Date/Time Rptd:	Framingham Police Department Framingham, MA OFFENSE / INCIDENT REPORT	Incident No:
11/22/11 21:26		1108038 /

Location:	Cov Area:	Date/Time of Occurence:
122 EDGELL RD	C Middlesex, MA	11/22/11 11/22/11

Offense: ACCIDENT-M/V REPORT
INJURY REPORT

Name: KRISHTAL, VAL	Role: VICTIM	Phone: 508) 872-1212
Address: 1 WILLIAM WELCH WY FRAMINGHAM, MA 01702	Drivers Lic:	Social Sec:
Employer Name: FRAMINGHAM POLICE DEPT	Employer Address:	Phone: (work) 508) 872-1212

Type of Victim	Date of Birth	Inc Age	Sup Age	Height	Weight	Race	Sex	Resident
			N/A			W	M	R

Incident Summary:

OFFICER KRISHTAL SUSTAINED WOUND TO NOSE. SEE INJURY REPORT.

Investigating Officer:	Date:	Supervisor:	Date:
282 BAKER, LESTER	11/22/11		

Case Status: INACTIVE
Approval Status:

1108038

29163

Police Use Only

Commonwealth of Massachusetts
Motor Vehicle Crash Police Report

RMV Document Number

Date of Crash	Time of Crash	City/Town	Number Vehicles	Number Injured	Speed Limit	Police Type
11/22/2011	21:27 24HR	FRAMINGHAM	1	1	35	☑ Local Police

Latitude ____ Longitude ____ MBTA Police ☐ Other: ☐ State Police

AT INTERSECTION: < LOCATION > NOT AT INTERSECTION:

1 4 Route# EDGELL RD Direction Name of Roadway/Street

At

Route# WARREN PL Direction Name of Intersecting Roadway/Street

Also at Intersection with

2 3 Route# Direction Name of Intersecting Roadway/Street

9 2

10 2

11 1

Route# Direction Address # Name of Roadway/Street

____ Feet [N S E W] of ___ ___ ___ . ___ Mile Marker or ____ Exit Number

____ Feet [N S E W] of Route# Intersecting Roadway/Street

____ Feet [N S E W] of Landmark

3 2 **Please Select One of the Following:** ☑ Vehicle 1 # Occupants 1 ☐ Hit/Run ☐ Moped

License # ____ St MA DOB/Age ____

Sex 1 Lic. Class 18 D 18 Lic. Restrictions 19 2 CDL Endorsement N

Reg # 941 Reg Type MVN Reg State MA

Veh Year 2010 Veh Make FORD Veh Config. 20 1

4 1 Operator KRISHTAL (Last) VAL (First) (Middle)

Address 1 WILLIAM WELCH WAY

City FRAMINGHAM State MA Zip 01702

Insurance Company ARGONAULT

12 7 Owner TOWN OF (Last) (First) (Middle)

Address 1 WILLIAM WELCH WAY

City FRAMINGHAM State MA Zip 01702

5 Vehicle Travel Direction: [X S E W] Responding to Emergency? 1

Citation # (If Issued) ____

Viol. 1: Ch/Sec/Sub ____ Viol. 2: Ch/Sec/Sub ____

6 2 Viol. 3: Ch/Sec/Sub ____ Viol. 4: Ch/Sec/Sub ____

Vehicle Action Prior to Crash 21 1

Event Sequence 22 1 22 41 22 35 22 22

Most Harmful Event 23 35

Driver Contributing Code 24 11 24 12

Underride/Override 25 1 Towed X

Damaged Area Code: (Circle Up to Three)

0 None
10 Undercarriage
11 Totaled
97 Other
99 Unknown

13 1

Please fill out for operator and all occupants involved

Name (Last First Middle)	Address	DOB/Age	Sex	26 Seat Pos.	27 Safety System	28 Airbag Status	29 Airbag Switch	30 Eject Code	31 Trap Code	32 Injury Status	33 Transp. Code	Medical Facility
Operator	See Above			1	1	1	1	0	0	3	2	MWMC

7 3 **Please Select One of the Following:** ☐ Vehicle ___ # Occupants ☐ Non-Motorist A Type 14 Action 15 Location 16 Condition 17 ☐ Hit/Run ☐ Moped

License # ____ St ____ DOB/Age ____

Sex ____ Lic. Class 18 18 Lic. Restrictions 19 CDL Endorsement ____

Reg # ____ Reg Type ____ Reg State ____

Veh Year ____ Veh Make ____ Veh Config. 20

8 1 Operator ____ (Last) (First) (Middle)

Address ____

City ____ State ____ Zip ____

Insurance Company ____

Owner ____ (Last) (First) (Middle)

Address ____

City ____ State ____ Zip ____

Vehicle Travel Direction: [N S E W] Responding to Emergency? ____

Citation # (If Issued) ____

Viol. 1: Ch/Sec/Sub ____ Viol. 2: Ch/Sec/Sub ____

Viol. 3: Ch/Sec/Sub ____ Viol. 4: Ch/Sec/Sub ____

Vehicle Action Prior to Crash 21

Event Sequence 22 22 22 22

Most Harmful Event 23

Driver Contributing Code 24 24

Underride/Override 25 Towed X

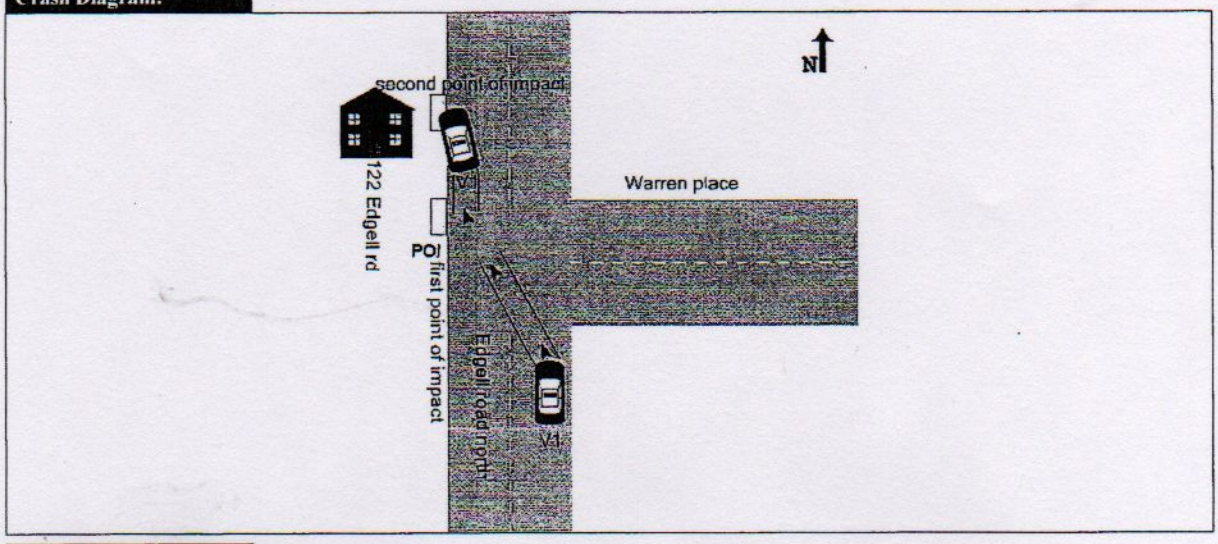
Damaged Area Code: (Circle Up to Three)

0 None
10 Undercarriage
11 Totaled
97 Other
99 Unknown

Please fill out for operator/non-motorist and all occupants involved

Name (Last First Middle)	Address	DOB/Age	Sex	26 Seat Pos.	27 Safety System	28 Airbag Status	29 Airbag Switch	30 Eject Code	31 Trap Code	32 Injury Status	33 Transp. Code	Medical Facility
Operator/Non-Motorist	See Above			1								

Crash Diagram:



Crash Narrative:

21:23 SUSP NOISE: 71 LEIGH ST (CK OK) 950: PATRIARCA 941: KRISHTAL 942: GIROTTI 948: BAKER 954: GREEN 10 IN A ROW THEN ANOTHER 5. SPOKE WITH SOME RESIDENTS, NO ONE ELSE REPORTS HEARING ANYTHING.

Officer Krishtal while responding to the above call, was involved in a single car accident. Officer Krishtal left the roadway and struck a cement/stone wall. There were approximately 60 feet of yaw marks, in the roadway. The scene was photographed. The vehicle was towed, and Officer Krishtal was transported to MWMC.

Officer Krishtal states he was traveling north on Edgell Rd. responding to a report of gun shots.

Witnesses:

Name (Last, First, Middle)	Address	Phone #	Statement

Property Damage:

Owner (Last, First, Middle)	Address	Phone #	34-Type	Description of Damaged Property

Truck and Bus Information: Registration # (From Vehicle Section)

Carrier Name _____ Carrier Issuing Authority Code [35]

Address _____ City _____ St _____ Zip _____

US DOT #: _____ State Number _____ Issuing State _____ ICC #: _____ Interstate [36]

Cargo Body Type Code [37] Gross Vehicle Weight [38]

Trailer Reg #: _____ Reg Type _____ Reg State _____ Reg Year _____ Trailer Length [39]

Hazmat Information:

Placard [40] Material 1 digit # [41] Material Name _____ Material 4 digit # _____ Release code [42]

LESTER BAKER		282	Framingham Police Department		11/22/2011
Police Officer Name (Please Print)	Signature	ID/Badge #	Department	Precinct/Barracks	Date

CDP1 11-24-00

Narrative

He states he was traveling 45 to 50 MPH. He states a light colored sedan traveling south crossed into his lane forcing him to swerve to the right, sending his cruiser into a fish tail, which led to him losing control.

Officer Krishtal could not provide a further description of the vehicle, and there was no vehicle on scene matching that description. There were no independent witnesses at the scene.

Property Owner information

Commonwealth of Massachusetts

Collision Analysis and Reconstruction Section

2011-CAR-000491

Collision Reconstruction Report

Collision Analysis and Reconstruction Section	11/22/11 9:26 PM	# Vehicles:	# Injured: 1
Sergeant Marsh, Stephen	On Call: No	1	Speed Limit: 30

Arrival Time: 2011-11-25 10:00:13 Cleared Time: 2011-11-25 14:00:13 Crash - MV PI

122 EDGELL ROAD, FRAMINGHAM, MA

Latitude: 42 18.26 Longitude: 71 26.00

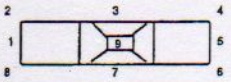
Requesting Agency: Framingham Requesting Agency Case#: Framingham Police OUI Related: No

Cause Determination: Operator/Human, Driving Behavior, Speed Recon Opinion Charges: Under

Light:	6 - Dark - unknown roadway lighting	Trafficway:	1 - Two-way, not divided
Weather:	2 - Cloudy	School Bus:	No
Traffic Ctrl:	1 - No controls	Work Zone:	No
Ctrl Function:		Collision:	1 - Single Vehicle Crash
Road Surface:	1 - Dry	1st Harmful:	Unknown Fixed Object
InterSection:	1 - Not at intersection	1st Harmful Location:	7 - Outside Roadway

Vehicle# 1 Reg# MP941 MA MVN 2010 Ford Crown Victoria Impounded

Insurance Co:	Self	Action Prior:	1 - Travelling Straight ahead
Veh Config:	1 - Passenger car	Most Harmful:	Unknown Fixed Object
Hit/Run:	No	Event Seq. 1:	20 - Curb
Moped:	No	Event Seq. 2:	35 - Other Fixed Object (Wall,
Travel Direction:	N	Event Seq. 3:	
Respond Emerg:	Yes	Event Seq. 4:	
Driver Contributing:	7 - Driving too fast for conditions	Under/Override:	1 - None
Tow Company:	Local PD Towed	Tow Reason:	Crash
CDR:	Yes	CDR Supported:	Yes



Damaged Area(s) 1,2,8

Damage > $1000 Yes

Owner: Veh # 1

Department of Police

1 William Welsh Way
Framingham MA 01702

DOB:
Sex:
Lic Num:
Lic State:
Restrictions:
CDL END:

Medical Examiner:
Body Removed To:
Citation/Charge(s)

Seat Position:
Safety System:
Airbag Status:
Airbag Switch:
Eject Code:
Trap Code:
Injury Status:
Transported:
MedicalFac.
ME Notified and Came To:
Next of Kin Notified By:

Driver: Veh # 1

Framingham Police Department
Krishtal , Val

1 William Welsh Way
Framingham MA 01702

DOB:
Sex:
Lic Num:
Lic State:
Restrictions:
CDL END:

Medical Examiner:
Body Removed To:
Citation/Charge(s)

Seat Position: 1 - Front seat - left seat (or
Safety System: 0 - None used
Airbag Status: 1 - Deployed - Front
Airbag Switch: 3 - ON-OFF switch not present
Eject Code: 0 - Not ejected
Trap Code: 0 - Not trapped
Injury Status: 4 - Possible (non-fatal)
Transported: 2 - EMS
MedicalFac. Metrowest
ME Notified and Came To:
Next of Kin Notified By:

Status: Approved
Approved by: #Lieutenant Andrew [illegible]

Officer Name	Signature	ID#	Station	Date
Sergeant Marsh, Stephen		2220	Collision Analysis and	02/29/2012

Commonwealth of Massachusetts

Collision Analysis and Reconstruction Section

2011-CAR-000491

Collision Reconstruction Report

Narrative

By Sergeant Stephen C Marsh 2220

It should be noted that the following synopsis is a brief outline or general view of the facts surrounding this incident.

