the right

front position. All four tires were size P245/65R17, mounted on OEM alloy wheels with the exception of the left rear tire that was mounted to an OEM steel wheel. This appeared to be the full-size spare tire. It was determined that this tire and wheel was mounted on the Ford at the time of crash due to the final rest markings applied to the tire by the investigating police agency. The vehicle manufacturer recommended tire size was P245/65R17 with front and rear cold tire pressures 241 kPa (35 PSI). The specific tire data at the time of the SCI inspection was as follows:

Position	Measured Pressure	Tread Depth	Damage
LF	207 kPa (30 PSI)	10 mm (12/32)	None
LR	214 kPa (31 PSI)	10 mm (13/32)	None
RF	214 kPa (31 PSI)	7 mm (9/32)	None
RR	200 kPa (29 PSI)	6 mm (8/32)	None

The interior of the Ford was configured with front bucket seats and folding rear seats. The safety systems consisted of redesigned frontal air bags for the driver and front right passenger positions and 3-point lap and shoulder belts for all seven seat positions. The front safety belts were equipped with retractor pretensioners.

Crash Sequence

Pre-Crash

The Saturn was traveling southbound on an approach to the controlled intersection in the second through lane (**Figure 3**). It is unknown whether the Saturn had come to a complete stop and was accelerating into the intersection, or had decelerated prior to entering the intersection. The specific pre-crash phase of the overhead traffic signal is unknown. The Ford was driven by a 26-year-old unrestrained male and occupied by three additional passengers. The male driver of the Ford was traveling southbound behind the Saturn in the same lane at a higher rate of speed. The imaged data from the Ford's Powertrain Control Module (PCM) recorded an initial speed of 106.8 km/h (66.4 mph), -20.2 seconds prior to the PCM receiving the Restraints Deployment Signal (RDS). The Ford decelerated to 101.2 km/h (62.9 mph) at the -0.6 second interval prior to the RDS. This speed was representative of the Ford's impact speed (**see below). The PCM data

Figure 3: Area of initial impact depicting post-crash roadway resurfacing

reported that the brake switch status was “Off” through the pre-crash phase. The Ford continued forward to impact without initiating avoidance action.

[**At the -0.4 second time interval prior to the RDS, the Ford’s reported speed had reduced to 72.2 km/h (45.2 mph). In the opinion of the SCI investigator, this discontinuity in the speed data was representative that the impact had already occurred. The referenced time was relative to the PCM receiving the RDS (the deployment command) and was not the time referenced to the impact. The time of the impact and the time the RDS was received could be different dependent on the state of the data communication across the vehicle’s data bus. The imaged PCM is included at the end of this report as Attachment A.]

Crash

The frontal area of the Ford impacted the back of the Saturn within the intersection (Event 1) in an off-set impact configuration. Approximately 70 percent of the Ford’s frontal plane engaged 85 percent of the back plane of the Saturn. The offset involved the left aspect of the Ford against the right aspect of the Saturn’s back plane. The direction of force for this initial event was in the 6 o’clock sector for the Saturn and the 12 o’clock sector for the Ford. The Ford’s front bumper significantly overrode the back bumper of the Saturn. The damage algorithm of the WinSMASH program was used to calculate the delta-V forces for this event. The results were characterized as a borderline reconstruction due to the underride damage configuration of the Saturn. The total delta-V of the Saturn was 33.0 km/h (20.5 mph), with longitudinal and lateral delta-V components of -33 km/h (-20.5 mph) and 0 km/h, respectively. The Ford’s total Delta-v was 23 km/h (14.3 mph) with longitudinal and lateral components of -23 km/h (-14.3 mph) and -0 km/h, respectively.

The off-set impact to the Saturn’s back plane resulted in a right biased crush pattern as the Saturn was accelerated forward. The right rear wheel of the Saturn was compressed against the forward aspect of the surrounding sheet metal and rear aspect of the right sill, thus restricting its rotation. As the Saturn was accelerated forward, it began to travel to its left as the left front tire entered the median at the south leg of the intersection. The Saturn initiated a clockwise arcing trajectory and reentered the southbound lanes. The vehicle traversed the travel lanes in a tracking mode, evidenced by a police reported 53 meter (174 feet) locked right rear tire mark that extended from the median across the travel lanes.

The Saturn departed the west side of the roadway as it continued its southwesterly trajectory. It traveled 10 meters (33 feet) off-road and penetrated the wire fence that paralleled the roadway (Event 2). This impact did not result in damage to the Saturn or alter the vehicle’s trajectory as it continued forward through the fence. The Saturn

continued off-road an additional 30 meters (98 feet) and impacted two large rocks where it came to final rest (Events 3 and 4). The direction of force for these off-road impacts was 12 o'clock. The Barrier Equivalent Speed (BES) algorithm of the WinSMASH program was used to calculate the Delta-V forces for the third event. The BES was calculated to be 15 km/h (9.3 mph).

Post-Crash

Police and emergency medical personnel responded to the crash site. The driver of the Saturn and the 12-year-old rear left occupant sustained moderate to serious level injuries and were transported to a local hospital for treatment. The driver was treated and released from the hospital. The second row left occupant was transferred to a trauma center where he was hospitalized for treatment of his injuries. The 60-year-old female front right occupant and the 2-year-old male second row right occupant were fatally injured and were pronounced deceased at the scene of the crash. Both the Saturn and the Ford sustained disabling damage and were towed from the crash site and placed in police impound where they were inspected for this investigation.

Vehicle Damage – 2007 Saturn Ion

Exterior

The 2007 Saturn Ion sustained severe damage to the back plane as a result of the impact with the 2004 Ford Explorer (Event 1). Maximum crush was 100 cm (39.3 in) and was located at edge of the trunk lid, inboard of the right corner. The damaged components included the bumper fascia, bumper beam, trunk, trunk lid, quarter panels, backlight, backlight header, right rear wheel and suspension components **(Figure 4)**. The direct contact damage began 26 cm (10.2 in) left of center and extended 101 cm (39.3 in) to the right bumper corner. A crush profile was documented along the bumper beam and was as follows: C1 = 9 cm (3.2 in), C2 = 17 cm (6.7 in), C3 = 25 cm (9.8 in), C4 = 32 cm (13.4 in), C5 = 41 cm (16.1 in), C6 = 50 cm (19.7 in). Due to the height differences between the front bumper of the Ford and the rear bumper of the Saturn, the front plane of the

Figure 4: Rear view of the impact damage to the Saturn.

Figure 5: Overhead view of the Saturn's crush at the bumper level and the above bumper level.

Ford overrode the rear bumper of the Saturn. The override resulted in direct contact and significant crush above the bumper beam (**Figure 5**). A second crush profile was documented along the projected back plane of the trunk lid (latch released) in order to capture the above bumper damage. This crush profile was as follows: C1 = 7 cm (2.8 in), C2 = 56 cm (22 in), C3 = 70 cm (27.6 in), C4 = 74 cm (29.1 in), C5 = 100 cm (39.3 in), C6 = 92 cm (36.2 in). The average of the crush profiles was used to calculate the delta-V and was as follows: C1 = 9 cm (3.5 in), C2 = 37 cm (14.6 in), C3 = 48 cm (18.9 in), C4 = 53 cm (20.9 in), C5 = 71 cm (28.0 in), C6 = 71 cm (28.0 in). All four doors remained closed during the crash. The right rear door of the Saturn was jammed closed; however, the remaining three doors were operational post-crash.

The Collision Deformation Classification (CDC) for the impact with the Ford (Event 1) was 06BDAW6. The impact with the wire fence (Event 2) did not result in any discernable crush or contact evidence to the vehicle. A CDC of 12F9999 (9 = unknown) was assigned to this event.

The Saturn also impacted two large rocks prior to coming to final rest. The first rock impact resulted in visual deformation to the frontal plane of the vehicle. The direct contact damage began 39 cm (15.4 in) left of the centerline and extended 28 cm (11 in) to the left. A crush profile was documented along the front bumper fascia with the following results: C1 = 15 cm (5.9 in), C2 = 10 cm (3.9 in), C3 = 2 cm (0.8 in), C4 = 0 cm, C5 = 5 cm (2 in), C6 = 10 cm (3.9 in). The CDC assigned to this third event was 12FLEN1.

The impact to the second rock (Event 4) resulted in minor frontal surface scratches with no discernable deformation. The direct contact damage measured 28 cm (11 in) beginning at the centerline and extending to the right. The assigned CDC for this direct damage was 12FZEN1.

Vehicle Damage – 2004 Ford Explorer

Exterior

The 2004 Ford Explorer sustained moderate severity frontal damage (**Figure 6**) as a result of the impact with the Saturn. The direct contact damage began 34 cm (13.4 in) right of the centerline and extended to 111 cm (43.7 in) to the left bumper corner. The maximum crush measured 15 cm (5.9 in) and was located 50 cm (19.7 in) inboard of the left bumper corner. Six equidistant

Figure 6: Front plane damage to the 2004 Ford Explorer from Event 1.

crush measurements were documented along the bumper beam and were as follows: C1 = 12 cm (4.7 in), C2 = 8 cm (3.1 in), C3 = 15 cm (5.9 in), C4 = 9 cm (3.5 in), C5 = 0 cm, C6 = 0 cm. The CDC for the Ford's impact with the Saturn (Event 1) was 12FDEW1.

Interior Damage - 2007 Saturn Ion

The interior damage to the Saturn consisted of occupant contact and passenger compartment intrusion or the rear seat area (**Figure 7**). The driver's contact points consisted of a scuff to the left side of the knee bolster and loading of the seatback. The seatback loading resulted in the outboard aspect of the seatback to rotate approximately 5 cm (2 in) rearward in a counterclockwise motion. The front right passenger's contact points consisted of body fluid transfers on the safety belt webbing. Evidence of seatback loading (scuff marks) was present on the front portion of the front right passenger's seatback. There was no discernable occupant contact points noted from the rear left passenger.

Figure 7: Depicts longitudinal intrusion of the second row seatback and rear shelf

The rear right passenger's contact with the posterior aspect of the front right seat back consisted of dermal transfers and body fluid that measured 7 cm x 12 cm (2.8 in x 4.7 in) width x length located at the top of the seatback, slightly left of center. The second contact point to this seatback was located 18cm (7.1 in) below the top of the seat cushion and measured 7 cm x 6 cm (2.8 x 2.3) width x length which consisted of a irregular indentations in the seat fabric.