1. On 11/22/2011 at 2126 hours Framingham police officer Val Krishtal was operating a fully marked 2010 Ford crown victoria cruiser north on Edgell Road in Framingham. He was responding to a call for service.

2. In the area of 122 Edgell Road Krishtal lost control of the Ford causing it to crash into a granite wall.

3. Krishtal received minor injuries. He was transported by ambulance to Metrowest hospital and subsequently released.

4. On 11/25/2011 this officer responded to the scene and documented evidence. This officer also conducted a vehicle inspection and analysis of the Ford's ACM and PCM EDR.

5. Based on this officer's investigation and subsequent reconstruction of this crash, it is this officers opinion that this was a one vehicle crash and that Krishtal operated the cruiser at speeds in excess of twice the roadway speed limit. It is also this officers opinion that the failure of Krishtal's to maintain safe operation of the Ford is the cause of this crash.

6. Report follows

Sergeant Stephen C Marsh #2220

Sergeant Stephen C Marsh #2220

Status: Approved
Approved by: #Lieutenant Andrew Klare ID# 1911

Officer Name	Signature	ID#	Station	Date
Sergeant Marsh, Stephen		2220	Collision Analysis and	02/29/2012

Collision Analysis and Reconstruction Section

2011-CAR-0491
122 Edgell Road, Framingham
November 22, 2011 ~ 2126 hours

Introduction

1. On 11-22-2011 at ~ 2126 hours a single vehicle crash occurred in the area of 122 Edgell Road in Framingham. Officer Val Krishtal, a Town of Framingham police officer who was on duty at the time of the crash, was operating a 2010 fully marked Ford Crown Victoria cruiser north on Edgell Road.

2. In the area of 122 Edgell Road, Krishtal lost control of the Ford. Thereafter the Ford began to rotate counterclockwise where it then exited the northbound lane, crossed the southbound lane, and exited the west road edge subsequently striking a granite wall. The Ford then came to an uncontrolled final rest in the driveway to 122 Edgell Road.

3. Krishtal received minor injuries in the crash, was transported to Metrowest Hospital by ambulance, and treated and released. The Ford was removed from the scene and towed to the Framingham PD garage. The crash scene was then cleared. Sergeant Lester Baker of Framingham PD was assigned as the investigating officer.

4. On 11-23-2011 at ~ 1100 I was contacted by Lieutenant Klane, CARS, to reconstruct this crash. The scope of this officer's investigation is limited to the reconstruction of this collision.

Vehicle Investigation

5. On 11-25-2011 at ~ 1000 this officer met with Trooper O'Hara of the CARS at the Framingham Police Station. Inside the garage Trooper O'Hara and I observed the damaged cruiser which was identified as a 2010 Ford bearing MA Police registration 941. A vehicle inspection was completed which included photographs, notes of the vehicle condition, and a successful image of the Fords PCM and ACM via the vehicle OBD port. Sergeant Baker and Lieutenant Cronin of the Framingham PD were also present.

6. To summarize the inspection of the Ford, this officer observed exterior contact damage to the aftermarket front push bumper, factory front bumper, hood, left front fender, and headlights. Additional damage was noted to the driver door outside mirror and left rear rim.

7. This officer observed exterior induced damage to the aftermarket and factory front bumpers, grill, hood, both front fenders, driver door, and engine compartment. There were concrete chunks and rock fragments inside the engine compartment. This officer noted the master cylinder to be full of fluid and free of contaminants.

Sergeant Stephen C Marsh #2220

8. Inspection of the Ford' tires indicates that the vehicle was fitted with Goodyear Eagle RSA P 235 55 R17. These tires are the appropriate OEM size for the vehicle. The left front tire had 9/32 of tread and was flat at inspection. The left rear tire had 6/32 of tread and was flat at inspection. The left rear rim was damaged and gouged. The right front tire had 8/32 of tread and was inflated to 42 PSI at inspection. The right rear tire had 5/32 of tread and was inflated to 41 PSI at inspection.

9. This officer made no observations of any suspect damage to the exterior of the vehicle. All the contact and induced damage was correlated to the collision sequence between the Ford and the granite wall.

10. The interior of the Ford was unremarkable with the exception of the deployment of the driver steering wheel airbag. An examination of the driver seatbelt showed no signs of it being worn at impact.

Roadway

11. Trooper O'Hara and I then responded to the scene of the crash. We were accompanied by Sergeant Baker and Lieutenant Cronin.

12. The road was dry at the time of this officer's investigation. I was advised by Sergeant Baker that the roadway was dry upon his arrival at the crash scene. A light mist began to fall shortly thereafter followed by heavy rain.

13. Edgell Road in the area of the crash is approximately 57 feet wide and supports a northbound and southbound travel lane. The travel lanes are bound by white painted "fog" lines and are separated from each other by a yellow painted "double solid" center line. The northbound travel lane is ~ 13.8 feet wide and the southbound travel lane is ~12.4 feet wide.

14. To the right (east) of the northbound lane is an ~ 30 foot paved shoulder. This shoulder varies in width and begins well south of the crash scene (at ~ Auburn Street) and continues well north of the crash scene (beyond Warren Place). "The Plymouth Church" is in this area and the extended shoulder is occasionally used for parking purposes.

15. To the right (west) of the southbound lane is granite curbing and sidewalk. The aforementioned wall is separated by the entrance to the southernmost semi circular driveway to the property at 122 Edgell Road. The wall is located ~ 15 off the edge of the road.

16. Utility pole mounted street lights are present at the crash scene with the nearest light being within the collision scene. This officer is unaware if the street light (s) were actually working and incandescent at the time of the crash. This officer is unaware of any other forms of ambient lighting at the time of the crash.

17. The speed limit within the collision locus is 30 miles per hour. Vehicle's on northbound approach are presented with a long and relatively level straightway which begins at Auburn Street. Edgell Road, upon passing Vernon Street, presents with a moderate right bearing curve and a slight rise whereupon the roadway then levels and straightens until passing the collision locus.

Scene Investigation

18. The crash scene had been cleared more than thirty six hours prior to my arrival. The evidence observed when this officer arrived on the scene was photographed and documented. The collision location was then electronically surveyed employing infrared technology via a Topcon transit and Topcon data acquisition system. This system employs the use of polar coordinates to accurately measure the collision locus to a tolerance of 3 millimeters. This data was downloaded electronically to Vista FX3, a computer aided design program. Using Vista FX3, a forensic map of the collision locus was created. Trooper O'Hara operated the Topcon data collector and this officer identified the physical evidence at the scene.

19. This officer's investigation focused on two tire marks which were observed in the northbound travel lane beginning approximately three feet west of the fog line. These tire marks were curved in nature and continued in the northbound lane, across the center line, and across the southbound lane and fog line. These marks ended at the granite curb. The distance that the Ford traveled as it was making these tires marks is ~ 90 feet.

20. This officer is confident that the tire marks represent yaw marks made by the Ford as it was sliding sideways across the roadway. These tire marks indicate that Krishtal input hard left steering to the Ford and, that the tires of the Ford had lost the necessary roadway friction to maintain stability. An examination of the data imaged in the Ford's PCM indicates the operator was applying braking as the Ford was experiencing this counter-clockwise yaw. Therefore, this officer cannot perform speed analysis of the Ford as it made these marks.

21. Directly in line with the Ford's direction of travel this officer observed two areas of disturbed granite blocks. These granite blocks had previously, before being struck by the Ford, formed the entrance of the driveway and corresponding ends of the granite wall (s) that bounded the front property of 122 Edgell Road.

22. The southern-most wall end had been impacted by the left front of the Ford and the northern-most wall end had been impacted by the right front of the Ford. The granite blocks that had been displaced by impact with the Ford during the crash were large; some which I estimated at over one hundred pounds. I was advised by Sergeant Baker that some of these displaced blocks had been moved by heavy equipment in order to provide driveway access to the homeowner.

23. There was a scant amount of vehicle debris, mostly small pieces of plastic and paint chips, present at the scene which was related to the Ford.

24. This officer made no other observations of roadway evidence pertaining to the collision sequence.

ACM and PCM Data

25. The Ford is equipped with a Supplemental Restraint System (SRS) which includes an Airbag Control Module (ACM). The ACM includes an Event Data Recorder (EDR). The Ford is also equipped with a Power-train Control Module (PCM). The PCM also includes an Event Data Recorder (EDR).

Module(s) Access:

26. On 11/25/2011 at approximately 1040 HRS, with the assistance of Trooper O'Hara, I conducted an EDR investigation on the Ford's ACM and PCM at the Framingham Police Department garage. There was power to the vehicle. The ACM and PCM were accessed via a DLC connection utilizing the Ford's OBD port. See attached Crash Data Retrieval [CDR] reports.

Ford ACM EDR Data

Data Overview:

27. The Ford's ACM EDR does not record pre-impact data, such as speed and braking etc. The ACM EDR data was successfully downloaded with no fault or invalidity codes. The CDR report file information indicates that there was a frontal deployment event recorded and a side deployment event recorded. (See attached ACM CDR Report.)

System Status at Time of Data Retrieval:

28. The system status at retrieval data indicates that there was one deployment event recorded. The longitudinal velocity change is reported to be -16.2 MPH. The algorithm run time was reported to be 452 milliseconds. There were no restraint system faults present at the time of the recorded deployments.

System Status at Frontal Deployment:

29. At deployment the ignition key had been on for 988 seconds (16.46 minutes). The driver's belt switch circuit status was reported as "unbuckled". The passenger's belt switch circuit status was reported as "unbuckled". The passenger's occupant classification status was reported as "empty". The driver's seat was in the rearward position. The deployment was a two stage deployment event. The driver's first stage deployment time was reported to be 28.8 milliseconds. The drivers second stage deployment time was 54.4 milliseconds. Both the driver's and right front

seat passenger seatbelt pre-tensioner deployment times were reported as "N/A" (not deployed). The frontal event recording was complete and the frontal event record was locked.

System Status at Side Trigger Event:

30. At the side trigger event the ignition key had been on for 988 seconds (16.46 minutes). The driver's belt switch circuit status was reported as "unbuckled". The passenger's belt switch circuit status was reported as "unbuckled". The passenger's occupant classification status was reported as "empty". The driver's seat was in the rearward position. The side event record was not locked and the side event recording was complete.

Longitudinal Crash Pulse Graph and Table:

31. The maximum recorded longitudinal cumulative change in velocity (Delta-V) in the crash pulse data table and graph is reported to be -10.06 MPH at 80 milliseconds after algorithm enable (AE).

Analysis of ACM EDR Data:

32. The Fords SRS system was functioning as designed at the time of this collision. The vehicle had been on for 16.46 minutes. The driver's and the right front seat passenger's seatbelt pre-tensioners did not fire. The driver's seatbelt was unbuckled. The right front passenger's seat was unoccupied. The driver's frontal airbag was commanded to deploy. The right front passenger frontal airbag was not commanded to deploy. A side airbag deployment was not commanded.

33. As seen on Page -4- of the Ford's ACM EDR report, the maximum change in longitudinal velocity (Delta-V) is reported to be -16.2 MPH. The associated time parameter is the algorithm run time which is 452 milliseconds. As seen on Page -5- and Page-9- of the ACM EDR report, the maximum change in longitudinal velocity (Delta-V) is reported to be -10.6 MPH. The associated time parameter is 80 milliseconds. The difference in the reported Delta-V's [-16.2 vs. -10.6] is a function of the buffer space available for the module to write data to the Crash Pulse Graph and Table.