The passenger compartment intrusions documented during the SCI vehicle inspection are listed in order of magnitude in the following table:

Position	Component	Magnitude	Direction
Rear right	Seatback	53 cm (20.9 in)	Longitudinal
Rear right	Rear shelf	51 cm (20.1 in)	Longitudinal
Rear center	Seatback	42 cm (16.5 in)	Longitudinal
Rear center	Rear shelf	40 cm (15.8 in)	Longitudinal
Rear left	Seatback	8 cm (3.1 in)	Longitudinal
Rear left	Rear shelf	5 cm (2.0 in)	Longitudinal

Manual Restraint Systems – 2007 Saturn Ion

The Saturn was equipped with a 3-point lap and shoulder safety belt systems for all five seat positions. The driver's safety belt system consisted of continuous loop webbing, a sliding latch plate, a rigid belt buckle stalk, an adjustable D-ring, and an Emergency Locking Retractor (ELR) with a pretensioner. The D-ring was located in the full-down position. At initial inspection, the safety belt webbing was found in a retracted position and spooled freely from the retractor when pulling force was applied. Further inspection of the latch plate revealed frictional abrasions to the full-width of the plastic surface as a result of the webbing being loaded by the driver. Corresponding frictional abrasions and body fluid were visible on the webbing. Based on the post-crash condition of this safety belt system, the driver was restrained at the time of the crash.

The front right safety belt system consisted of continuous loop webbing, a sliding latch plate, a rigid buckle stalk, an adjustable D-ring, a switchable ELR/Automatic Locking Retractor (ALR) and a retractor pretensioner. The D-ring was located in the full-down position. The safety belt webbing was found in a retracted position and spooled freely from the retractor when pulling force was applied. Further inspection of the latch plate revealed frictional abrasions to the full width of the plastic surface as a result of the webbing being loaded by the occupant. Corresponding frictional abrasions and body fluid were visible on the webbing. Based upon the post-crash condition of this safety belt system, the front right passenger was restrained at the time of the crash.

The second row left safety belt system consisted of continuous loop webbing, a sliding latch plate, a tethered belt buckle, a fixed D-ring and a switchable ELR/ALR. The safety belt webbing was found in a partially extended position which spooled with a slight resistance from the ELR functioning retractor when pulling force was applied. Further inspection of the latch plate revealed minor frictional abrasions to the full width of the plastic surface as a result of the webbing being loaded by its occupant. Based upon the post-crash condition of this safety belt system, the rear left passenger was restrained at the time of the crash.

The second row right safety belt system consisted of continuous loop webbing, a sliding latch plate, a tethered belt buckle, and a fixed D-ring, and ELR/ALR. The safety belt webbing was found to be routed through the forward facing belt positioning slots of a Cosco Touriva child restraint system (CRS) with the sliding latch plate fastened to the corresponding belt buckle. Further inspection of the seat belt system revealed that the switchable retractor was in ELR mode as the webbing moved freely from the retractor once the latch plate was disengaged from the belt buckle. The belt webbing was under moderate tension due to the second row seatback intrusions and exhibited loading evidence from engagement with the CRS. Based upon the SCI inspection, this CRS was

installed in the second row right seat position using the vehicle's 3-point safety belt system at the time of the crash.

Child Restraint System

During the SCI investigation the CRS was removed from the Saturn for further inspection following the full in-vehicle documentation of the position of the CRS and the routing of the safety belt system. The CRS (**Figure 8**) was identified as a Cosco Touriva with Model Number of 22-110-BRJ. The Date of Manufacture was August 30, 2007. The CRS was a convertible model that was used in the forward-facing position at the time of the crash. The specification placard recommended forward facing usage for children who weigh between 10-18 kg (22-40 lbs) with a height of 86-109 cm (34-43 in). The shell of the CRS was embossed with a clock that advised against use after year 2013.

Figure 8: Cosco Touriva convertible CRS restraint system.

Installation of this CRS in the forward facing mode required the use of the vehicle's 3-point safety belt system or the use of the LATCH (Lower Anchors and Tethers for CHildren) system. The Saturn was equipped with LATCH for the three rear seat positions; however, the CRS was not equipped with the LATCH system. Therefore; LATCH was not used in this installation.

This CRS was designed with an integrated 5-point safety belt harness system in conjunction with three belt positioning slots. The belt webbing was found to be threaded through the top positioning slots. The CRS was comprised of a molded plastic shell with an adjustable lower foot used for forward-facing installations. A fabric cushion covered the seating area of the CRS.

The inspection of this CSS revealed loading evidence (**Figure 9**) distributed across the entire plastic shell. A 21 cm (8.3 in) crack was located on the left side of the shell. Loading stress marks were

Figure 9: Loading stress marks distributed throughout the plastic shell of the CRS.

identified near the lower foot adjuster, top corners, both side wings, and bottom of the plastic shell, which was also deformed from the impact forces. Loading evidence was on the forward facing belt positioning slots which corresponded to the vehicle's belt webbing friction marks and stretching created by the second row seatback intrusion. Loading stress marks were also noted to the plastic structure, designed to reinforce the uppermost child seat harness strap slots, which was caused by the child occupant loading the 5-point harness. An examination of the 5-point harness system indicated that the two retainer clips, belt webbing and lower belt buckle were intact. The chest retainer clip was adjusted to below the level of the child's armpit. The left side was positioned 29 cm (11 cm) above the base of the CRS and the right was 36 cm (14 in) above the base. There was no significant loading evidence on the forward facing belt path of the CRS. The child seat locking clip was found in its original stowed shipping position located in the upper right side of the back of the plastic shell. It was not used during the crash.

Frontal Air Bag System- 2007 Saturn Ion

The 2007 Saturn Ion was equipped with a Certified Advanced 208-Compliant (CAC) frontal air bag system for the driver and front right passenger positions. The vehicle manufacturer has certified that the Saturn was compliant with the advanced air bag requirements of the Federal Motor Vehicle Safety Standard No. 208. The system consisted of dual-stage frontal air bags for seat track positioning sensors, safety belt buckle switches, and a front right occupant presence sensor. The CAC air bag system did not deploy in this crash.

Event Data Recorder

The air bag system in the Saturn consisted of CAC driver and front right passenger air bags that were monitored and controlled by a Sensing Diagnostic control Module (SDM) located under the center console. The SDM had Event Data Recording (EDR) capabilities. The EDR was imaged via the diagnostic link connector with the Bosch Crash Data Retrieval tool and software version 2.8. The imaged data was compiled and re-read with version 3.3. The imaged EDR data for the Saturn consisted of a Non-Deployment event that occurred 168 ignition cycles prior to the SCI investigation. The Saturn data was not related to this crash and is not included in this report.

OCCUPANT DEMOGRAPHICS/DATA – 2007 SATURN ION

Driver

Age/Sex:	43-year-old/Female
Height:	157 cm (62 in)
Weight:	107 kg (236 lbs)
Seat Track Position:	1 cm (0.4 in) forward of full-rear
Safety Belt Usage:	3-point lap and shoulder safety belt
Usage Source:	SCI vehicle inspection
Egress from Vehicle:	Removed from the vehicle by emergency medical personnel
Type of Medical Treatment:	Transported to a local hospital where she was treated and released

Driver Injuries

Injury	Injury Severity (AIS 90/Update 98)	Injury Source
Closed head injury with LOC	Moderate (160202.2,0)	Front row left head restraint
Small right occipital hematoma	Minor (190402.1,1)	Front row left head restraint
Nose abrasion	Minor (290202.1,4)	Steering wheel
Cervical strain	Minor (6402781.6)	Front row left head restraint
Left arm contusion	Minor (790402.1,2)	Left B-pillar

Source: Emergency Room Records

Driver Kinematics

The 43-year-old female driver of the Saturn was seated in a rear-track position and was restrained with the available 3-point safety belt system. At impact, the driver responded to the 6 o'clock impact force by initiating a rearward trajectory. She loaded the seatback and the adjustable head restraint with her back, shoulders and head. This loading was evidenced by 5 cm (2 in) of rearward deformation to the seatback. The driver sustained a small occipital hematoma, cervical strain and a closed head injury with a loss of consciousness from her contact with the front portion of the driver's seatback and the head restraint. She also sustained a contusion of the left arm from possible contact with the left door panel or the left B-pillar. There was no contact evidence to support this contusion.

After maximum engagement, the driver rebounded forward and loaded the 3-point safety belt system with her left shoulder, chest and pelvis. This loading produced frictional abrasions to the latch plate with corresponding abrasions to the webbing. The driver's head flexed forward and her nose contacted the steering wheel rim resulting in an abrasion. The driver's left knee loaded the knee bolster; however, this contact did not result in injury. The driver came to rest against the front of the seatback. She was

subsequently removed from the vehicle by rescue personnel and transported to a local hospital where she was treated for her injuries and released.

Front Right Passenger

Age/Sex:	60-year-old/Female
Height:	160 cm (63 in)
Weight:	156 kg (344 lbs)
Seat Track Position:	Full-rear
Safety Belt Usage:	3-point lap and shoulder safety belt
Usage Source:	SCI vehicle inspection
Egress from Vehicle:	Fatal, removed by rescue personnel
Type of Medical Treatment:	Not medically treated, non-invasive autopsy only

Front Right Passenger Injuries

Injury	Injury Severity (AIS 90/Update 98)	Injury Source
Blunt neck trauma, NFS	Injured, Unknown Severity (315999.7,0)	Front row right head restraint
Left rib fractures, NFS	Moderate (450210.2, 2)	Front right seatback
Bilateral arm dicing-type abrasions	Minor (790202.1,3)	Flying glass
Right wrist/hand contusion	Minor (790402.1,1)	Front right door panel (rear upper quadrant)
Right upper thigh contusions (just below hip) (1- 10 x 3.8cm, 1- 5 cm)	Minor (890402.1,1)	Front right safety belt (lap portion of webbing)
Right upper shin contusion, (10 x 7.6cm)	Minor (890402.1,1)	Right knee bolster

Source: Non-invasive autopsy

Front Right Passenger Kinematics

The 60-year-old female front right passenger was seated in a rear track position and was restrained with the 3-point safety belt system. At impact, this occupant responded to the 6 o'clock direction of force by initiating a rearward trajectory. She loaded the seatback and head restraint with her back, shoulders and head. This loading was evidenced by deformation of the seatback. She sustained unspecified left rib fractures and blunt neck trauma from loading the seatback and head restraint.