Ford PCM EDR Data

Access

34. The PCM EDR data was successfully downloaded via a DLC connection with no fault or invalidity codes received. The data indicates that there was a Restraint Deployment Signal (RDS) received by the PCM from the Supplemental Restraint System (SRS). Analysis of the recovered data and the circumstances of this collision indicate that the recorded data is related to this collision. This PCM recorded a maximum of 25.2 seconds of data, 20.2 seconds prior to the RDS being received and 5.0 seconds after the RDS was received.

PCM EDR Data Overview

35. The PCM EDR data indicates that the RDS was received at buffer address #EA000710, relative time 0.2 in the PCM EDR report. The key on timer indicates that at RDS, the Ford's ignition was on for a minimum time of 63.75 seconds (1.06 minutes). The key on timer was reported as 63.75 seconds throughout the entire recording, which indicates that the reported data is complete and had not been overwritten. The transmission is reported as "Not Neutral" during the entire recorded collision sequence. This is the only reported parameter that remains unchanged in the PCM EDR Data (1). For the entire time period reported in the PCM EDR Data (2), the Speed Control was reported as "off", the Traction Control was reported as "Not Active" and the Stability Control was reported as "Not Active".

36. Buffer address EA0000B: At 19.2 seconds prior to impact (20.4 seconds prior to RDS), the Ford's speed is reported as 43 MPH, the accelerator pedal is 43 percent, the engine throttle is 52.5 percent, the brake switch is "off", the ABS is not active.

37. Buffer address EA000490: At 6.8 seconds prior to impact, the Ford's speed is 76 MPH, the maximum speed reported in the report. The accelerator pedal is 50 percent, the engine throttle is 99 percent, the brake switch is "off", and the ABS is "not active".

38. Buffer address EA000560: At 4.2 seconds prior to impact the Ford's speed is 73 MPH, the accelerator pedal is 0 percent, the engine throttle is 6.5 percent, and the ABS is "not active". The brake circuit switch is now "on".

39. Buffer address EA000610: At 2.0 seconds prior to impact the Ford's speed is 57 MPH, the accelerator pedal is 0 percent, the engine throttle is 7 percent, and the brake circuit switch continues to be "on". The ABS is now reported to be "active".

40. Buffer address EA0006B0: At impact, 1.2 seconds before the RDS is received, the Ford's speed is 32 MPH. The accelerator pedal is 0 percent. The throttle is 5 percent. The brake switch is "on". The ABS is "active".

41. Buffer address EA000720: At 1.4 seconds after impact, the Ford's speed is 0 MPH, the accelerator pedal is 0 percent, the engine throttle is 6 percent, the brake switch is "off", and the ABS is now "not active".

Analysis of PCM EDR Data

42. Examining the Ford's PCM data indicates that the impact between the Ford and the granite wall occurred at buffer address #EA0006B0, 1.2 seconds prior to the RDS being received.

43. The data indicates that the speed of the Ford at impact with the granite wall is 32 MPH. the Ford's accelerator pedal is 0 percent, the brake switch is "on" and the ABS system is "active".

44. The data indicates braking prior to impact with the granite wall. The brake switch changed from "off" to "on" 4.2 seconds prior to impact. The speed of the Ford when the brake switch parameter changed from "off" to "on" was 73 MPH. The Ford's speed decreased from 73 MPH to 32 MPH at impact, a reduction of 41 MPH over 4.2 seconds.

Conclusions

45. As Officer Krishtal exited the right bearing curve in the area of the "The Plymouth Church", he lost control of the Ford causing it to enter a counterclockwise yaw. The Ford continued in this attitude for ~ 90 feet until it exited the southbound lane, struck and overrode the granite curbing, and then impacted the granite wall. Post impact with the wall, the Ford achieved final rest fronting northwest. Final rest was ~ 18 feet from the west edge of the southbound lane.

46. Within the Ford's PCM EDR, its pre-impact speed was reported every 0.2 seconds of time over a period of 19.2 seconds prior to impact. Analysis of the Ford's PCM EDR data revealed that Officer Krishtal was operating the Ford northbound on Edgell Road at speeds ranging from 43 MPH to 76 MPH.

47. Analysis of the Ford's PCM EDR data reveals that the Ford impacted the granite wall at 32 MPH.

48. Analysis of the Ford's ACM EDR data reveals that the Ford sustained a -16.2 MPH Delta V during the reported 452 milliseconds of algorithm run time.

49. Analysis of the Ford's ACM EDR data and a visual inspection of the Ford's driver seatbelt and "D" ring indicate that Krishtal's seatbelt was unbuckled during the crash.

50. This officer observed no mechanical factors that contributed to or caused this crash.

51. This officer observed no environmental factors that contributed to or caused this crash. It should be noted that this officer's on-scene investigation occurred over thirty six hours after the crash occurred and the scene had been cleared.

52. This officer made no observations to the exterior of the Ford, or at the scene of the crash (roadway surface evidence or suspect vehicle debris) which would suggest that another vehicle contributed to or caused this crash.

Opinions

53. It is this officer's opinion that this crash was caused by the failure of Officer Krishtal to maintain control of the Ford.

54. It is this officer's opinion that the speed in which Officer Krishtal was operating the cruiser seconds before impact may have contributed to his loss of control of the cruiser.

55. It is this officer's opinion that the failure of Officer Krishtal to wear his seatbelt may have contributed to the injuries he sustained during this crash.

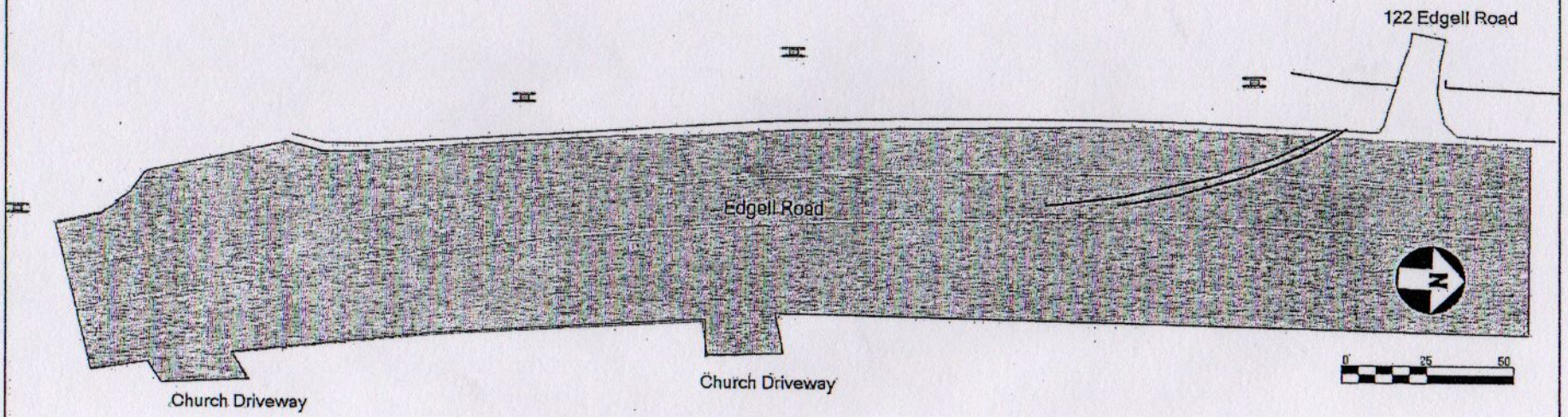
56. It is this officer's opinion, drawn from conversation with the Sgt Baker and Lieutenant Cronin, that the maintenance record of the Ford revealed it had been serviced regularly and was in proper working order before this crash occurred.

Respectfully
Sgt SC Marsh #2220
CARS

MASSACHUSETTS STATE POLICE

COLLISION ANALYSIS & RECONSTRUCTION SECTION

Case Number:	2011-CAR-0491
Date of Incident:	11/22/2011
Incident Locus:	122 Edgell Road
Drawn By:	Sgt SC Marsh



Massachusetts State Police

Collision Reconstruction Report

CASE #	2011-CAR-000491
Related Case#	

Requesting Agency:		Framingham			
Date Rec'd:	23 Nov 2011	Time Rec'd:	1000	Class:	Traffic, Crash - MV PI
Primary Investigating Officer:		Sgt Lester Baker		Agency	Framingham
Reconstructionist Assigned:		Sergeant Stephen C Marsh, #2220		Team	Southeast
Collision Occurred:	City/Town	County	Day	Date	Time
	FRAMINGHAM	MIDDLESEX	Tueday	22 Nov 2011	21:26

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Massachusetts State Police
Collision Analysis and Reconstruction Section
485 Maple Street
Danvers, MA 01923
cars.reports@state.ma.us

Status: Approved
Approved by: #Lieutenant Andrew Ware ID# 1301

BOSCH

CDR CRASH DATA RETRIEVAL SYSTEM

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	2FABP7BV8AX136276
User	SGT. SC MARSH #2220, MSP-CARS
Case Number	2011-CAR-
EDR Data Imaging Date	11/25/2011
Crash Date	11/22/2011
Filename	2011-CAR-0491 FRAMINGHAM 2FABP7BV8AX136276 ACM.CDRX
Saved on	Friday, November 25 2011 at 10:49:32
Collected with CDR version	Crash Data Retrieval Tool 4.2
Reported with CDR version	Crash Data Retrieval Tool 4.3
EDR Device Type	Airbag Control Module
Event(s) recovered	Frontal Deployment Side trigger event

Comments

11/25/2011, 1035 HRS
FPD GARAGE.
2010 FORD CRO VIC PI, MA OFFICIAL POLICE REG# MP-941.
1 VEHICLE PI C-16 EDGELL ROAD, FRAMINGHAM.
CONTACT DAMAGE TO FRONT END AND LEFT FRONT CORNER.
P235/55R17 TIRES OEM TIRES.
NO MODIFICATIONS OBSERVED.
NO RECALL STICKERS OBSERVED.
POWER.
ATTEMPT THRU DLC.

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 Friday, November 25 2011 at 10:49:32.

Limitations that are important for users of the Bosch Crash Data Retrieval (CDR) tool on this Ford product to know

Disclaimer: Ford Motor Company Restraint Control Modules (RCM's) were designed to record deceleration data for the purpose of understanding the approximate input data the Restraint Control Module used to determine whether or not to deploy restraint devices. Ford Motor Company RCM's were not designed for the purpose of assisting accident reconstructionists. Ford RCM modules do not record vehicle speed, throttle position, brake on-off, and other data desired by accident reconstructionists, which may be recorded in some 1999 model year and later General Motors modules. There is a second module in the vehicle, the Powertrain Control Module (PCM) which may record vehicle speed, brake, and throttle information. Proper precautions must be taken when reading the RCM not to spoliate the data in the PCM. Those precautions are discussed later in this document.

The time series deceleration data recorded by Ford's module during a crash is mathematically integrated into a partial Delta V by the Bosch tool. Delta_V is the change in velocity during the recording time and is NOT the speed the vehicle was traveling before the accident.

Accident reconstructionists must be aware of the limitations of the data recorded in Ford's control modules and should compare the recorded data with the physical evidence at the accident scene using professional accident reconstruction techniques (i.e. vehicle crush characteristics, momentum analysis. etc.) before making any assumptions about the import and validity of the data recorded in the module with respect to the crash event being analyzed. The following describes specific limitations that must be considered when analyzing recorded data.

1. There may be no deceleration data recorded in the module.
Loss of power (cut wires, damaged battery, crushed fuse box) to the module during or immediately after the crash may prevent the crash data from being written to NVM (non-volatile memory). A backup power supply within the module has sufficient power to continue to analyze the deceleration data and deploy restraint devices if needed, but there is limited backup power for recording.

2. If there are no deployment times recorded, but airbags or other restraint devices are observed to have deployed, the recorded data that you read after that event are most likely from a prior event. This module family does utilize backup power left over after any deployment to attempt to record information from the crash, and is much more likely to get a recording than prior modules, but it is still theoretically possible that there may not be any recording from a new event in which power is lost.

3. The recorded Longitudinal Delta V may understate or overstate the total Delta_V under certain circumstances.

3.1. This module has two different displays with Delta V information. The cumulative longitudinal Delta V shown in the system status section of the report reflects the change in forward velocity that the sensing system experienced from the point of algorithm entry to algorithm exit. The cumulative longitudinal Delta V may understate the Delta V slightly because the algorithm does not begin until the deceleration reaches a pre-specified level of approximately 2 G's, so the first one or two milliseconds of actual Delta V may not be included in the total.

3.2. If the acceleration levels measured exceed the sensor range of +/- 40G's, the data may be clipped and the area under the curve beyond +/-40G's will not be integrated in to the cumulative Delta V.

3.3. In addition to the cumulative Delta V, this module records and displays a time series up to 192 data points of longitudinal vehicle acceleration at 0.8 millisecond intervals from which a partial Delta V is calculated and displayed. The 192 data points consist of 64 data points post deployment, 1 at deployment, and 127 prior to deployment. Depending upon the time from algorithm wake up to deployment, the duration of the data in the graph may not be sufficient to reach the maximum or final Delta V of the collision.

3.4. The cumulative longitudinal Delta V is more likely than the graph to represent the Delta V of the complete crash because it will typically be over a longer duration. One purpose of looking at the graph is to determine if the G level exceeded the sensor range of +/- 40G's which would lead to under or over reporting Delta V.

3.5. The cumulative longitudinal Delta V is not the total resultant Delta V in anything other than a pure frontal collision. If the collision is angular, you must determine the Principal Direction of Force and divide by the cosine of the PDOF angle from frontal to get the total resultant Delta V.

3.6. The "Cumulative Delta V during the algorithm run time accurately reports observed delta-V for the period the RCM's decision making algorithm runs which may, in some cases, be longer than the actual crash pulse for a given event. For that reason, the reported Delta V may be different than a reconstruction based calculated Delta V for a given event. For example, during heavy slowing, such as braking or wheels locked from damage after the initial contact phase in a crash, the vehicle is capable of slowing as much as 2 mph per 100 milliseconds. If the algorithm runs for another 100 milliseconds beyond the end of the normally observed crash pulse, the data recorded may reflect an over reported event Delta V inasmuch as it includes the 2 mph from post contact braking observed while the system was still active. Similarly, after contact a vehicle may continue through the contact area to rest and may experience some level of positive X axis acceleration during that period. Even over a short period, some of that positive X axis acceleration may be observed by the RCM while the algorithm is still running and that may cause an under reporting of the delta-V relative to what may be calculated by a reconstructionist. Users should compare the reported algorithm run time to a normal crash duration of approximately 100-150 ms. If the algorithm run time is significantly longer than the reconstruction estimated crash duration, you may want to consider accounting for after contact acceleration - whether X positive or negative - where appropriate. End users using the crash pulse graph to estimate the event Delta V, should not include any speed loss accumulated as a function of braking prior to algorithm wake up in the event Delta V."

4. Event Recording Complete will indicate if data from the recorded event has been fully written to the RCM memory or if it has been interrupted and not fully written. Even if the event Recording Complete is "no", the data may still be valid. In general, fields with nonzero data written in them have been written successfully. The exception is passenger airbag occupant classification, which when unwritten displays "empty".

5. The module is not intended to record longitudinal acceleration/deceleration in a side-impact event. If the side impact generates a longitudinal deceleration component sufficient to wake up the frontal deployment algorithm, there may be a recording of longitudinal deceleration.

6. If there is any question that the restraint system did not perform as it was designed to perform, please read the system only through the diagnostic link connector. The Bosch CDR kit provides a connector to plug directly into the restraint control module. The Bosch CDR RCM Interface Cable connects only power, ground, and memory readout pins to the relevant vehicle restraint control module. The other pins normally connected to inputs, like sensors, and outputs, such as airbags, are not connected to anything when you use the RCM Interface Cable connector to plug directly into the module. Since the vehicle restraint control module is constantly monitoring airbag system readiness, it will detect that the connection to the input sensors and output airbags has been lost. The restraint control module will write a new diagnostic trouble code into memory for each device that is not connected. These new diagnostic trouble codes could potentially overwrite previously written diagnostic trouble codes present prior to the accident and spoil evidence necessary to determine if the restraint system performed in the accident as it was designed to perform. Not only could this prevent Ford from being able to determine if the system performed as it was designed to perform, but, regardless of innocent inadvertence, you could be charged with evidence spoliation in any litigation that may arise out of the accident. If you cannot read the module out through the diagnostic link connector, and if you suspect improper system performance, contact Ford Motor Company and request their assistance to read the module out with a proper vehicle simulator attached. If you choose to read out through the module small connector, Ford recommends that you do so in the vehicle and that you leave the second large connector plugged into the vehicle wiring harness to minimize the number of new diagnostic trouble codes created.

POWERTRAIN CONTROL MODULE DATA SPOLIATION CAUTIONS:

When reading the RCM users must use caution to not spoil data in the PCM. This Restraint Control Module does not record vehicle speed, braking, or throttle inputs prior to or during a collision event. There is a Powertrain Control Module (PCM) in this vehicle which records vehicle speed, brake, throttle angle and other parameters in a Data Recording Device (DRD), an EEPROM chip, whenever the key is in the run position. The PCM is intended to lock the recording if an airbag or safety belt pretensioner has deployed, and the vehicle data bus stays up long enough for the deploy signal from the RCM to reach the PCM. If the deploy signal has not reached the PCM and

the PCM is powered, the DRD data can be overwritten by new data. If there is any doubt as to the PCM deployment lock status, the user must proceed with the understanding that the data may not be locked and could be overwritten if key power is turned on. It is recommended that the PCM not be key powered until it the EEPROM memory can be properly read out by a special procedure that prevents data from being overwritten. To read PCM data, follow the instructions in the CDR help file to determine which cable and adapter to use and how to connect to Ford PCMs for the purpose of downloading DRD data. The Bosch PCM readout cables and adapter are not included in the CDR kit and can be purchased directly from Bosch or through an authorized CDR tool distributor.

The PCM also has a diagnostic trouble code history kept in Keep Alive Memory (KAM). KAM is a form of RAM memory powered directly from the battery and is preserved as long as there is battery power to the PCM (the ignition key does not have to be on). If all power is removed from the PCM or the PCM exits flash mode after reading the Data Recording Device, KAM is cleared. The reader must make a judgment as to which data, DRD or KAM, is more likely to provide useful data for the situation at hand.

It has been Ford's experience that the DRD data is more useful than the KAM data when:

1. The airbag has deployed and it is likely that the DRD is locked and has data
2. Power was lost in the crash and KAM is already cleared due to power loss
3. Power has been depleted subsequent to the crash and KAM is already lost.
4. Crash damage makes it likely there are multiple codes in KAM due to accident damage which were not likely to be present before the crash, where it is difficult to isolate codes present before the crash that may have contributed to the cause of the crash.

The KAM data may be more valuable when there has been no airbag deployment and it is likely the key has been left on after the event such that no useful data is likely to remain in the DRD.

If there is insufficient information to make a judgment per the above, Ford's experience is that the DRD data is more likely to have significance, and that it is better to prioritize reading the DRD data first. To preserve the DRD data, unplug the PCM connectors while the RCM is being read.

AIRBAG MODULE DATA SOURCES:

All RCM recorded data is measured, calculated, and stored internally, sensors external to the RCM include the following:

1. The Driver and Passenger Belt Switch Circuits are wired directly to the RCM.
2. The Driver's Seat Track Position Switch Circuit is wired directly to the RCM.
3. The Side Impact Sensors (if equipped) are located at the base of the B-pillars and are wired directly to the RCM.
4. The Occupant Classification Sensor is located in the front passenger seat and transmits data directly to the RCM on a dedicated high-speed CAN bus.
5. Front Impact Sensors (right and left) are located on top of radiator support bracket.

02004_RCM-Takata2_r001

System Status at Time of Data Retrieval

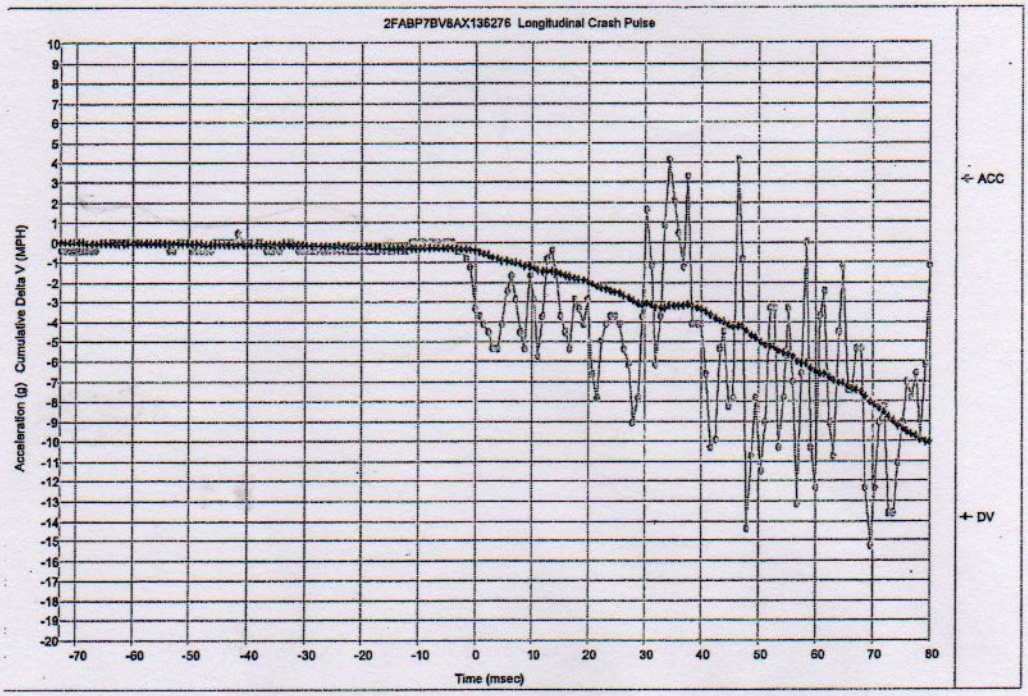
Vehicle Identification Number	2FABP7BV8AX136276
Module Serial Number	10022271
Restraints Control Module Part Number	9W73-14B321-AA
Restraints Control Module Software Version Number	0
Restraints Control Module Software Date	September 7, 2005
Longitudinal velocity change during algorithm run time (MPH)	-16.2
Algorithm run time (msec)	452
Deployment Counter	1
Restraints System Faults Present at time of deployment.	No

System Status At Frontal Deployment

Ignition Cycle Key On Timer at Start of Frontal Event (sec)	988
Driver's Belt Switch Circuit Status	Unbuckled
Passenger's Belt Switch Circuit Status	Unbuckled
Driver seat forward of switch point	Rearward
Passenger occupant classification status	Empty
Driver First Stage Deployment Time (msec)	28.8
Driver Second Stage Deployment Time (msec)	54.4
Passenger First Stage Deployment Time (msec)	N/A
Passenger Second Stage Deployment Time (msec)	N/A
Driver Pretensioner Time Deployment Time (msec)	N/A
Passenger Pretensioner Deployment Time (msec)	N/A
Driver Column Device Deployment Time (msec)	N/A
Frontal Event Record Locked	Yes
Frontal Event Recording Complete	Yes

System Status At Side Trigger Event

Ignition Cycle Key On Timer at Start of Side Event (sec)	988
Driver's Belt Switch Circuit Status	Unbuckled
Passenger's Belt Switch Circuit Status	Unbuckled
Driver seat forward of switch point	Rearward
Passenger occupant classification status	Empty
Side Event Record Locked	No
Side Event Recording Complete	Yes


2FABP7BV8AX135276 Longitudinal Crash Pulse
Acceleration (g) Cumulative Delta V (MPH)
Time (msec)
ACC
DV

Crash Pulse Data

Milliseconds	Long. Acceleration (Gs)	Long. Cumulative Delta V (MPH)
-72.8	-0.41	-0.01
-72.0	-0.41	-0.01
-71.2	-0.41	-0.02
-70.4	-0.41	-0.03
-69.6	-0.41	-0.04
-68.8	-0.41	-0.04
-68.0	-0.41	-0.05
-67.2	-0.41	-0.06
-66.4	-0.41	-0.07
-65.6	0.00	-0.07
-64.8	0.00	-0.07
-64.0	0.00	-0.07
-63.2	0.00	-0.07
-62.4	0.00	-0.07
-61.6	0.00	-0.07
-60.8	0.00	-0.07
-60.0	0.00	-0.07
-59.2	0.00	-0.07
-58.4	0.00	-0.07
-57.6	0.00	-0.07
-56.8	0.00	-0.07
-56.0	0.00	-0.07
-55.2	0.00	-0.07
-54.4	0.00	-0.07
-53.6	-0.41	-0.07
-52.8	-0.41	-0.08
-52.0	0.00	-0.08
-51.2	0.00	-0.08
-50.4	0.00	-0.08
-49.6	-0.41	-0.09
-48.8	-0.41	-0.09
-48.0	-0.41	-0.10
-47.2	-0.41	-0.11
-46.4	-0.41	-0.12
-45.6	0.00	-0.12
-44.8	0.00	-0.12
-44.0	0.00	-0.12
-43.2	0.00	-0.12
-42.4	0.00	-0.12
-41.6	0.41	-0.11
-40.8	0.00	-0.11
-40.0	0.00	-0.11
-39.2	0.00	-0.11
-38.4	0.00	-0.11
-37.6	0.00	-0.11
-36.8	-0.41	-0.12
-36.0	-0.41	-0.12
-35.2	-0.41	-0.13
-34.4	-0.41	-0.14
-33.6	0.00	-0.14
-32.8	0.00	-0.14