After maximum engagement, the front right passenger rebounded forward within the 3-point safety belt system. This loading produced frictional abrasions to the latch plate and with abrasions to the webbing. The front right passenger sustained two contusions to her

right upper thigh/groin area from contact with the lap portion of the safety belt webbing. Her lower extremities engaged the lower instrument panel resulting in a shin contusion. She also sustained dicing-type abrasions to both arms. These injuries were associated with contact from flying glass of the backlight and right rear door areas.

The front right passenger came to rest within her seat, with her upper body supported by the tension of the safety belt webbing, in a forward slumped posture. She was evaluated at the scene of the crash and was pronounced deceased. Her body was transported to the medical examiner's office where a non-invasive autopsy was performed.

Second Row Left Passenger

Age/Sex:	12-year-old/Male
Height:	157 cm (62 in)
Weight:	59 kg (130 lbs)
Seat Track Position:	Non-adjustable
Safety Belt Usage:	3-point lap and shoulder safety belt
Usage Source:	SCI vehicle inspection
Egress from Vehicle:	Removed by rescue personnel
Type of Medical Treatment:	Transported to a local hospital; transferred to a trauma center and hospitalized

Second Row Left Passenger Injuries

Injury	Injury Severity (AIS 90/Update 98)	Injury Source
T3 small left lamina fracture	Serious (650424.3,7)	Second row left seatback
Closed head injury, no LOC	Minor (160402.1,0)	Second row left seatback
Superficial abrasion, immediately below the chin	Minor (290202.1,8)	Rebound contact to the front row left seatback
Left elbow abrasion	Minor (790202.1,2)	Second row left seatback

Source: Hospital Medical Records

Second Row Left Passenger Kinematics

The 12-year-old male rear left passenger was restrained by the available 3-point safety belt system. At impact, he responded to the 6 o'clock direction of forces by initiating a rearward trajectory. He loaded the intruded and deformed second row seatback and sustained a small left lamina fracture to the third thoracic vertebrae, a left elbow abrasion and a closed head injury with no loss of consciousness. He rebounded forward into the 3-point safety belt system as evidenced by subtle friction marks to the latch plate from engagement with the webbing. The passenger sustained a superficial abrasion to the area below his chin from contact with the posterior aspect of the driver's seatback. There was no contact evidence to support this interaction.

The 12-year-old passenger came to rest within his seat position and was removed from the vehicle by the first responders. He was transported by ground ambulance to a local hospital and transferred to a regional trauma center where he was admitted for treatment of his injuries.

Second Row Right Passenger

Age/Sex:	2-year-old/Male
Height:	99 cm (39 in)
Weight:	22 kg (49 lbs)
Seat Track Position:	Non-adjustable
Safety Belt Usage:	Restrained within the convertible CRS
Usage Source:	SCI vehicle inspection
Egress from Vehicle:	Fatal at scene
Type of Medical Treatment:	Not medically treated, non-invasive autopsy only

Second Row Right Passenger Injuries

Injury	Injury Severity (AIS 90/Update 98)	Injury Source
Blunt head trauma, NFS	Injured, Unknown Severity (115999.7,0)	Front row right seatback
Atlanto-occipital dislocation	Moderate (650208.2,6)	Front row right seatback
C5 fracture, NFS	Moderate (650216.2,6)	Front row right seatback
Right eye abrasion (4.4 x 5 cm)	Minor (297202.1,1)	Front row right seatback
Right eye contusion (4.4 x 5 cm)	Minor (297402.1,1)	Front row right seatback
Nose abrasion (4.4 x 5 cm)	Minor (290202.1,4)	Front row right seatback
Nose contusion (4.4 x 5 cm)	Minor (290402.1,4)	Front row right seatback
Right cheek abrasion (4.4 x 5 cm)	Minor (290202.1,1)	Front row right seatback
Right cheek contusion (4.4 x 5 cm)	Minor (290402.1,1)	Front row right seatback
Lower lip laceration NFS	Minor (290600.1,8)	Front row right seatback
Chin contusion (8.8 x .6cm)	Minor (290402.1,8)	Front row right seatback
Center chest abrasion	Minor (490202.1,4)	5-point harness
Left upper arm contusion (2.5cm)	Minor (790402.1,2)	Child safety seat shell
Left upper abdomen	Minor (590402.1,2)	5-point harness

Injury	Injury Severity (AIS 90/Update 98)	Injury Source
contusion (5.7 x 0.3 cm)		
Left upper back abrasion	Minor (690202.1,7)	Child safety seat shell
Left upper thigh contusion (3.8 x 1.3 cm)	Minor (890402.1,2)	5-point harness
Right knee and shin contusion (1.3 cm on shin)	Minor (890402.1,1)	Front row right seatback
Left medial ankle lacerations	Minor (890602.1,2)	Front row right seatback

Source: Non-invasive autopsy

Second Row Right Passenger Kinematics

The 2-year-old male rear right passenger was restrained within the forward-facing CRS by the 5-point safety belt harness system. This occupant exceeded the weight restrictions of the CRS, which was secured to the vehicle by the 3-point lap and shoulder belt system. The safety belt retractor was in the ELR mode. At impact, the occupant responded to the 6 o'clock direction of force by initiating a rearward trajectory as he loaded the plastic shell of the CRS. He sustained an abrasion of the left upper back from his loading of the CRS shell. The shell and harness system restrained the child within the CRS.

The intrusion displaced the CRS forward **(Figure 10)** into the front right seatback. The child loaded the integral harness system resulting in soft tissue injuries of the chest, abdomen and upper left thigh. He also sustained a left upper arm contusion and a left upper back abrasion from his impact with the anterior aspect of the plastic CRS shell which exhibited stress marks and loading evidence during the SCI inspection. His head translated forward and struck the upper aspect of the front right seat back resulting in multiple soft tissue injuries of the face, inclusive of a right eye abrasion with contusion, a nose abrasion/contusion, right cheek abrasion/contusion, lower lip laceration and a contusion to the right aspect of the chin **(Figure 11)**. He also sustained unspecified head trauma, an atlanto-occipital dislocation, and an unspecified fracture of the fifth cervical vertebrae fracture from contact with the top of the posterior aspect of the front right seatback. The rear right child

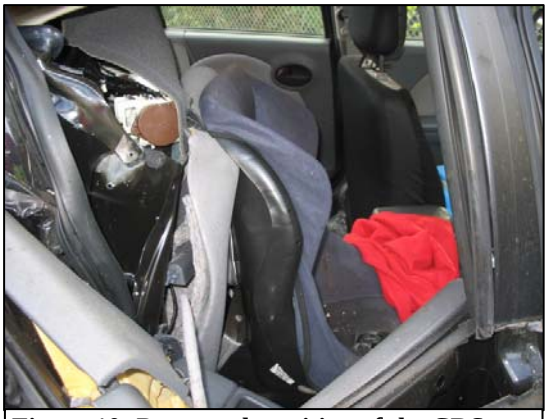


Figure 10: Post-crash position of the CRS.

passenger also sustained a left medial ankle laceration, a right knee contusion and right shin contusion from contact with the center aspect of the posterior the front right seatback.

Figure 11: Depicts the contact points to the rear aspect of the front right seatback.

The CRS came to rest against the deformed second row seatback in a position slightly forward of vertical. The front third of its base was forward of the leading edge of the second row seat cushion. The Saturn's 3-point safety belt system remained engaged within the belt buckle with the webbing routed through the CRS forward facing belt path. The child was removed from the CRS and was pronounced deceased at the scene of the crash.

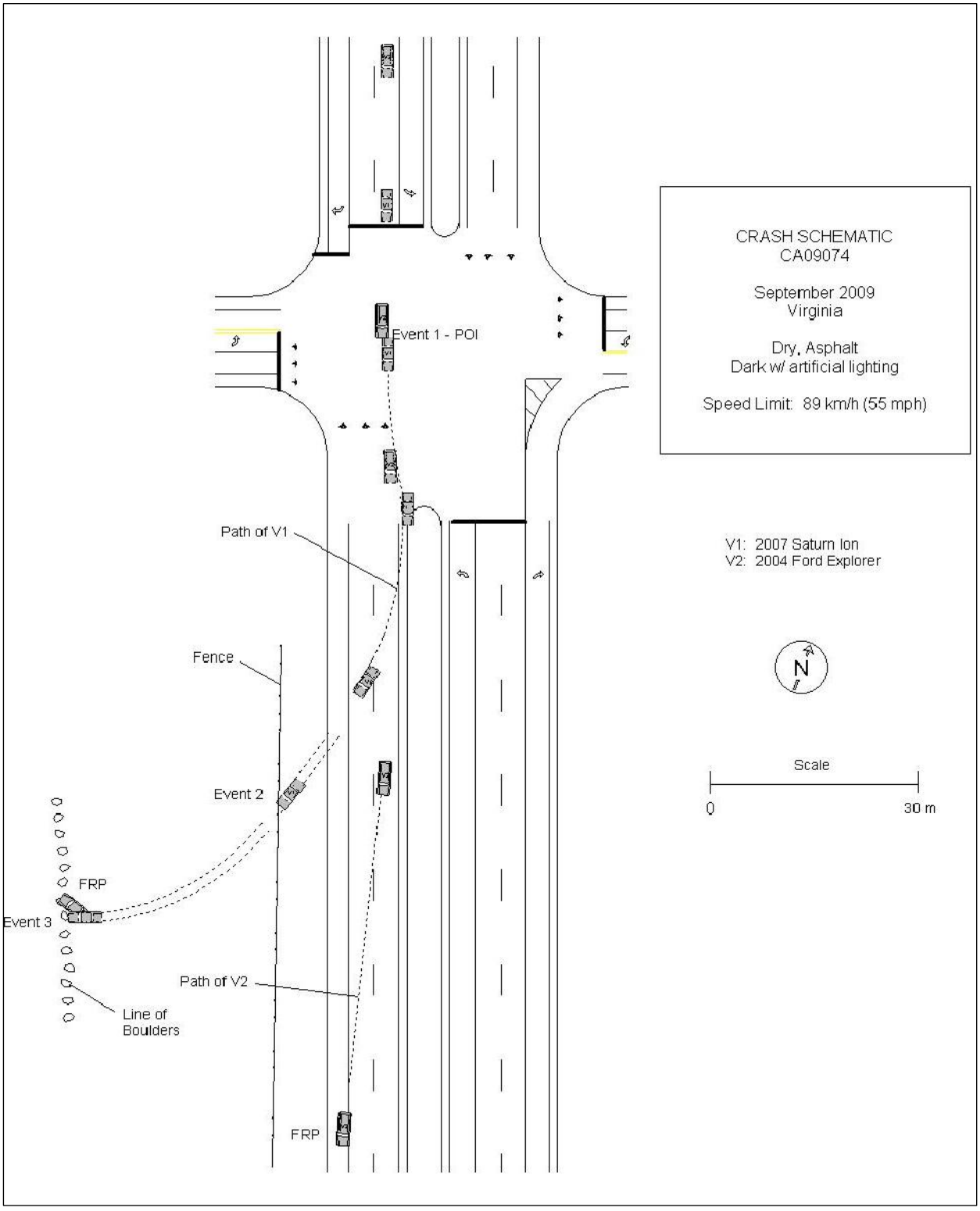


Figure 12: Scene Schematic

ATTACHMENT A

2004 Ford Explorer PCM Data

IMPORTANT NOTICE: Robert Bosch LLC and the manufacturers whose vehicles are accessible using the CDR System urge end users to use the latest production release of the Crash Data Retrieval system software when viewing, printing or exporting any retrieved data from within the CDR program. Using the latest version of the CDR software is the best way to ensure that retrieved data has been translated using the most current information provided by the manufacturers of the vehicles supported by this product.

CDR File Information

User Entered VIN	1FMZU73K64U******
User	
Case Number	
EDR Data Imaging Date	
Crash Date	
Filename	CA09074 PCM.CDR
Saved on	Thursday, October 22 2009 at 11:32:29 AM
Collected with CDR version	Crash Data Retrieval Tool 3.3
Reported with CDR version	Crash Data Retrieval Tool 3.4
EDR Device Type	powertrain control module
Restraint Deployment Signal Received	Yes

Comments

No comments entered.

Data Limitations

The retrieval of this data has been authorized by the vehicle's owner, or other legal authority such as a subpoena or search warrant, as indicated by the CDR tool user on Thursday, October 22 2009 at 11:32:29 AM .

FORD POWERTRAIN CONTROL MODULE EVENT DATA INTERPRETATION GUIDE

1. This document is intended to assist you in reading the data that has been retrieved from a Powertrain Control Module ("PCM") contained in a Ford vehicle. This document is further intended to provide general guidelines and is not intended to provide information regarding the interpretation of a specific read-out.

2. The data points in the “PCM EDR Data” tables shown in this report occur every 0.2 seconds of time. It should be pointed out that “Relative Time (calc.)” in these tables is calculated based on the 0.2 second time interval and is displayed relative to the receipt of a Restraint Deployment Signal from the RCM. The “Relative Time (calc.)” Information is not data which is retrieved from the PCM but is calculated based on the above information.

3. In the event that one of the vehicle's restraint devices (e.g., the vehicle's airbag or pretensioner) have deployed as a result of a collision, the Restraint Control Module or RCM will send a Restraints Deployment Signal (RDS) to the PCM via the vehicle data bus or through a direct wired connection. If the PCM receives an RDS, it will lock the data. It should be pointed out that the RCM and Vehicle Data Bus both require power for tenths of a second after the collision in order to send a signal or flag to the PCM.

4. If no RDS flag has been received from the RCM and there is still power to the PCM, the PCM data will not lock and the circular buffer will continuously overwrite itself when the vehicle’s ignition is in the run position. In this event, data contained in the PCM that was relevant to the collision may be lost. However, if power was lost as a result of the collision, or the ignition key was turned off shortly after the event, there may still be data relating to the collision in the PCM.

5. Finding the data relating to the moment of impact:

a.) With regard to the PCM EDR Data tables where a Restraint Deployment Signal is received, the data is displayed in ordered of the “Relative Time (calc.)” parameter beginning with the oldest recorded frame of data.

The moment of impact can be found by reviewing the data contained in the RDS column. Specifically, the data samples recorded with an RDS flag equal to “Received” in the PCM EDR Data tables signify points recorded after the PCM received the RDS signal from the RCM. If the PCM has received an RDS flag, the moment of impact is typically set at the RDS = “Not Received” in the PCM EDR Data tables reading that immediately precedes a reading of RDS = “Received”. The last RDS = “Received” data point signifies the last data point recorded in the event.

b.) With regard to the PCM EDR Data tables where a Restraint Deployment Signal is not received, the data is displayed in order of the “Buffer Address” parameter data beginning with the lowest address value. The PCM buffer is circular and the data point of first address listed in the PCM EDR Data tables does not necessarily signify the beginning of the PCM recording. The start and stop time of the PCM recording could be in the middle of the Table.

The moment of impact usually correlates with a discontinuity of the data listed in the table. If a single, significant discontinuity in the data is found, the data point immediately preceding the discontinuity is likely to be the last data point recorded. This point usually signifies impact time zero. If there is no single significant discontinuity, the data must be examined in detail to determine the largest discontinuity in the largest number of data elements. If no single largest discontinuity can be determined, it may not be possible to determine the moment of impact.

6. The PCM Data Tables further show a column labeled as the “Key on Timer - 63.75 Max (sec)” or PUTMR. The PUTMR shows the length of time that the PCM was functioning for the most recent key cycle. The timer ascends to a maximum value of 63.75 seconds. If the data was not locked by an

RDS flag and the ignition key was turned off and on again, the PCM will begin to write new data starting at the beginning of the data table. While it is not common, there are instances where the first portion of the data table has subsequent-key-on, post-crash data; while the latter portion of the data table has data from the key cycle in which the crash occurred. In other rare cases, an event has occurred in less than 25 seconds after key on and older data from prior key cycles has been left in the latter part of the buffer. Review the Key on Timer - 63.75 Max (sec) (PUTMR) data for discontinuities to determine if this has occurred.

7. Data displayed in the Key on Timer - 63.75 Max (sec) column has a resolution of 0.25 seconds and rounds actual data to the nearest 0.25 seconds. The data points occur every 0.2 seconds.

Actual time	Key on Timer display
0.0	0.0
0.2	0.25
0.4	0.50
0.6	0.50
0.8	0.75
1.0	1.00

8. Recorded Vehicle Speed is proportional to transmission output shaft speed and accuracy can be affected if the vehicle has had the tire size or inflation pressure or the final drive axle ratio changed from the factory build specifications.

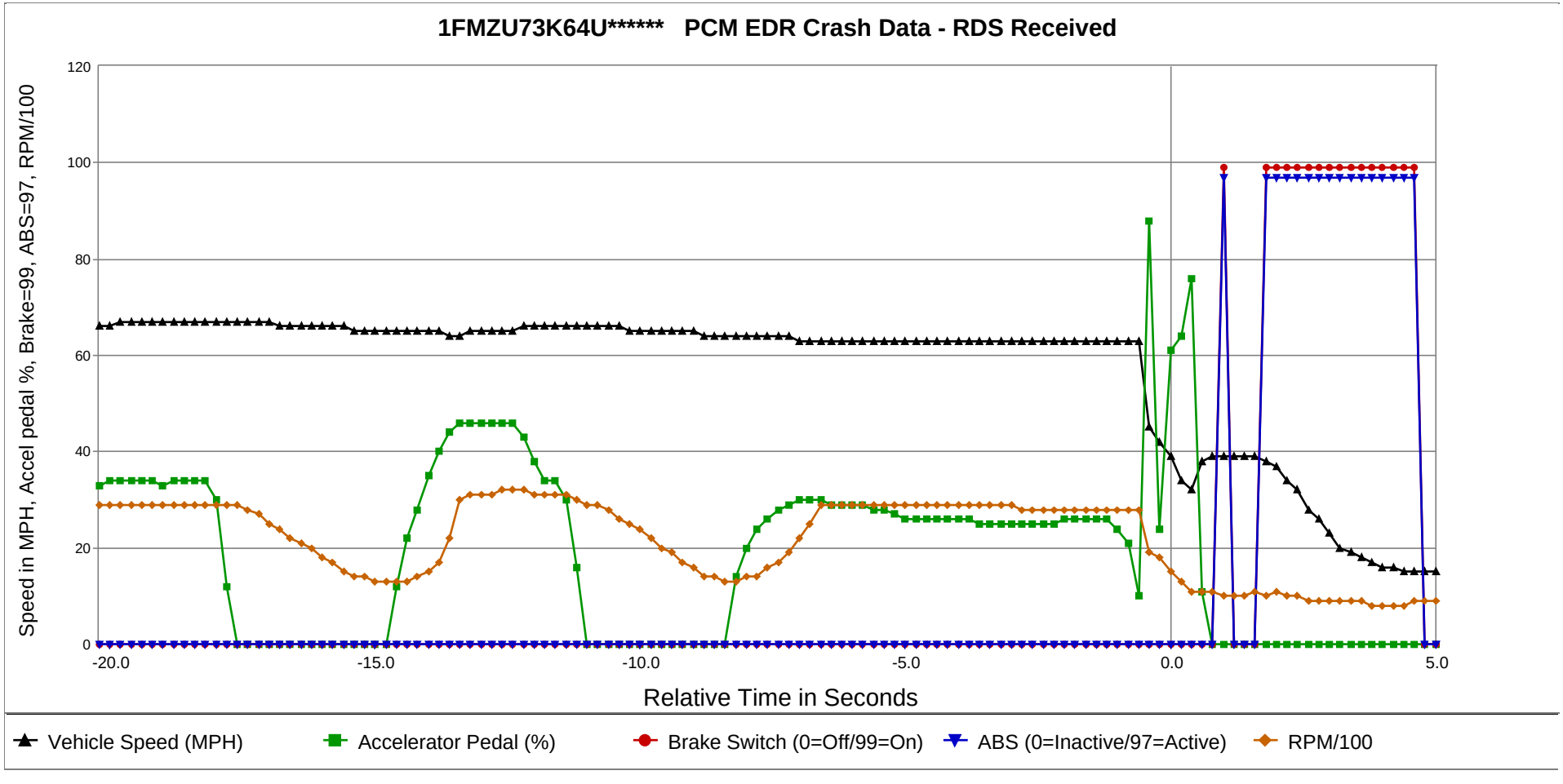
PCM Data Source:
• All PCM recorded data is fed directly from sensors to the PCM where raw signals are processed, and stored internally, except for the following parameters which are transmitted via the vehicle's communication network:

- Stability Control
- Traction Control
- ABS
- Restraint Deployment Signal

02005_PCM-1-2_r001

PCM Module Information

Vehicle Identification Number (from PCM)	1FMZU73K64U******
PCM File Name (calibration level)	PWAR6AW.HEX*
PCM Part Number	4U7A-12A650-JGD


1FMZU73K64U****** PCM EDR Crash Data - RDS Received
Speed in MPH, Accel pedal %, Brake=99, ABS=97, RPM/100
120
100
80
60
40
20
0
-20.0
-15.0
-10.0
-5.0
0.0
5.0
Relative Time in Seconds
Vehicle Speed (MPH)
Accelerator Pedal (%)
Brake Switch (0=Off/99=On)
ABS (0=Inactive/97=Active)
RPM/100

PCM EDR Data (1)

Buffer Address (Hex)	Relative Time (calc.) (Seconds)	Restraint Deployment Signal (Received / Not Received)	Speed, Vehicle Indicated (MPH [km/h])	Accelerator Pedal % Full (%)	Engine Throttle % Full (%)	Brake Switch (On / Off)	Brake SC De-ac (On / Off)	ABS (Active / Inactive)	Transmission - Neutral (Neutral / Not Neutral)
EA0006A0	-20.2	Not Received	66.4 [106.8]	33	18	OFF	OFF	Not Active	Not Neutral
EA0006B0	-20.0	Not Received	66.5 [107]	33.5	18	OFF	OFF	Not Active	Not Neutral
EA0006C0	-19.8	Not Received	66.5 [107]	33.5	18	OFF	OFF	Not Active	Not Neutral
EA0006D0	-19.6	Not Received	66.6 [107.2]	33.5	18	OFF	OFF	Not Active	Not Neutral
EA0006E0	-19.4	Not Received	66.7 [107.3]	33.5	18	OFF	OFF	Not Active	Not Neutral
EA0006F0	-19.2	Not Received	66.6 [107.2]	33.5	18	OFF	OFF	Not Active	Not Neutral
EA000700	-19.0	Not Received	66.8 [107.5]	33	18	OFF	OFF	Not Active	Not Neutral
EA000710	-18.8	Not Received	66.8 [107.5]	33.5	18	OFF	OFF	Not Active	Not Neutral
EA000720	-18.6	Not Received	66.9 [107.6]	33.5	18	OFF	OFF	Not Active	Not Neutral
EA000730	-18.4	Not Received	66.9 [107.6]	33.5	18	OFF	OFF	Not Active	Not Neutral
EA000740	-18.2	Not Received	67 [107.8]	33.5	18	OFF	OFF	Not Active	Not Neutral
EA000750	-18.0	Not Received	67.1 [108]	29.5	17	OFF	OFF	Not Active	Not Neutral
EA000760	-17.8	Not Received	67 [107.8]	11.5	13	OFF	OFF	Not Active	Not Neutral
EA000770	-17.6	Not Received	66.5 [107]	0	11	OFF	OFF	Not Active	Not Neutral
EA000780	-17.4	Not Received	66.9 [107.6]	0	11	OFF	OFF	Not Active	Not Neutral
EA000790	-17.2	Not Received	66.6 [107.2]	0	10.5	OFF	OFF	Not Active	Not Neutral
EA0007A0	-17.0	Not Received	66.6 [107.2]	0	10	OFF	OFF	Not Active	Not Neutral
EA0007B0	-16.8	Not Received	66.4 [106.8]	0	10	OFF	OFF	Not Active	Not Neutral
EA0007C0	-16.6	Not Received	66.1 [106.4]	0	9.5	OFF	OFF	Not Active	Not Neutral
EA0007D0	-16.4	Not Received	66.1 [106.4]	0	9	OFF	OFF	Not Active	Not Neutral
EA0007E0	-16.2	Not Received	66 [106.2]	0	9	OFF	OFF	Not Active	Not Neutral
EA0007F0	-16.0	Not Received	65.8 [105.9]	0	8.5	OFF	OFF	Not Active	Not Neutral
EA000010	-15.8	Not Received	65.7 [105.7]	0	8	OFF	OFF	Not Active	Not Neutral
EA000020	-15.6	Not Received	65.7 [105.7]	0	7.5	OFF	OFF	Not Active	Not Neutral
EA000030	-15.4	Not Received	65.5 [105.4]	0	7	OFF	OFF	Not Active	Not Neutral
EA000040	-15.2	Not Received	65.3 [105.1]	0	7	OFF	OFF	Not Active	Not Neutral
EA000050	-15.0	Not Received	65.2 [104.9]	0	7	OFF	OFF	Not Active	Not Neutral
EA000060	-14.8	Not Received	65 [104.6]	0	7	OFF	OFF	Not Active	Not Neutral
EA000070	-14.6	Not Received	65 [104.6]	12	7	OFF	OFF	Not Active	Not Neutral
EA000080	-14.4	Not Received	64.8 [104.3]	21.5	8.5	OFF	OFF	Not Active	Not Neutral
EA000090	-14.2	Not Received	64.6 [103.9]	27.5	9	OFF	OFF	Not Active	Not Neutral
EA0000A0	-14.0	Not Received	64.6 [103.9]	35	11	OFF	OFF	Not Active	Not Neutral
EA0000B0	-13.8	Not Received	64.6 [103.9]	40	14.5	OFF	OFF	Not Active	Not Neutral
EA0000C0	-13.6	Not Received	64.4 [103.6]	43.5	18.5	OFF	OFF	Not Active	Not Neutral
EA0000D0	-13.4	Not Received	64.3 [103.5]	46	24.5	OFF	OFF	Not Active	Not Neutral
EA0000E0	-13.2	Not Received	64.7 [104.1]	46.5	24.5	OFF	OFF	Not Active	Not Neutral
EA0000F0	-13.0	Not Received	64.9 [104.4]	46.5	24.5	OFF	OFF	Not Active	Not Neutral
EA000100	-12.8	Not Received	65.1 [104.7]	46.5	24.5	OFF	OFF	Not Active	Not Neutral
EA000110	-12.6	Not Received	65.2 [104.9]	46.5	24.5	OFF	OFF	Not Active	Not Neutral
EA000120	-12.4	Not Received	65.5 [105.4]	46.5	24.5	OFF	OFF	Not Active	Not Neutral
EA000130	-12.2	Not Received	65.8 [105.9]	43	23.5	OFF	OFF	Not Active	Not Neutral
EA000140	-12.0	Not Received	65.9 [106]	37.5	20.5	OFF	OFF	Not Active	Not Neutral
EA000150	-11.8	Not Received	65.9 [106]	34.5	19	OFF	OFF	Not Active	Not Neutral
EA000160	-11.6	Not Received	66 [106.2]	34.5	19	OFF	OFF	Not Active	Not Neutral
EA000170	-11.4	Not Received	66.1 [106.4]	30	18	OFF	OFF	Not Active	Not Neutral
EA000180	-11.2	Not Received	66.1 [106.4]	15.5	15	OFF	OFF	Not Active	Not Neutral
EA000190	-11.0	Not Received	66 [106.2]	0	13	OFF	OFF	Not Active	Not Neutral
EA0001A0	-10.8	Not Received	65.8 [105.9]	0	11.5	OFF	OFF	Not Active	Not Neutral
EA0001B0	-10.6	Not Received	65.7 [105.7]	0	11	OFF	OFF	Not Active	Not Neutral
EA0001C0	-10.4	Not Received	65.6 [105.6]	0	10.5	OFF	OFF	Not Active	Not Neutral
EA0001D0	-10.2	Not Received	65.4 [105.2]	0	10.5	OFF	OFF	Not Active	Not Neutral
EA0001E0	-10.0	Not Received	65.4 [105.2]	0	10	OFF	OFF	Not Active	Not Neutral
EA0001F0	-9.8	Not Received	65.3 [105.1]	0	9.5	OFF	OFF	Not Active	Not Neutral
EA000200	-9.6	Not Received	65.2 [104.9]	0	9	OFF	OFF	Not Active	Not Neutral
EA000210	-9.4	Not Received	65 [104.6]	0	8.5	OFF	OFF	Not Active	Not Neutral
EA000220	-9.2	Not Received	64.8 [104.3]	0	8	OFF	OFF	Not Active	Not Neutral
EA000230	-9.0	Not Received	64.7 [104.1]	0	7.5	OFF	OFF	Not Active	Not Neutral
EA000240	-8.8	Not Received	64.4 [103.6]	0	7.5	OFF	OFF	Not Active	Not Neutral
EA000250	-8.6	Not Received	64.5 [103.8]	0	7	OFF	OFF	Not Active	Not Neutral
EA000260	-8.4	Not Received	64.1 [103.1]	0	7	OFF	OFF	Not Active	Not Neutral
EA000270	-8.2	Not Received	64.1 [103.1]	13.5	7.5	OFF	OFF	Not Active	Not Neutral
EA000280	-8.0	Not Received	63.9 [102.8]	19.5	8.5	OFF	OFF	Not Active	Not Neutral
EA000290	-7.8	Not Received	63.9 [102.8]	24	9.5	OFF	OFF	Not Active	Not Neutral
EA0002A0	-7.6	Not Received	63.7 [102.5]	26.5	10	OFF	OFF	Not Active	Not Neutral
EA0002B0	-7.4	Not Received	63.6 [102.3]	28	11	OFF	OFF	Not Active	Not Neutral
EA0002C0	-7.2	Not Received	63.6 [102.3]	29	12.5	OFF	OFF	Not Active	Not Neutral