Milliseconds	Long. Acceleration (Gs)	Long. Cumulative Delta V (MPH)
-32.0	0.00	-0.14
-31.2	-0.41	-0.14
-30.4	-0.41	-0.15
-29.6	-0.41	-0.16
-28.8	-0.41	-0.17
-28.0	-0.41	-0.17
-27.2	-0.41	-0.18
-26.4	-0.41	-0.19
-25.6	-0.41	-0.20
-24.8	-0.41	-0.20
-24.0	-0.41	-0.21
-23.2	-0.41	-0.22
-22.4	-0.41	-0.22
-21.6	-0.41	-0.23
-20.8	-0.41	-0.24
-20.0	-0.41	-0.25
-19.2	-0.41	-0.25
-18.4	-0.41	-0.26
-17.6	-0.41	-0.27
-16.8	-0.41	-0.27
-16.0	-0.41	-0.28
-15.2	-0.41	-0.29
-14.4	-0.41	-0.30
-13.6	-0.41	-0.30
-12.8	-0.41	-0.31
-12.0	-0.41	-0.32
-11.2	0.00	-0.32
-10.4	0.00	-0.32
-9.6	0.00	-0.32
-8.8	0.00	-0.32
-8.0	0.00	-0.32
-7.2	0.00	-0.32
-6.4	0.00	-0.32
-5.6	0.00	-0.32
-4.8	0.00	-0.32
-4.0	0.00	-0.32
-3.2	-0.41	-0.33
-2.4	-0.41	-0.33
-1.6	-0.82	-0.35
-0.8	-1.24	-0.37
0.0	-3.30	-0.43
0.8	-3.71	-0.49
1.6	-4.12	-0.56
2.4	-4.54	-0.64
3.2	-5.36	-0.74
4.0	-5.36	-0.83
4.8	-4.12	-0.90
5.6	-2.47	-0.95
6.4	-1.65	-0.98
7.2	-2.89	-1.03
8.0	-4.54	-1.11
8.8	-5.36	-1.20
9.6	-1.65	-1.23
10.4	-2.89	-1.28

Milliseconds	Long. Acceleration (Gs)	Long. Cumulative Delta V (MPH)
54.4	-7.83	-5.61
55.2	-3.30	-5.67
56.0	-7.01	-5.79
56.8	-13.20	-6.02
57.6	-6.60	-6.14
58.4	0.00	-6.14
59.2	-10.31	-6.32
60.0	-12.37	-6.53
60.8	-3.71	-6.60
61.6	-2.47	-6.64
62.4	-9.07	-6.80
63.2	-10.72	-6.99
64.0	-4.54	-7.07
64.8	-1.24	-7.09
65.6	-7.42	-7.22
66.4	-7.42	-7.35
67.2	-5.36	-7.45
68.0	-5.36	-7.54
68.8	-12.37	-7.76
69.6	-15.26	-8.03
70.4	-12.37	-8.24
71.2	-9.07	-8.40
72.0	-8.25	-8.55
72.8	-13.61	-8.79
73.6	-13.61	-9.02
74.4	-11.13	-9.22
75.2	-9.07	-9.38
76.0	-7.01	-9.50
76.8	-7.83	-9.64
77.6	-6.60	-9.76
78.4	-9.90	-9.93
79.2	-6.19	-10.04
80.0	-1.24	-10.06

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.

```
0000:  30 30 30 32 46 41 42 50 37 42 56 38 41 58 31 33
0010:  36 32 37 36 00 BB FF 00 00 D9 00 00 F8 29 05 93
0020:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0030:  0E 22 0E 2B 39 56 0A 12 03 CC 30 30 07 0D 26 BC
0040:  BC BC BC 0D 20 20 BC BC BC BC BC BC BC BC BC 00
0050:  00 00 BC BC BC 05 80 39 57 37 33 00 00 B5 1C C4
0060:  09 32 00 BB FF DB FD 7C 01 EF 61 56 1D EF 61 56
0070:  1D 32 34 32 37 37 33 37 2D 41 41 20 20 AD A8 94
0080:  8F 55 50 42 3E 62 41 00 00 00 E8 FF 87 ED 4F FC
0090:  0F C0 02 20 10 08 04 00 00 00 00 00 C0 FF 0F C0
00A0:  00 00 00 0C 00 00 00 00 30 01 88 8B 73 29 19 02
00B0:  30 01 88 8B 73 29 19 02 20 01 88 8B 73 29 19 02
00C0:  20 01 88 8B 73 29 19 02 BC 1E 00 00 00 00 00 00
00D0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00E0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00F0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0100:  00 00 31 30 30 32 32 32 37 31 30 30 39 36 45 36
0110:  38 37 30 30 39 36 45 43 35 37 30 30 41 35 38 45
0120:  34 41 30 30 41 36 32 44 37 35 70 70 65 81 07 62
0130:  00 97 D5 06 11 01 25 00 00 00 80 6B 03 00 00 00
0140:  03 00 03 00 00 00 03 00 06 00 00 00 00 00 01 82
0150:  84 6B 03 00 00 00 03 00 03 00 00 00 03 00 06 00
0160:  00 00 00 00 01 82 4E 00 A9 89 10 01 E2 03 D5 06
0170:  11 01 00 00 00 00 00 00 00 00 0D 00 00 00 00 00
0180:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0190:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01A0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01B0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01C0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01D0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01E0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
01F0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0200:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0210:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
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0270:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0280:  00 00 00 00 00 00 00 00 00 00 00 00 00 40 00 00
0290:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
02A0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 11
02B0:  00 00 00 00 00 00 00 00 00 00 00 00 33 CC 00 01
02C0:  AA F0 3F 03 33 41 42 39 38 39 38 44 20 00 00 00
02D0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
02E0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
02F0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0300:  00 01 0A 02 02 01 00 01 00 02 00 06 00 14 01 00
0310:  00 00 00 05 06 04 01 02 05 05 04 06 23 00 00 00
0320:  CC 01 00 00 00 00 00 00 55 00 00 00 E8 03 00 05
0330:  25 02 08 02 C2 33 C4 00 C0 01 44 00 A0 00 84 03
0340:  86 01 99 02 7F 03 19 00 9A 01 FE FF C3 00 77 01
0350:  08 02 20 03 8F 01 84 03 D0 07 20 03 FE FF E8 03
0360:  F4 01 85 00 64 00 14 00 BD 00 BD 00 00 00 07 07
0370:  08 00 00 04 03 03 00 00 A5 00 79 00 00 07 00 05
0380:  DF 00 8F 01 17 02 F9 00 BB 02 B4 00 8F 01 96 00
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0390:  54 01 E8 03 62 0E 26 07 00 00 00 00 00 00 00 00
03A0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03B0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03C0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03D0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03E0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
03F0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0400:  00 01 07 08 02 00 00 00 00 00 00 00 04 04 05 05 05
0410:  05 06 03 05 06 01 01 01 70 01 02 02 6D 00 00 01
0420:  00 01 00 02 00 01 00 01 00 01 00 01 64 00 31 00
0430:  64 00 00 00 64 00 00 00 00 00 31 00 00 00 64 00
0440:  C8 00 FA 00 3F 01 82 00 82 00 C7 00 4A 01 64 00
0450:  A5 00 93 00 93 00 64 00 2C 01 2C 01 5E 01 20 03
0460:  90 01 C8 00 DC 00 9D 03 C3 00 2C 01 0E 01 96 00
0470:  00 00 AF 00 8A 02 90 01 54 01 2C 01 58 02 4F 01
0480:  B0 04 BC 02 58 02 90 01 04 01 2C 01 4B 00 6E 00
0490:  A0 00 90 01 F4 01 72 01 90 01 E0 15 00 00 84 03
04A0:  8A 02 14 05 02 61 00 00 00 00 00 00 00 00 00 00
04B0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
04C0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
04D0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
04E0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
04F0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0500:  00 01 08 01 01 01 05 04 04 07 06 04 05 01 1D 00
0510:  00 01 00 18 00 01 00 00 00 00 00 00 00 00 03 00
0520:  34 03 ED 01 20 03 A4 01 57 01 4A 04 02 02 BC 02
0530:  F4 01 DB 00 F0 00 82 00 F4 01 FA 00 44 00 FA 00
0540:  FA 00 17 C8 03 70 86 00 00 00 00 00 00 00 00 00
0550:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0560:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0570:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0580:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0590:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
05A0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
05B0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
05C0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
05D0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
05E0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
05F0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0600:  DE 02 9A 8B 83 92 92 8D 8D 9E A5 9E 96 94 A1 A1
0610:  9B 96 91 93 90 98 8F 83 81 81 81 81 81 81 81 81
0620:  81 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80
0630:  81 81 80 80 80 81 81 81 81 81 80 80 80 80 80 7F
0640:  80 80 80 80 80 81 81 81 81 80 80 80 81 81 81 81
0650:  81 81 81 81 81 81 81 81 81 81 81 81 81 81 81 81
0660:  81 81 81 81 81 80 80 80 80 80 80 80 80 80 80 81
0670:  81 82 83 88 89 8A 8B 8D 8D 8A 86 84 87 8B 8D 84
0680:  87 8E 89 82 81 84 89 8B 8D 87 88 8A 87 90 93 8C
0690:  8A 89 89 8A 8D 8F 96 93 89 7C 83 8F 89 7E 76 7B
06A0:  7F 83 78 8A 8A 8A 90 99 98 8D 8B 94 93 76 82 A3
06B0:  9A 93 9C 96 88 88 99 93 88 91 A0 90 80 99 9E 89
06C0:  86 96 6C 87 94 A8 B0 93 81 6C 61 5B 5C 62 73 8E
06D0:  99 A9 A2 93 90 84 74 71 73 76 86 8F 90 95 97 88
06E0:  80 7A 7B 7C 7C 81 89 93 9A A7 A3 97 8E 7C 5F 45
06F0:  49 6F 92 A8 B5 CE D3 B6 9E 71 48 3F 42 5D 88 B4
0700:  C7 CF A9 74 5C 3D 2C 29 36 60 99 D8 F2 FB D8 9D
0710:  7E 54 51 55 61 AD FC FC FC C7 56 3B 3D 33 3F 6E
0720:  8A BF DA C5 AC 61 19 20 48 9A BC A9 9A 8A 87 82
0730:  80 85 89 83 80 7C 76 76 76 76 73 70 70 7A 82 7F
0740:  7F 7F 7F 7F 7F 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E
0750:  7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0760:  7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0770:  7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
0780:  7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7E 7E 7E
0790:  7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
07A0:  7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
07B0:  7E 7E 7E 7E 7E 7F 80 81 81 83 83 82 81 81 80 80
```