Buffer Address (Hex)	Relative Time (calc.) (Seconds)	Restraint Deployment Signal (Received / Not Received)	Speed, Vehicle Indicated (MPH [km/h])	Accelerator Pedal % Full (%)	Engine Throttle % Full (%)	Brake Switch (On / Off)	Brake SC De-ac (On / Off)	ABS (Active / Inactive)	Transmission - Neutral (Neutral / Not Neutral)
EA0002D0	-7.0	Not Received	63.2 [101.7]	29.5	14	OFF	OFF	Not Active	Not Neutral
EA0002E0	-6.8	Not Received	63.1 [101.5]	29.5	16	OFF	OFF	Not Active	Not Neutral
EA0002F0	-6.6	Not Received	63.1 [101.5]	29.5	17.5	OFF	OFF	Not Active	Not Neutral
EA000300	-6.4	Not Received	63 [101.4]	29	17.5	OFF	OFF	Not Active	Not Neutral
EA000310	-6.2	Not Received	63.1 [101.5]	29	17.5	OFF	OFF	Not Active	Not Neutral
EA000320	-6.0	Not Received	63.1 [101.5]	29	17.5	OFF	OFF	Not Active	Not Neutral
EA000330	-5.8	Not Received	63.2 [101.7]	29	17.5	OFF	OFF	Not Active	Not Neutral
EA000340	-5.6	Not Received	63.2 [101.7]	28.5	17	OFF	OFF	Not Active	Not Neutral
EA000350	-5.4	Not Received	63.2 [101.7]	27.5	17	OFF	OFF	Not Active	Not Neutral
EA000360	-5.2	Not Received	63.2 [101.7]	27	16.5	OFF	OFF	Not Active	Not Neutral
EA000370	-5.0	Not Received	63.1 [101.5]	26.5	16.5	OFF	OFF	Not Active	Not Neutral
EA000380	-4.8	Not Received	63 [101.4]	25.5	16.5	OFF	OFF	Not Active	Not Neutral
EA000390	-4.6	Not Received	63.1 [101.5]	25.5	16.5	OFF	OFF	Not Active	Not Neutral
EA0003A0	-4.4	Not Received	63.2 [101.7]	25.5	16.5	OFF	OFF	Not Active	Not Neutral
EA0003B0	-4.2	Not Received	63.1 [101.5]	25.5	16.5	OFF	OFF	Not Active	Not Neutral
EA0003C0	-4.0	Not Received	63.1 [101.5]	25.5	16.5	OFF	OFF	Not Active	Not Neutral
EA0003D0	-3.8	Not Received	63.1 [101.5]	25.5	16	OFF	OFF	Not Active	Not Neutral
EA0003E0	-3.6	Not Received	63 [101.4]	25	16	OFF	OFF	Not Active	Not Neutral
EA0003F0	-3.4	Not Received	63.2 [101.7]	25	16	OFF	OFF	Not Active	Not Neutral
EA000400	-3.2	Not Received	62.9 [101.2]	25	16	OFF	OFF	Not Active	Not Neutral
EA000410	-3.0	Not Received	63.1 [101.5]	25	16	OFF	OFF	Not Active	Not Neutral
EA000420	-2.8	Not Received	63 [101.4]	25	16	OFF	OFF	Not Active	Not Neutral
EA000430	-2.6	Not Received	63 [101.4]	25	16	OFF	OFF	Not Active	Not Neutral
EA000440	-2.4	Not Received	62.9 [101.2]	25	16	OFF	OFF	Not Active	Not Neutral
EA000450	-2.2	Not Received	62.9 [101.2]	25	16	OFF	OFF	Not Active	Not Neutral
EA000460	-2.0	Not Received	63 [101.4]	26	16	OFF	OFF	Not Active	Not Neutral
EA000470	-1.8	Not Received	62.9 [101.2]	26	16	OFF	OFF	Not Active	Not Neutral
EA000480	-1.6	Not Received	63 [101.4]	26	16	OFF	OFF	Not Active	Not Neutral
EA000490	-1.4	Not Received	63 [101.4]	26	16	OFF	OFF	Not Active	Not Neutral
EA0004A0	-1.2	Not Received	63.1 [101.5]	25.5	16	OFF	OFF	Not Active	Not Neutral
EA0004B0	-1.0	Not Received	63 [101.4]	23.5	15.5	OFF	OFF	Not Active	Not Neutral
EA0004C0	-0.8	Not Received	63 [101.4]	21	15	OFF	OFF	Not Active	Not Neutral
EA0004D0	-0.6	Not Received	62.9 [101.2]	10.5	12	OFF	OFF	Not Active	Not Neutral
EA0004E0	-0.4	Not Received	45.2 [72.7]	88	95.5	OFF	OFF	Not Active	Not Neutral
EA0004F0	-0.2	Not Received	42 [67.6]	24	12.5	OFF	OFF	Not Active	Not Neutral
EA000500	0.0	Not Received	39.4 [63.4]	61	54	OFF	OFF	Not Active	Not Neutral
EA000510	0.2	Received	33.9 [54.5]	63.5	87.5	OFF	OFF	Not Active	Not Neutral
EA000520	0.4	Received	31.8 [51.2]	76	78.5	OFF	OFF	Not Active	Not Neutral
EA000530	0.6	Received	38 [61.1]	11	71	OFF	OFF	Not Active	Not Neutral
EA000540	0.8	Received	38.9 [62.6]	0	6	OFF	OFF	Not Active	Not Neutral
EA000550	1.0	Received	38.5 [61.9]	0	6.5	ON	OFF	Active	Not Neutral
EA000560	1.2	Received	38.7 [62.3]	0	6.5	OFF	OFF	Not Active	Not Neutral
EA000570	1.4	Received	38.8 [62.4]	0	6.5	OFF	OFF	Not Active	Not Neutral
EA000580	1.6	Received	38.7 [62.3]	0	6.5	OFF	OFF	Not Active	Not Neutral
EA000590	1.8	Received	38.5 [61.9]	0	6	ON	OFF	Active	Not Neutral
EA0005A0	2.0	Received	37 [59.5]	0	6	ON	ON	Active	Not Neutral
EA0005B0	2.2	Received	34.1 [54.9]	0	6	ON	ON	Active	Not Neutral
EA0005C0	2.4	Received	32.1 [51.6]	0	6	ON	ON	Active	Not Neutral
EA0005D0	2.6	Received	28.3 [45.5]	0	6	ON	ON	Active	Not Neutral
EA0005E0	2.8	Received	25.5 [41]	0	6	ON	ON	Active	Not Neutral
EA0005F0	3.0	Received	22.8 [36.7]	0	6	ON	ON	Active	Not Neutral
EA000600	3.2	Received	20.5 [33]	0	6	ON	ON	Active	Not Neutral
EA000610	3.4	Received	18.9 [30.4]	0	6	ON	ON	Active	Not Neutral
EA000620	3.6	Received	17.5 [28.2]	0	6	ON	ON	Active	Not Neutral
EA000630	3.8	Received	17 [27.4]	0	6	ON	OFF	Active	Not Neutral
EA000640	4.0	Received	16.5 [26.5]	0	6	ON	OFF	Active	Not Neutral
EA000650	4.2	Received	16.3 [26.2]	0	6	ON	OFF	Active	Not Neutral
EA000660	4.4	Received	15.5 [24.9]	0	6	ON	OFF	Active	Not Neutral
EA000670	4.6	Received	15.1 [24.3]	0	6	ON	OFF	Active	Not Neutral
EA000680	4.8	Received	15 [24.1]	0	6	OFF	OFF	Not Active	Not Neutral
EA000690	5.0	Received	14.9 [24]	0	6	OFF	OFF	Not Active	Not Neutral

PCM EDR Data (2)

Buffer Address (Hex)	Relative Time (calc.) (Seconds)	Transmission - Reverse (Reverse / Not Reverse)	Speed Control (On / Off)	Engine RPM (RPM)	Driveline Torque Commanded (N-m)	Driveline Torque Actual (N-m)	Traction Control (Active / Inactive)	Stability Control (Active / Inactive)	Key On Timer 63.75 Max (sec) (Seconds)
EA0006A0	-20.2	Not Reverse	OFF	2917	99	90	Not Active	Not Active	63.75
EA0006B0	-20.0	Not Reverse	OFF	2913.25	98	89	Not Active	Not Active	63.75
EA0006C0	-19.8	Not Reverse	OFF	2919.25	98	89	Not Active	Not Active	63.75
EA0006D0	-19.6	Not Reverse	OFF	2927.75	98	89	Not Active	Not Active	63.75
EA0006E0	-19.4	Not Reverse	OFF	2926	99	89	Not Active	Not Active	63.75
EA0006F0	-19.2	Not Reverse	OFF	2923.75	99	89	Not Active	Not Active	63.75
EA000700	-19.0	Not Reverse	OFF	2926.75	99	89	Not Active	Not Active	63.75
EA000710	-18.8	Not Reverse	OFF	2928.25	98	89	Not Active	Not Active	63.75
EA000720	-18.6	Not Reverse	OFF	2936.25	99	89	Not Active	Not Active	63.75
EA000730	-18.4	Not Reverse	OFF	2933.75	98	88	Not Active	Not Active	63.75
EA000740	-18.2	Not Reverse	OFF	2936.75	98	88	Not Active	Not Active	63.75
EA000750	-18.0	Not Reverse	OFF	2938	95	85	Not Active	Not Active	63.75
EA000760	-17.8	Not Reverse	OFF	2936.75	64	55	Not Active	Not Active	63.75
EA000770	-17.6	Not Reverse	OFF	2920	9	0	Not Active	Not Active	63.75
EA000780	-17.4	Not Reverse	OFF	2808.5	-9	-18	Not Active	Not Active	63.75
EA000790	-17.2	Not Reverse	OFF	2687.75	-18	-27	Not Active	Not Active	63.75
EA0007A0	-17.0	Not Reverse	OFF	2545.5	-22	-31	Not Active	Not Active	63.75
EA0007B0	-16.8	Not Reverse	OFF	2387.25	-21	-30	Not Active	Not Active	63.75
EA0007C0	-16.6	Not Reverse	OFF	2237.5	-22	-30	Not Active	Not Active	63.75
EA0007D0	-16.4	Not Reverse	OFF	2119.25	-23	-32	Not Active	Not Active	63.75
EA0007E0	-16.2	Not Reverse	OFF	1967.75	-24	-32	Not Active	Not Active	63.75
EA0007F0	-16.0	Not Reverse	OFF	1809.75	-24	-32	Not Active	Not Active	63.75
EA000010	-15.8	Not Reverse	OFF	1660	-19	-27	Not Active	Not Active	63.75
EA000020	-15.6	Not Reverse	OFF	1543.5	-18	-27	Not Active	Not Active	63.75
EA000030	-15.4	Not Reverse	OFF	1429.5	-13	-21	Not Active	Not Active	63.75
EA000040	-15.2	Not Reverse	OFF	1356.25	-1	-9	Not Active	Not Active	63.75
EA000050	-15.0	Not Reverse	OFF	1322.75	4	-3	Not Active	Not Active	63.75
EA000060	-14.8	Not Reverse	OFF	1307	6	-1	Not Active	Not Active	63.75
EA000070	-14.6	Not Reverse	OFF	1289	5	-2	Not Active	Not Active	63.75
EA000080	-14.4	Not Reverse	OFF	1258.5	12	5	Not Active	Not Active	63.75
EA000090	-14.2	Not Reverse	OFF	1351.25	21	16	Not Active	Not Active	63.75
EA0000A0	-14.0	Not Reverse	OFF	1465.5	30	27	Not Active	Not Active	63.75
EA0000B0	-13.8	Not Reverse	OFF	1713.5	62	64	Not Active	Not Active	63.75
EA0000C0	-13.6	Not Reverse	OFF	2221.75	115	117	Not Active	Not Active	63.75
EA0000D0	-13.4	Not Reverse	OFF	2982.75	167	158	Not Active	Not Active	63.75
EA0000E0	-13.2	Not Reverse	OFF	3130.75	176	166	Not Active	Not Active	63.75
EA0000F0	-13.0	Not Reverse	OFF	3140	177	166	Not Active	Not Active	63.75
EA000100	-12.8	Not Reverse	OFF	3143.5	178	167	Not Active	Not Active	63.75
EA000110	-12.6	Not Reverse	OFF	3152	176	166	Not Active	Not Active	63.75
EA000120	-12.4	Not Reverse	OFF	3155	175	165	Not Active	Not Active	63.75
EA000130	-12.2	Not Reverse	OFF	3160.5	173	163	Not Active	Not Active	63.75
EA000140	-12.0	Not Reverse	OFF	3117.5	143	133	Not Active	Not Active	63.75
EA000150	-11.8	Not Reverse	OFF	3061.75	109	99	Not Active	Not Active	63.75
EA000160	-11.6	Not Reverse	OFF	3058.5	104	95	Not Active	Not Active	63.75
EA000170	-11.4	Not Reverse	OFF	3052.75	101	92	Not Active	Not Active	63.75
EA000180	-11.2	Not Reverse	OFF	2993.5	66	57	Not Active	Not Active	63.75
EA000190	-11.0	Not Reverse	OFF	2939.75	24	14	Not Active	Not Active	63.75
EA0001A0	-10.8	Not Reverse	OFF	2880	0	-9	Not Active	Not Active	63.75
EA0001B0	-10.6	Not Reverse	OFF	2778.75	-14	-23	Not Active	Not Active	63.75
EA0001C0	-10.4	Not Reverse	OFF	2648.5	-20	-29	Not Active	Not Active	63.75
EA0001D0	-10.2	Not Reverse	OFF	2516.25	-23	-32	Not Active	Not Active	63.75
EA0001E0	-10.0	Not Reverse	OFF	2359.25	-25	-34	Not Active	Not Active	63.75
EA0001F0	-9.8	Not Reverse	OFF	2199.5	-24	-33	Not Active	Not Active	63.75
EA000200	-9.6	Not Reverse	OFF	2043.25	-25	-33	Not Active	Not Active	63.75
EA000210	-9.4	Not Reverse	OFF	1867.75	-22	-30	Not Active	Not Active	63.75
EA000220	-9.2	Not Reverse	OFF	1723	-21	-29	Not Active	Not Active	63.75
EA000230	-9.0	Not Reverse	OFF	1579.25	-18	-27	Not Active	Not Active	63.75
EA000240	-8.8	Not Reverse	OFF	1445.75	-15	-23	Not Active	Not Active	63.75
EA000250	-8.6	Not Reverse	OFF	1376.5	-3	-10	Not Active	Not Active	63.75
EA000260	-8.4	Not Reverse	OFF	1344.5	3	-4	Not Active	Not Active	63.75
EA000270	-8.2	Not Reverse	OFF	1337.75	6	0	Not Active	Not Active	63.75
EA000280	-8.0	Not Reverse	OFF	1370.5	15	7	Not Active	Not Active	63.75
EA000290	-7.8	Not Reverse	OFF	1447	22	15	Not Active	Not Active	63.75
EA0002A0	-7.6	Not Reverse	OFF	1568.75	29	22	Not Active	Not Active	63.75
EA0002B0	-7.4	Not Reverse	OFF	1736.5	35	27	Not Active	Not Active	63.75
EA0002C0	-7.2	Not Reverse	OFF	1939.25	47	38	Not Active	Not Active	63.75

Buffer Address (Hex)	Relative Time (calc.) (Seconds)	Transmission - Reverse (Reverse / Not Reverse)	Speed Control (On / Off)	Engine RPM (RPM)	Driveline Torque Commanded (N-m)	Driveline Torque Actual (N-m)	Traction Control (Active / Inactive)	Stability Control (Active / Inactive)	Key On Timer 63.75 Max (sec) (Seconds)
EA0002D0	-7.0	Not Reverse	OFF	2221.5	58	49	Not Active	Not Active	63.75
EA0002E0	-6.8	Not Reverse	OFF	2522.5	69	60	Not Active	Not Active	63.75
EA0002F0	-6.6	Not Reverse	OFF	2906	77	68	Not Active	Not Active	63.75
EA000300	-6.4	Not Reverse	OFF	2905.5	83	73	Not Active	Not Active	63.75
EA000310	-6.2	Not Reverse	OFF	2908.5	84	75	Not Active	Not Active	63.75
EA000320	-6.0	Not Reverse	OFF	2902.25	85	75	Not Active	Not Active	63.75
EA000330	-5.8	Not Reverse	OFF	2907.75	85	75	Not Active	Not Active	63.75
EA000340	-5.6	Not Reverse	OFF	2909	83	74	Not Active	Not Active	63.75
EA000350	-5.4	Not Reverse	OFF	2898	78	69	Not Active	Not Active	63.75
EA000360	-5.2	Not Reverse	OFF	2891	75	65	Not Active	Not Active	63.75
EA000370	-5.0	Not Reverse	OFF	2892.5	73	64	Not Active	Not Active	63.75
EA000380	-4.8	Not Reverse	OFF	2883	73	63	Not Active	Not Active	63.75
EA000390	-4.6	Not Reverse	OFF	2886.25	71	62	Not Active	Not Active	63.75
EA0003A0	-4.4	Not Reverse	OFF	2887.25	71	61	Not Active	Not Active	63.75
EA0003B0	-4.2	Not Reverse	OFF	2881	71	62	Not Active	Not Active	63.75
EA0003C0	-4.0	Not Reverse	OFF	2882.5	70	61	Not Active	Not Active	63.75
EA0003D0	-3.8	Not Reverse	OFF	2880	69	59	Not Active	Not Active	63.75
EA0003E0	-3.6	Not Reverse	OFF	2873	69	60	Not Active	Not Active	63.75
EA0003F0	-3.4	Not Reverse	OFF	2877.5	68	58	Not Active	Not Active	63.75
EA000400	-3.2	Not Reverse	OFF	2873.75	68	58	Not Active	Not Active	63.75
EA000410	-3.0	Not Reverse	OFF	2866	68	59	Not Active	Not Active	63.75
EA000420	-2.8	Not Reverse	OFF	2813.5	68	59	Not Active	Not Active	63.75
EA000430	-2.6	Not Reverse	OFF	2764.5	69	60	Not Active	Not Active	63.75
EA000440	-2.4	Not Reverse	OFF	2765	69	60	Not Active	Not Active	63.75
EA000450	-2.2	Not Reverse	OFF	2761.5	69	59	Not Active	Not Active	63.75
EA000460	-2.0	Not Reverse	OFF	2760.75	69	59	Not Active	Not Active	63.75
EA000470	-1.8	Not Reverse	OFF	2757.75	70	61	Not Active	Not Active	63.75
EA000480	-1.6	Not Reverse	OFF	2767.75	71	62	Not Active	Not Active	63.75
EA000490	-1.4	Not Reverse	OFF	2765.25	71	61	Not Active	Not Active	63.75
EA0004A0	-1.2	Not Reverse	OFF	2761.25	71	61	Not Active	Not Active	63.75
EA0004B0	-1.0	Not Reverse	OFF	2760.5	69	60	Not Active	Not Active	63.75
EA0004C0	-0.8	Not Reverse	OFF	2766.5	62	53	Not Active	Not Active	63.75
EA0004D0	-0.6	Not Reverse	OFF	2761.25	43	34	Not Active	Not Active	63.75
EA0004E0	-0.4	Not Reverse	OFF	1904.25	309	299	Not Active	Not Active	63.75
EA0004F0	-0.2	Not Reverse	OFF	1832.5	129	122	Not Active	Not Active	63.75
EA000500	0.0	Not Reverse	OFF	1531.75	232	223	Not Active	Not Active	63.75
EA000510	0.2	Not Reverse	OFF	1321.25	268	259	Not Active	Not Active	63.75
EA000520	0.4	Not Reverse	OFF	1146.5	262	410	Not Active	Not Active	63.75
EA000530	0.6	Not Reverse	OFF	1072.5	259	345	Not Active	Not Active	63.75
EA000540	0.8	Not Reverse	OFF	1050.25	178	169	Not Active	Not Active	63.75
EA000550	1.0	Not Reverse	OFF	971.25	107	151	Active	Not Active	63.75
EA000560	1.2	Not Reverse	OFF	980.25	62	84	Not Active	Not Active	63.75
EA000570	1.4	Not Reverse	OFF	1009.75	36	43	Not Active	Not Active	63.75
EA000580	1.6	Not Reverse	OFF	1055.5	24	25	Not Active	Not Active	63.75
EA000590	1.8	Not Reverse	OFF	1040.25	15	12	Active	Not Active	63.75
EA0005A0	2.0	Not Reverse	OFF	1078.5	11	4	Active	Not Active	63.75
EA0005B0	2.2	Not Reverse	OFF	1036.25	9	2	Active	Not Active	63.75
EA0005C0	2.4	Not Reverse	OFF	1006.75	9	1	Active	Not Active	63.75
EA0005D0	2.6	Not Reverse	OFF	899.25	9	2	Active	Not Active	63.75
EA0005E0	2.8	Not Reverse	OFF	878.5	9	2	Active	Not Active	63.75
EA0005F0	3.0	Not Reverse	OFF	894	12	5	Active	Not Active	63.75
EA000600	3.2	Not Reverse	OFF	900.25	14	7	Active	Not Active	63.75
EA000610	3.4	Not Reverse	OFF	878.25	14	11	Active	Not Active	63.75
EA000620	3.6	Not Reverse	OFF	859.5	15	12	Active	Not Active	63.75
EA000630	3.8	Not Reverse	OFF	836.5	15	14	Active	Not Active	63.75
EA000640	4.0	Not Reverse	OFF	812	17	17	Active	Not Active	63.75
EA000650	4.2	Not Reverse	OFF	839	19	19	Active	Not Active	63.75
EA000660	4.4	Not Reverse	OFF	823.75	19	20	Active	Not Active	63.75
EA000670	4.6	Not Reverse	OFF	850.25	20	39	Active	Not Active	63.75
EA000680	4.8	Not Reverse	OFF	860.25	19	37	Not Active	Not Active	63.75
EA000690	5.0	Not Reverse	OFF	910.25	19	35	Not Active	Not Active	63.75

Hexadecimal Data

Data that the vehicle manufacturer has specified for data retrieval is shown in the hexadecimal data section of the CDR report. The hexadecimal data section of the CDR report may contain data that is not translated by the CDR program. The control module contains additional data that is not retrievable by the CDR system.