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07C0:  80 82 83 85 85 83 7D 78 75 72 73 79 7B 80 84 88
07D0:  89 8F 87 82 84 7B 79 86 8A 8E 98 92 87 73 6D 6B
07E0:  6C 73 7A 87 8E 9B A2 9C 9A 95 85 74 6D 61 5C 6A
07F0:  7C A3 B0 B2 AB 8C 60 53 4F 49 5B 80 95 BE D8 BE
0800:  A4 7B 5D 42 3C 39 55 7C 8A A7 B6 A6 98 76 5A 53
0810:  54 5B 77 7D 82 89 91 88 81 7E 74 6D 74 77 7F 8A
0820:  93 94 92 8A 86 81 7D 7D 81 80 85 8C 8B 88 84 7E
0830:  7B 7B 7E 83 88 88 88 86 82 7D 7A 88 95 96 99 95
0840:  7D 72 5F 5D 6A 7B 87 A0 BE B9 AF 9C 83 66 58 4D
0850:  5E 78 89 AB C3 BB A9 7A 4F 39 3B 51 6F 95 A3 B4
0860:  B1 9F 8E 78 6D 7B 83 93 8F 81 7D 73 7A 94 9F 9F
0870:  A0 91 86 76 76 78 7A 86 89 85 84 88 8A 88 84 7D
0880:  77 75 76 79 80 84 84 84 84 7D 76 73 79 82 85 7F
0890:  7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F 7F
08A0:  7F 7F 7F 7F 80 7F 7F 7F 7F 7F 80 80 80 80 80 80
08B0:  80 80 80 80 80 80 80 80 80 80 80 80 7F 80 80 80
08C0:  80 80 80 80 80 80 80 7F 80 80 80 80 80 80 80 7F
08D0:  7F 7F 80 80 80 80 80 80 80 7F 7F 7F 80 80 80 7F
08E0:  7F 7F 7F 7F 7F 7F 7F 7F 80 80 7F 7F 7F 7F 7F 7F
08F0:  7F 7F 80 80 7F 80 7F 7F 7F 7F 7F 7F 80 80 80 80
0900:  80 7F 7F 7F 7F 7F 7E 7F 7F 7F 80 80 81 81 81 80
0910:  80 80 80 80 80 81 82 83 82 80 7E 7C 7C 7E 82 84
0920:  81 7F 7C 74 71 73 7C 80 8D 90 8B 85 85 81 7A 78
0930:  76 75 7B 84 8C 8F 8C 87 7C 79 71 75 75 7B 8A 99
0940:  9F 9F 97 8D 73 6B 65 67 6D 75 8E 9E A2 9B 83 70
0950:  6D 71 83 94 97 97 88 72 62 61 5B 6E 89 92 90 8C
0960:  83 80 82 01 A3 89 10 01 DC 03 09 00 B3 B3 16 00
0970:  1A 00 53 00 00 00 00 00 10 20 02 00 00 B3 B3 1D
0980:  00 48 00 00 00 00 00 00 00 10 20 00 00 00 1A 00
0990:  00 00 1A 00 00 00 1A 00 1A 00 1A 00 24 00 44 00
09A0:  00 00 00 00 00 00 00 00 00 00 D8 00 D8 00 D8 00
09B0:  D8 00 D8 D8 D8 53 00 1A 00 53 00 00 00 1A 00 00
09C0:  00 01 00 01 00 01 01 01 24 00 06 00 65 00 65 00
09D0:  CB 00 00 00 7D 00 7C 00 64 00 7D 00 7C 00 64 00
09E0:  17 16 80 0B 03 7E 7F 87 00 AA 00 00 BE 08 00 00
09F0:  35 02 F5 01 79 D0 00 00 29 1C CA 00 01 00 03 00
0A00:  00 00 00 00 30 00 00 0A 05 00 00 30 00 00 0A 05
0A10:  00 00 30 00 00 0A 05 00 00 30 00 00 0A 05 00 00
0A20:  30 00 00 0A 05 00 00 02 00 03 00 00 00 00 00 00
0A30:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0A40:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0A50:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0A60:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0A70:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0A80:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0A90:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0AA0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0AB0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0AC0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0AD0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0AE0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0AF0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0B00:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0B10:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0B20:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0B30:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0B40:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0B50:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0B60:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0B70:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0B80:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0B90:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0BA0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0BB0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0BC0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0BD0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0BE0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