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0000100C0:  31 46 4D 5A 55 37 33 4B 36 34 55 2A 2A 2A 2A 2A
0000100D0:  2A FF FF FF

000010046:  50 57 41 52 36 41 57 2E 48 45 58 2A

000010054:  34 55 37 41 4A 47 44 2A

0EA000000:  08 05 00 F3 00 00 00 00 00 00 00 00 00 00 00 00
0EA000010:  00 04 10 19 F0 01 ED 20 D9 01 E5 00 F8 FF 00 1F
0EA000020:  00 04 0F 18 1E 01 EE 20 D4 01 E5 00 F8 FF 00 F7
0EA000030:  00 04 0E 16 56 01 F3 20 BD 01 EB 00 F8 FF 00 CE
0EA000040:  00 04 0E 15 31 01 FF 20 A4 01 F7 00 F8 FF 00 F5
0EA000050:  00 04 0E 14 AB 02 04 20 9C 01 FD 00 F8 FF 00 78
0EA000060:  00 04 0E 14 6C 02 06 20 86 01 FF 00 F8 FF 00 C9
0EA000070:  18 04 0E 14 24 02 05 20 82 01 FE 00 F8 FF 00 FF
0EA000080:  2B 04 11 13 AA 02 0C 20 61 02 05 00 F8 FF 00 76
0EA000090:  37 04 12 15 1D 02 15 20 53 02 10 00 F8 FF 00 EE
0EA0000A0:  46 04 16 16 E6 02 1E 20 50 02 1B 00 F8 FF 00 00
0EA0000B0:  50 04 1D 1A C6 02 3E 20 53 02 40 00 F8 FF 00 C3
0EA0000C0:  57 04 25 22 B7 02 73 20 35 02 75 00 F8 FF 00 6F
0EA0000D0:  5C 04 31 2E 9B 02 A7 20 29 02 9E 00 F8 FF 00 1D
0EA0000E0:  5D 04 31 30 EB 02 B0 20 5F 02 A6 00 F8 FF 00 83
0EA0000F0:  5D 04 31 31 10 02 B1 20 70 02 A6 00 F8 FF 00 4B
0EA000100:  5D 04 31 31 1E 02 B2 20 8F 02 A7 00 F8 FF 00 1C
0EA000110:  5D 04 31 31 40 02 B0 20 A0 02 A6 00 F8 FF 00 EC
0EA000120:  5D 04 31 31 4C 02 AF 20 BF 02 A5 00 F8 FF 00 C3
0EA000130:  56 04 2F 31 62 02 AD 20 E3 02 A3 00 F8 FF 00 96
0EA000140:  4B 04 29 30 B6 02 8F 20 F1 02 85 00 F8 FF 00 82
0EA000150:  45 04 26 2F D7 02 6D 20 F7 02 63 00 F8 FF 00 A9
0EA000160:  45 04 26 2F CA 02 68 20 FE 02 5F 00 F8 FF 00 B8
0EA000170:  3C 04 24 2F B3 02 65 21 11 02 5C 00 F8 FF 00 CC
0EA000180:  1F 04 1E 2E C6 02 42 21 10 02 39 00 F8 FF 00 24
0EA000190:  00 04 1A 2D EF 02 18 20 FE 02 0E 00 F8 FF 00 87
0EA0001A0:  00 04 17 2D 00 02 00 20 E9 01 F7 00 F8 FF 00 BE
0EA0001B0:  00 04 16 2B 6B 01 F2 20 D6 01 E9 00 F8 FF 00 86
0EA0001C0:  00 04 15 29 62 01 EC 20 C9 01 E3 00 F8 FF 00 AB
0EA0001D0:  00 04 15 27 51 01 E9 20 B6 01 E0 00 F8 FF 00 D7
0EA0001E0:  00 04 14 24 DD 01 E7 20 B8 01 DE 00 F8 FF 00 51
0EA0001F0:  00 04 13 22 5E 01 E8 20 A9 01 DF 00 F8 FF 00 E0
0EA000200:  00 04 12 1F ED 01 E7 20 98 01 DF 00 F8 FF 00 67
0EA000210:  00 04 11 1D 2F 01 EA 20 7C 01 E2 00 F8 FF 00 3E
0EA000220:  00 04 10 1A EC 01 EB 20 6A 01 E3 00 F8 FF 00 95
0EA000230:  00 04 0F 18 AD 01 EE 20 5C 01 E5 00 F8 FF 00 E0
0EA000240:  00 04 0F 16 97 01 F1 20 36 01 E9 00 F8 FF 00 17
0EA000250:  00 04 0E 15 82 01 FD 20 40 01 F6 00 F8 FF 00 0B
0EA000260:  00 04 0E 15 02 02 03 20 0F 01 FC 00 F8 FF 00 AF
0EA000270:  1B 04 0F 14 E7 02 06 20 0F 02 00 00 F8 FF 00 A7
0EA000280:  27 04 11 15 6A 02 0F 1F F2 02 07 00 F8 FF 00 23
0EA000290:  30 04 13 16 9C 02 16 1F F4 02 0F 00 F8 FF 00 D4
0EA0002A0:  35 04 14 18 83 02 1D 1F D5 02 16 00 F8 FF 00 F6
0EA0002B0:  38 04 16 1B 22 02 23 1F CD 02 1B 00 F8 FF 00 4C
0EA0002C0:  3A 04 19 1E 4D 02 2F 1F C7 02 26 00 F8 FF 00 08
0EA0002D0:  3B 04 1C 22 B6 02 3A 1F 9A 02 31 00 F8 FF 00 AE
0EA0002E0:  3B 04 20 27 6A 02 45 1F 90 02 3C 00 F8 FF 00 E5
0EA0002F0:  3B 04 23 2D 68 02 4D 1F 8A 02 44 00 F8 FF 00 D4
0EA000300:  3A 04 23 2D 66 02 53 1F 83 02 49 00 F8 FF 00 D3
0EA000310:  3A 04 23 2D 72 02 54 1F 8D 02 4B 00 F8 FF 00 BA
0EA000320:  3A 04 23 2D 59 02 55 1F 8D 02 4B 00 F8 FF 00 D2
0EA000330:  3A 04 23 2D 6F 02 55 1F 98 02 4B 00 F8 FF 00 B1
0EA000340:  39 04 22 2D 74 02 53 1F 98 02 4A 00 F8 FF 00 B1
0EA000350:  37 04 22 2D 48 02 4E 1F 9D 02 45 00 F8 FF 00 E4
0EA000360:  36 04 21 2D 2C 02 4B 1F 97 02 41 00 F8 FF 00 0F
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0EA000370:  35 04 21 2D 32 02 49 1F 8D 02 40 00 F8 FF 00 17
0EA000380:  33 04 21 2D 0C 02 49 1F 81 02 3F 00 F8 FF 00 4C
0EA000390:  33 04 21 2D 19 02 47 1F 93 02 3E 00 F8 FF 00 30
0EA0003A0:  33 04 21 2D 1D 02 47 1F 96 02 3D 00 F8 FF 00 2A
0EA0003B0:  33 04 21 2D 04 02 47 1F 8E 02 3E 00 F8 FF 00 4A
0EA0003C0:  33 04 21 2D 0A 02 46 1F 90 02 3D 00 F8 FF 00 44
0EA0003D0:  33 04 20 2D 00 02 45 1F 8E 02 3B 00 F8 FF 00 54
0EA0003E0:  32 04 20 2C E4 02 45 1F 86 02 3C 00 F8 FF 00 79
0EA0003F0:  32 04 20 2C F6 02 44 1F 94 02 3A 00 F8 FF 00 5C
0EA000400:  32 04 20 2C E7 02 44 1F 77 02 3A 00 F8 FF 00 88
0EA000410:  32 04 20 2C C8 02 44 1F 89 02 3B 00 F8 FF 00 94
0EA000420:  32 04 20 2B F6 02 44 1F 82 02 3B 00 F8 FF 00 6E
0EA000430:  32 04 20 2B 32 02 45 1F 86 02 3C 00 F8 FF 00 2C
0EA000440:  32 04 20 2B 34 02 45 1F 75 02 3C 00 F8 FF 00 3B
0EA000450:  32 04 20 2B 26 02 45 1F 6F 02 3B 00 F8 FF 00 50
0EA000460:  34 04 20 2B 23 02 45 1F 7B 02 3B 00 F8 FF 00 45
0EA000470:  34 04 20 2B 17 02 46 1F 79 02 3D 00 F8 FF 00 50
0EA000480:  34 04 20 2B 3F 02 47 1F 82 02 3E 00 F8 FF 00 1D
0EA000490:  34 04 20 2B 35 02 47 1F 7C 02 3D 00 F8 FF 00 2E
0EA0004A0:  33 04 20 2B 25 02 47 1F 8A 02 3D 00 F8 FF 00 31
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0EA000500:  7A 04 6C 17 EF 02 E8 13 B5 02 DF 00 F8 FF 00 86
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0EA0007E0:  00 04 12 1E BF 01 E8 21 02 01 E0 00 F8 FF 00 29
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0EA0007F0:  00 04 11 1C 47 01 E8 20 EB 01 E0 00 F8 FF 00 BC
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