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0BF0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C00:  D9 A1 7E 81 84 86 89 8B 89 88 86 85 89 8F 91 92
0C10:  94 93 8E 87 83 80 81 82 85 89 8C 8A 83 7B 7C 7E
0C20:  82 83 7F 7C 7A 77 77 78 77 6C 5D 51 4C 52 62 6E
0C30:  6D 67 61 61 68 71 75 6F 64 00 00 00 00 00 00 00
0C40:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C50:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0C60:  00 00 00 00 00 00 00 00 00 00 00 7E 7E 7E 7E 7E
0C70:  7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E
0C80:  7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E 7E
0C90:  7E 7E 7E 7E 7E 7F 7F 80 7F 7F 80 80 80 80 80 80
0CA0:  80 80 80 7F 7F 7E 7E 7E 7E 7D 7D 7E 7D 7D 7D 7E
0CB0:  7E 7E 7E 7E 7D 7C 7B 7D 7E 7E 7E 7F 7D 7C 7C 7C
0CC0:  7C 7D 7D 7E 7D 7D 7E 7E 7E 7E 7D 7E 7E 7E 7D 7D
0CD0:  7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D
0CE0:  7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D
0CF0:  7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D 7D
0D00:  7C 7C 7C 7C 7C 7C 7C 7D 7D 7D 7D 7C 7B 7B 7C
0D10:  7D 7E 7E 7E 7D 7C 7C 7C 7D 7E 7E 7E 7D 7D 7D 7D
0D20:  7E 7E 7E 7E 7E 7E 7E 80 80 7F 7F 7E 7E 7E 7E 7D
0D30:  7D 7D 01 00 A3 89 10 01 DC 03 1B 00 1B 00 37 00
0D40:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 1A 00
0D50:  1A 00 06 00 00 00 B3 B3 00 00 00 00 00 B3 B3 00
0D60:  00 00 00 00 00 00 00 00 00 00 00 00 00 36 00 00
0D70:  7E 7D 00 36 61 60 61 60 7B 87 00 AA 79 D0 00 00
0D80:  29 1C CA 00 01 00 03 00 00 00 00 00 30 00 00 0A
0D90:  05 00 00 30 00 00 0A 05 00 00 30 00 00 0A 05 00
0DA0:  00 30 00 00 0A 05 00 00 30 00 00 0A 05 00 00 02
0DB0:  00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0DC0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0DD0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0DE0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0DF0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E00:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E10:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E20:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E30:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E40:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E50:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E60:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E70:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E80:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0E90:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0EA0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0EB0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0EC0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0ED0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0EE0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0EF0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F00:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F10:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F20:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F30:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F40:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F50:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F60:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F70:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F80:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0F90:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0FA0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0FB0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0FC0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0FD0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0FE0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0FF0:  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 A5
C943   00 06 01 09
E200   09 07 69
```

E217	14	0B	03	21
E219	00	00		
E21A	39	57	37	33
E221	31	30	30	32
E222	32	32	37	31
E300	30	30	30	32
E301	46	41	42	50
E302	37	42	56	38
E303	41	58	31	33
E304	36	32	37	36

Disclaimer of Liability

The users of the CDR product and reviewers of the CDR reports and exported data shall ensure that data and information supplied is applicable to the vehicle, vehicle's system(s) and the vehicle ECU. Robert Bosch LLC and all its directors, officers, employees and members shall not be liable for damages arising out of or related to incorrect, incomplete or misinterpreted software and/or data. Robert Bosch LLC expressly excludes all liability for incidental, consequential, special or punitive damages arising from or related to the CDR data, CDR software or use thereof.

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CDR CRASH DATA RETRIEVAL SYSTEM

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	2FABP7BV8AX136276
User	SGT. SC MARSH #2220, MSP-CARS
Case Number	2011-CAR-
EDR Data Imaging Date	11/25/2011
Crash Date	11/22/2011
Filename	2011-CAR-0491 FRAMINGHAM 2FABP7BV8AX136276 PCM.CDRX
Saved on	Friday, November 25 2011 at 10:48:08
Collected with CDR version	Crash Data Retrieval Tool 4.2
Reported with CDR version	Crash Data Retrieval Tool 4.3
EDR Device Type	Powertrain Control Module
Restraint Deployment Signal Received	Yes

Comments

11/25/2011, 1035 HRS
FPD GARAGE.
2010 FORD CRO VIC PI, MA OFFICIAL POLICE REG# MP-941.
1 VEHICLE PI C-16 EDGELL ROAD, FRAMINGHAM.
CONTACT DAMAGE TO FRONT END AND LEFT FRONT CORNER.
P235/55R17 TIRES OEM TIRES.
NO MODIFICATIONS OBSERVED.
NO RECALL STICKERS OBSERVED.
POWER.
ATTEMPT THRU DLC.

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 Friday, November 25 2011 at 10:48:08.

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

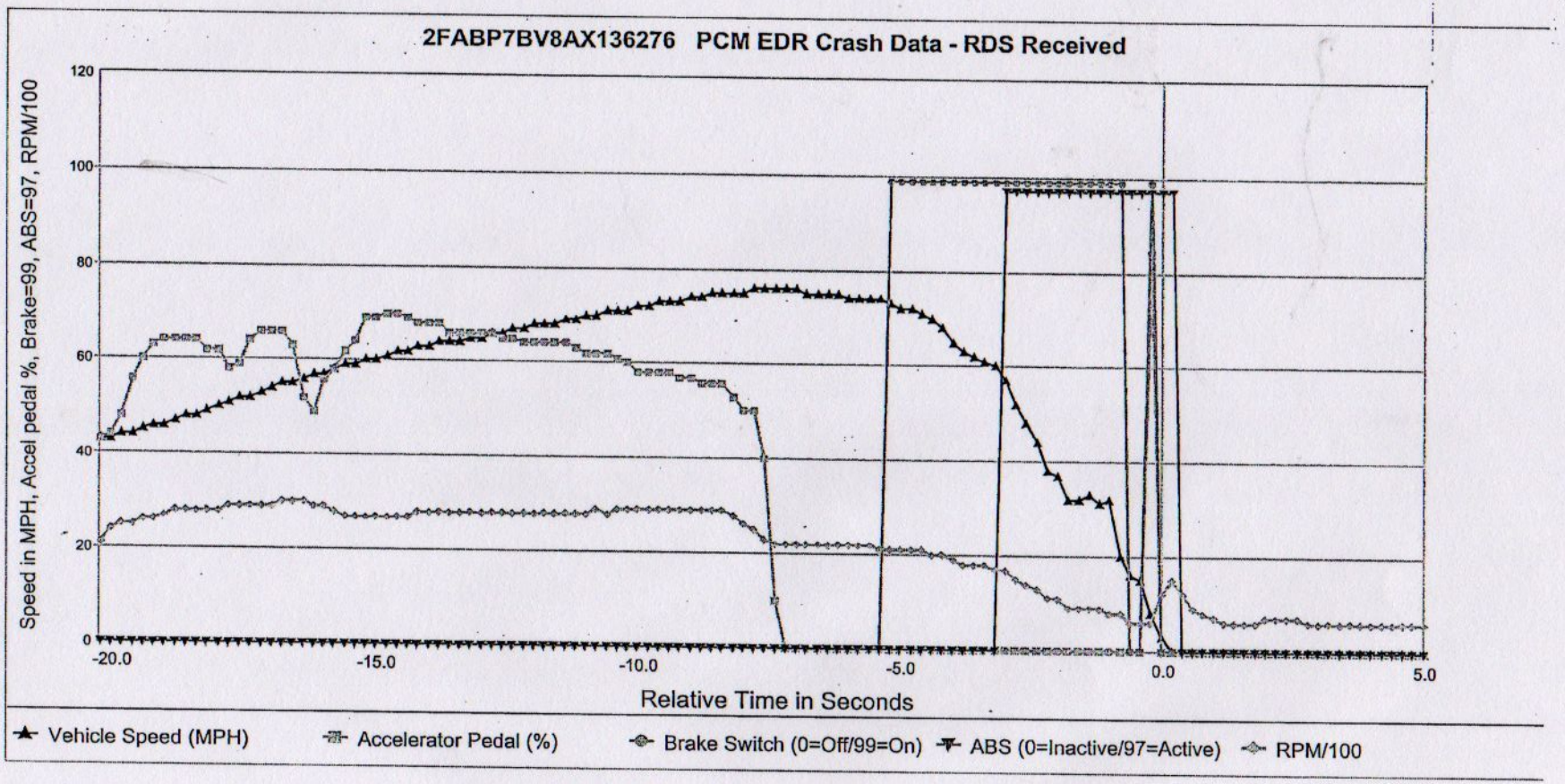
02005_PCM-1-2_r001

PCM Module Information

Vehicle Identification Number (from PCM)	2FABP7BV8AX136276
PCM File Name (calibration level)	FCJC9PZ.HEX*
PCM Part Number	AW7A-12A650-GA

BOSCH

CDR CRASH DATA RETRIEVAL SYSTEM



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)
EA0000B0	-20.2	Not Received	43 [69]	43	52.5	OFF	OFF	Not Active	Not Neutral
EA0000C0	-20.0	Not Received	43 [69]	44.5	99	OFF	OFF	Not Active	Not Neutral
EA0000D0	-19.8	Not Received	44 [71]	48.5	99	OFF	OFF	Not Active	Not Neutral
EA0000E0	-19.6	Not Received	44 [71]	56.5	99	OFF	OFF	Not Active	Not Neutral
EA0000F0	-19.4	Not Received	45 [72]	60	99	OFF	OFF	Not Active	Not Neutral
EA000100	-19.2	Not Received	46 [74]	63	99	OFF	OFF	Not Active	Not Neutral
EA000110	-19.0	Not Received	46 [74]	64	99	OFF	OFF	Not Active	Not Neutral
EA000120	-18.8	Not Received	47 [76]	64	99	OFF	OFF	Not Active	Not Neutral
EA000130	-18.6	Not Received	48 [77]	64	99	OFF	OFF	Not Active	Not Neutral
EA000140	-18.4	Not Received	48 [77]	63.5	99	OFF	OFF	Not Active	Not Neutral
EA000150	-18.2	Not Received	49 [79]	62.5	99	OFF	OFF	Not Active	Not Neutral
EA000160	-18.0	Not Received	50 [80]	61.5	99	OFF	OFF	Not Active	Not Neutral
EA000170	-17.8	Not Received	51 [82]	58.5	99	OFF	OFF	Not Active	Not Neutral
EA000180	-17.6	Not Received	52 [84]	59	99	OFF	OFF	Not Active	Not Neutral
EA000190	-17.4	Not Received	52 [84]	63.5	99	OFF	OFF	Not Active	Not Neutral
EA0001A0	-17.2	Not Received	53 [85]	65.5	99	OFF	OFF	Not Active	Not Neutral
EA0001B0	-17.0	Not Received	54 [87]	66.5	99	OFF	OFF	Not Active	Not Neutral
EA0001C0	-16.8	Not Received	55 [88]	65.5	99	OFF	OFF	Not Active	Not Neutral
EA0001D0	-16.6	Not Received	55 [88]	63	99	OFF	OFF	Not Active	Not Neutral
EA0001E0	-16.4	Not Received	56 [90]	52.5	89	OFF	OFF	Not Active	Not Neutral
EA0001F0	-16.2	Not Received	57 [92]	49	36	OFF	OFF	Not Active	Not Neutral
EA000200	-16.0	Not Received	57 [92]	56.5	57.5	OFF	OFF	Not Active	Not Neutral
EA000210	-15.8	Not Received	58 [93]	57.5	99.5	OFF	OFF	Not Active	Not Neutral
EA000220	-15.6	Not Received	59 [95]	62	99	OFF	OFF	Not Active	Not Neutral
EA000230	-15.4	Not Received	59 [95]	64.5	99	OFF	OFF	Not Active	Not Neutral
EA000240	-15.2	Not Received	60 [97]	69	99	OFF	OFF	Not Active	Not Neutral
EA000250	-15.0	Not Received	60 [97]	69	99	OFF	OFF	Not Active	Not Neutral
EA000260	-14.8	Not Received	61 [98]	69.5	99	OFF	OFF	Not Active	Not Neutral
EA000270	-14.6	Not Received	62 [100]	69.5	99	OFF	OFF	Not Active	Not Neutral
EA000280	-14.4	Not Received	62 [100]	69	99	OFF	OFF	Not Active	Not Neutral
EA000290	-14.2	Not Received	63 [101]	67.5	99	OFF	OFF	Not Active	Not Neutral
EA0002A0	-14.0	Not Received	63 [101]	67.5	99	OFF	OFF	Not Active	Not Neutral
EA0002B0	-13.8	Not Received	64 [103]	67.5	99	OFF	OFF	Not Active	Not Neutral
EA0002C0	-13.6	Not Received	64 [103]	66.5	99	OFF	OFF	Not Active	Not Neutral
EA0002D0	-13.4	Not Received	64 [103]	66.5	99	OFF	OFF	Not Active	Not Neutral
EA0002E0	-13.2	Not Received	65 [105]	65.5	99	OFF	OFF	Not Active	Not Neutral
EA0002F0	-13.0	Not Received	65 [105]	66	99	OFF	OFF	Not Active	Not Neutral
EA000300	-12.8	Not Received	66 [106]	65.5	99	OFF	OFF	Not Active	Not Neutral
EA000310	-12.6	Not Received	66 [106]	65	99	OFF	OFF	Not Active	Not Neutral
EA000320	-12.4	Not Received	67 [108]	65	99	OFF	OFF	Not Active	Not Neutral
EA000330	-12.2	Not Received	67 [108]	64.5	99	OFF	OFF	Not Active	Not Neutral
EA000340	-12.0	Not Received	68 [109]	63.5	99	OFF	OFF	Not Active	Not Neutral
EA000350	-11.8	Not Received	68 [109]	63.5	99	OFF	OFF	Not Active	Not Neutral
EA000360	-11.6	Not Received	68 [109]	63.5	99	OFF	OFF	Not Active	Not Neutral
EA000370	-11.4	Not Received	69 [111]	63.5	99	OFF	OFF	Not Active	Not Neutral
EA000380	-11.2	Not Received	69 [111]	63	99	OFF	OFF	Not Active	Not Neutral
EA000390	-11.0	Not Received	70 [113]	62.5	99	OFF	OFF	Not Active	Not Neutral
EA0003A0	-10.8	Not Received	70 [113]	62.5	99	OFF	OFF	Not Active	Not Neutral
EA0003B0	-10.6	Not Received	71 [114]	62.5	99	OFF	OFF	Not Active	Not Neutral
EA0003C0	-10.4	Not Received	71 [114]	61	99	OFF	OFF	Not Active	Not Neutral
EA0003D0	-10.2	Not Received	71 [114]	60	99	OFF	OFF	Not Active	Not Neutral
EA0003E0	-10.0	Not Received	72 [116]	58.5	99	OFF	OFF	Not Active	Not Neutral
EA0003F0	-9.8	Not Received	72 [116]	58.5	99	OFF	OFF	Not Active	Not Neutral
EA000400	-9.6	Not Received	73 [117]	58	99	OFF	OFF	Not Active	Not Neutral
EA000410	-9.4	Not Received	73 [117]	58	99	OFF	OFF	Not Active	Not Neutral
EA000420	-9.2	Not Received	73 [117]	57	99	OFF	OFF	Not Active	Not Neutral
EA000430	-9.0	Not Received	74 [119]	57	99	OFF	OFF	Not Active	Not Neutral
EA000440	-8.8	Not Received	74 [119]	56.5	99	OFF	OFF	Not Active	Not Neutral
EA000450	-8.6	Not Received	75 [121]	56	99	OFF	OFF	Not Active	Not Neutral
EA000460	-8.4	Not Received	75 [121]	55.5	99	OFF	OFF	Not Active	Not Neutral
EA000470	-8.2	Not Received	75 [121]	53	99	OFF	OFF	Not Active	Not Neutral
EA000480	-8.0	Not Received	75 [121]	50	99	OFF	OFF	Not Active	Not Neutral
EA000490	-7.8	Not Received	76 [122]	50	99	OFF	OFF	Not Active	Not Neutral
EA0004A0	-7.6	Not Received	76 [122]	40.5	78.5	OFF	OFF	Not Active	Not Neutral
EA0004B0	-7.4	Not Received	76 [122]	10.5	13.5	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)
EA0004C0	-7.2	Not Received	76 [122]	0	11.5	OFF	OFF	Not Active	Not Neutral
EA0004D0	-7.0	Not Received	76 [122]	0	10	OFF	OFF	Not Active	Not Neutral
EA0004E0	-6.8	Not Received	75 [121]	0	9	OFF	OFF	Not Active	Not Neutral
EA0004F0	-6.6	Not Received	75 [121]	0	7.5	OFF	OFF	Not Active	Not Neutral
EA000500	-6.4	Not Received	75 [121]	0	7	OFF	OFF	Not Active	Not Neutral
EA000510	-6.2	Not Received	75 [121]	0	6.5	OFF	OFF	Not Active	Not Neutral
EA000520	-6.0	Not Received	74 [119]	0	6.5	OFF	OFF	Not Active	Not Neutral
EA000530	-5.8	Not Received	74 [119]	0	6.5	OFF	OFF	Not Active	Not Neutral
EA000540	-5.6	Not Received	74 [119]	0	6.5	OFF	OFF	Not Active	Not Neutral
EA000550	-5.4	Not Received	74 [119]	0	6.5	OFF	OFF	Not Active	Not Neutral
EA000560	-5.2	Not Received	73 [117]	0	6.5	ON	ON	Not Active	Not Neutral
EA000570	-5.0	Not Received	72 [116]	0	6.5	ON	ON	Not Active	Not Neutral
EA000580	-4.8	Not Received	72 [116]	0	6.5	ON	ON	Not Active	Not Neutral
EA000590	-4.6	Not Received	71 [114]	0	6	ON	ON	Not Active	Not Neutral
EA0005A0	-4.4	Not Received	70 [113]	0	6	ON	ON	Not Active	Not Neutral
EA0005B0	-4.2	Not Received	68 [109]	0	6	ON	ON	Not Active	Not Neutral
EA0005C0	-4.0	Not Received	65 [105]	0	6	ON	ON	Not Active	Not Neutral
EA0005D0	-3.8	Not Received	63 [101]	0	5.5	ON	ON	Not Active	Not Neutral
EA0005E0	-3.6	Not Received	62 [100]	0	5.5	ON	ON	Not Active	Not Neutral
EA0005F0	-3.4	Not Received	61 [98]	0	5.5	ON	ON	Not Active	Not Neutral
EA000600	-3.2	Not Received	60 [97]	0	6.5	ON	ON	Not Active	Not Neutral
EA000610	-3.0	Not Received	57 [92]	0	7	ON	ON	Active	Not Neutral
EA000620	-2.8	Not Received	52 [84]	0	6.5	ON	ON	Active	Not Neutral
EA000630	-2.6	Not Received	48 [77]	0	6	ON	ON	Active	Not Neutral
EA000640	-2.4	Not Received	44 [71]	0	6	ON	ON	Active	Not Neutral
EA000650	-2.2	Not Received	38 [61]	0	5.5	ON	ON	Active	Not Neutral
EA000660	-2.0	Not Received	37 [60]	0	5.5	ON	ON	Active	Not Neutral
EA000670	-1.8	Not Received	32 [51]	0	5	ON	ON	Active	Not Neutral
EA000680	-1.6	Not Received	32 [51]	0	5	ON	ON	Active	Not Neutral
EA000690	-1.4	Not Received	33 [53]	0	5	ON	ON	Active	Not Neutral
EA0006A0	-1.2	Not Received	31 [50]	0	5	ON	ON	Active	Not Neutral
EA0006B0	-1.0	Not Received	32 [51]	0	5	ON	ON	Active	Not Neutral
EA0006C0	-0.8	Not Received	20 [32]	.5	5	ON	ON	Active	Not Neutral
EA0006D0	-0.6	Not Received	16 [26]	0	5	OFF	ON	Active	Not Neutral
EA0006E0	-0.4	Not Received	15 [24]	0	5	OFF	ON	Active	Not Neutral
EA0006F0	-0.2	Not Received	8 [13]	84	8.5	ON	ON	Active	Not Neutral
EA000700	0.0	Not Received	3 [5]	0	8	OFF	OFF	Active	Not Neutral
EA000710	0.2	Received	0 [0]	0	6	OFF	OFF	Active	Not Neutral
EA000720	0.4	Received	0 [0]	0	6	OFF	OFF	Not Active	Not Neutral
EA000730	0.6	Received	0 [0]	0	5.5	OFF	OFF	Not Active	Not Neutral
EA000740	0.8	Received	0 [0]	0	5.5	OFF	OFF	Not Active	Not Neutral
EA000750	1.0	Received	0 [0]	0	5	OFF	OFF	Not Active	Not Neutral
EA000760	1.2	Received	0 [0]	0	5	OFF	OFF	Not Active	Not Neutral
EA000770	1.4	Received	0 [0]	0	5	OFF	OFF	Not Active	Not Neutral
EA000780	1.6	Received	0 [0]	0	4.5	OFF	OFF	Not Active	Not Neutral
EA000790	1.8	Received	0 [0]	0	4.5	OFF	OFF	Not Active	Not Neutral
EA0007A0	2.0	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA0007B0	2.2	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA0007C0	2.4	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA0007D0	2.6	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA0007E0	2.8	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA0007F0	3.0	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA000010	3.2	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA000020	3.4	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA000030	3.6	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA000040	3.8	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA000050	4.0	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA000060	4.2	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA000070	4.4	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA000080	4.6	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA000090	4.8	Received	0 [0]	0	4	OFF	OFF	Not Active	Not Neutral
EA0000A0	5.0	Received	0 [0]	0	4	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)
EA0000B0	-20.2	Not Reverse	OFF	2092	202	226	Not Active	Not Active	63.75
EA0000C0	-20.0	Not Reverse	OFF	2402	245	267	Not Active	Not Active	63.75
EA0000D0	-19.8	Not Reverse	OFF	2486	272	280	Not Active	Not Active	63.75
EA0000E0	-19.6	Not Reverse	OFF	2522	304	312	Not Active	Not Active	63.75
EA0000F0	-19.4	Not Reverse	OFF	2560	303	314	Not Active	Not Active	63.75
EA000100	-19.2	Not Reverse	OFF	2633	269	315	Not Active	Not Active	63.75
EA000110	-19.0	Not Reverse	OFF	2718	303	355	Not Active	Not Active	63.75
EA000120	-18.8	Not Reverse	OFF	2771	305	359	Not Active	Not Active	63.75
EA000130	-18.6	Not Reverse	OFF	2791	313	360	Not Active	Not Active	63.75
EA000140	-18.4	Not Reverse	OFF	2815	315	360	Not Active	Not Active	63.75
EA000150	-18.2	Not Reverse	OFF	2826	318	357	Not Active	Not Active	63.75
EA000160	-18.0	Not Reverse	OFF	2840	316	352	Not Active	Not Active	63.75
EA000170	-17.8	Not Reverse	OFF	2862	318	350	Not Active	Not Active	63.75
EA000180	-17.6	Not Reverse	OFF	2890	321	350	Not Active	Not Active	63.75
EA000190	-17.4	Not Reverse	OFF	2898	324	351	Not Active	Not Active	63.75
EA0001A0	-17.2	Not Reverse	OFF	2920	327	351	Not Active	Not Active	63.75
EA0001B0	-17.0	Not Reverse	OFF	2934	327	350	Not Active	Not Active	63.75
EA0001C0	-16.8	Not Reverse	OFF	2953	327	348	Not Active	Not Active	63.75
EA0001D0	-16.6	Not Reverse	OFF	2962	331	345	Not Active	Not Active	63.75
EA0001E0	-16.4	Not Reverse	OFF	2986	331	340	Not Active	Not Active	63.75
EA0001F0	-16.2	Not Reverse	OFF	2946	287	285	Not Active	Not Active	63.75
EA000200	-16.0	Not Reverse	OFF	2914	309	298	Not Active	Not Active	63.75
EA000210	-15.8	Not Reverse	OFF	2789	316	285	Not Active	Not Active	63.75
EA000220	-15.6	Not Reverse	OFF	2728	319	279	Not Active	Not Active	63.75
EA000230	-15.4	Not Reverse	OFF	2717	310	272	Not Active	Not Active	63.75
EA000240	-15.2	Not Reverse	OFF	2723	310	278	Not Active	Not Active	63.75
EA000250	-15.0	Not Reverse	OFF	2714	309	272	Not Active	Not Active	63.75
EA000260	-14.8	Not Reverse	OFF	2720	309	269	Not Active	Not Active	63.75
EA000270	-14.6	Not Reverse	OFF	2730	311	270	Not Active	Not Active	63.75
EA000280	-14.4	Not Reverse	OFF	2749	312	271	Not Active	Not Active	63.75
EA000290	-14.2	Not Reverse	OFF	2752	311	268	Not Active	Not Active	63.75
EA0002A0	-14.0	Not Reverse	OFF	2766	313	269	Not Active	Not Active	63.75
EA0002B0	-13.8	Not Reverse	OFF	2770	315	268	Not Active	Not Active	63.75
EA0002C0	-13.6	Not Reverse	OFF	2770	317	268	Not Active	Not Active	63.75
EA0002D0	-13.4	Not Reverse	OFF	2781	316	267	Not Active	Not Active	63.75
EA0002E0	-13.2	Not Reverse	OFF	2786	316	265	Not Active	Not Active	63.75
EA0002F0	-13.0	Not Reverse	OFF	2788	318	265	Not Active	Not Active	63.75
EA000300	-12.8	Not Reverse	OFF	2797	317	264	Not Active	Not Active	63.75
EA000310	-12.6	Not Reverse	OFF	2798	318	263	Not Active	Not Active	63.75
EA000320	-12.4	Not Reverse	OFF	2808	319	262	Not Active	Not Active	63.75
EA000330	-12.2	Not Reverse	OFF	2810	321	262	Not Active	Not Active	63.75
EA000340	-12.0	Not Reverse	OFF	2820	319	259	Not Active	Not Active	63.75
EA000350	-11.8	Not Reverse	OFF	2820	323	260	Not Active	Not Active	63.75
EA000360	-11.6	Not Reverse	OFF	2828	321	258	Not Active	Not Active	63.75
EA000370	-11.4	Not Reverse	OFF	2833	320	257	Not Active	Not Active	63.75
EA000380	-11.2	Not Reverse	OFF	2836	320	256	Not Active	Not Active	63.75
EA000390	-11.0	Not Reverse	OFF	2841	321	254	Not Active	Not Active	63.75
EA0003A0	-10.8	Not Reverse	OFF	2851	320	252	Not Active	Not Active	63.75
EA0003B0	-10.6	Not Reverse	OFF	2850	323	253	Not Active	Not Active	63.75
EA0003C0	-10.4	Not Reverse	OFF	2852	322	251	Not Active	Not Active	63.75
EA0003D0	-10.2	Not Reverse	OFF	2861	324	252	Not Active	Not Active	63.75
EA0003E0	-10.0	Not Reverse	OFF	2868	324	249	Not Active	Not Active	63.75
EA0003F0	-9.8	Not Reverse	OFF	2871	325	249	Not Active	Not Active	63.75
EA000400	-9.6	Not Reverse	OFF	2883	324	248	Not Active	Not Active	63.75
EA000410	-9.4	Not Reverse	OFF	2881	325	247	Not Active	Not Active	63.75
EA000420	-9.2	Not Reverse	OFF	2889	327	248	Not Active	Not Active	63.75
EA000430	-9.0	Not Reverse	OFF	2897	325	246	Not Active	Not Active	63.75
EA000440	-8.8	Not Reverse	OFF	2904	326	246	Not Active	Not Active	63.75
EA000450	-8.6	Not Reverse	OFF	2908	329	247	Not Active	Not Active	63.75
EA000460	-8.4	Not Reverse	OFF	2913	329	247	Not Active	Not Active	63.75
EA000470	-8.2	Not Reverse	OFF	2800	332	237	Not Active	Not Active	63.75
EA000480	-8.0	Not Reverse	OFF	2614	333	213	Not Active	Not Active	63.75
EA000490	-7.8	Not Reverse	OFF	2473	330	209	Not Active	Not Active	63.75
EA0004A0	-7.6	Not Reverse	OFF	2303	326	206	Not Active	Not Active	63.75
EA0004B0	-7.4	Not Reverse	OFF	2209	172	104	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)
EA0004C0	-7.2	Not Reverse	OFF	2201	75	44	Not Active	Not Active	63.75
EA0004D0	-7.0	Not Reverse	OFF	2210	39	19	Not Active	Not Active	63.75
EA0004E0	-6.8	Not Reverse	OFF	2196	9	-1	Not Active	Not Active	63.75
EA0004F0	-6.6	Not Reverse	OFF	2188	-11	-16	Not Active	Not Active	63.75
EA000500	-6.4	Not Reverse	OFF	2174	-23	-25	Not Active	Not Active	63.75
EA000510	-6.2	Not Reverse	OFF	2177	-31	-30	Not Active	Not Active	63.75
EA000520	-6.0	Not Reverse	OFF	2169	-36	-33	Not Active	Not Active	63.75
EA000530	-5.8	Not Reverse	OFF	2160	-36	-33	Not Active	Not Active	63.75
EA000540	-5.6	Not Reverse	OFF	2157	-36	-33	Not Active	Not Active	63.75
EA000550	-5.4	Not Reverse	OFF	2144	-37	-33	Not Active	Not Active	63.75
EA000560	-5.2	Not Reverse	OFF	2127	-38	-34	Not Active	Not Active	63.75
EA000570	-5.0	Not Reverse	OFF	2110	-36	-34	Not Active	Not Active	63.75
EA000580	-4.8	Not Reverse	OFF	2082	-37	-34	Not Active	Not Active	63.75
EA000590	-4.6	Not Reverse	OFF	2056	-37	-33	Not Active	Not Active	63.75
EA0005A0	-4.4	Not Reverse	OFF	2015	-35	-33	Not Active	Not Active	63.75
EA0005B0	-4.2	Not Reverse	OFF	1980	-31	-32	Not Active	Not Active	63.75
EA0005C0	-4.0	Not Reverse	OFF	1885	-28	-32	Not Active	Not Active	63.75
EA0005D0	-3.8	Not Reverse	OFF	1838	-28	-31	Not Active	Not Active	63.75
EA0005E0	-3.6	Not Reverse	OFF	1781	-30	-30	Not Active	Not Active	63.75
EA0005F0	-3.4	Not Reverse	OFF	1759	-30	-30	Not Active	Not Active	63.75
EA000600	-3.2	Not Reverse	OFF	1750	-31	-30	Not Active	Not Active	63.75
EA000610	-3.0	Not Reverse	OFF	1656	-35	-35	Not Active	Not Active	63.75
EA000620	-2.8	Not Reverse	OFF	1508	-20	-29	Not Active	Not Active	63.75
EA000630	-2.6	Not Reverse	OFF	1394	-24	-29	Not Active	Not Active	63.75
EA000640	-2.4	Not Reverse	OFF	1252	-20	-27	Not Active	Not Active	63.75
EA000650	-2.2	Not Reverse	OFF	1096	-9	-25	Not Active	Not Active	63.75
EA000660	-2.0	Not Reverse	OFF	1068	-18	-22	Not Active	Not Active	63.75
EA000670	-1.8	Not Reverse	OFF	935	-10	-22	Not Active	Not Active	63.75
EA000680	-1.6	Not Reverse	OFF	945	-18	-19	Not Active	Not Active	63.75
EA000690	-1.4	Not Reverse	OFF	893	-14	-18	Not Active	Not Active	63.75
EA0006A0	-1.2	Not Reverse	OFF	860	-14	-18	Not Active	Not Active	63.75
EA0006B0	-1.0	Not Reverse	OFF	831	-16	-18	Not Active	Not Active	63.75
EA0006C0	-0.8	Not Reverse	OFF	750	-20	-25	Not Active	Not Active	63.75
EA0006D0	-0.6	Not Reverse	OFF	602	-13	-26	Not Active	Not Active	63.75
EA0006E0	-0.4	Not Reverse	OFF	561	-7	-16	Not Active	Not Active	63.75
EA0006F0	-0.2	Not Reverse	OFF	560	-19	-51	Not Active	Not Active	63.75
EA000700	0.0	Not Reverse	OFF	1237	145	1911	Not Active	Not Active	63.75
EA000710	0.2	Not Reverse	OFF	1496	-12	72	Not Active	Not Active	63.75
EA000720	0.4	Not Reverse	OFF	1204	0	-154	Not Active	Not Active	63.75
EA000730	0.6	Not Reverse	OFF	912	3	-163	Not Active	Not Active	63.75
EA000740	0.8	Not Reverse	OFF	758	-5	-164	Not Active	Not Active	63.75
EA000750	1.0	Not Reverse	OFF	669	-10	-161	Not Active	Not Active	63.75
EA000760	1.2	Not Reverse	OFF	641	1	-44	Not Active	Not Active	63.75
EA000770	1.4	Not Reverse	OFF	629	3	-26	Not Active	Not Active	63.75
EA000780	1.6	Not Reverse	OFF	633	2	-24	Not Active	Not Active	63.75
EA000790	1.8	Not Reverse	OFF	640	16	55	Not Active	Not Active	63.75
EA0007A0	2.0	Not Reverse	OFF	711	3	1	Not Active	Not Active	63.75
EA0007B0	2.2	Not Reverse	OFF	722	-10	-97	Not Active	Not Active	63.75
EA0007C0	2.4	Not Reverse	OFF	699	-6	-96	Not Active	Not Active	63.75
EA0007D0	2.6	Not Reverse	OFF	662	-6	-102	Not Active	Not Active	63.75
EA0007E0	2.8	Not Reverse	OFF	630	-2	-78	Not Active	Not Active	63.75
EA0007F0	3.0	Not Reverse	OFF	611	-3	-75	Not Active	Not Active	63.75
EA000010	3.2	Not Reverse	OFF	598	-1	-60	Not Active	Not Active	63.75
EA000020	3.4	Not Reverse	OFF	585	2	-32	Not Active	Not Active	63.75
EA000030	3.6	Not Reverse	OFF	575	3	-23	Not Active	Not Active	63.75
EA000040	3.8	Not Reverse	OFF	569	5	-12	Not Active	Not Active	63.75
EA000050	4.0	Not Reverse	OFF	565	5	-15	Not Active	Not Active	63.75
EA000060	4.2	Not Reverse	OFF	571	6	0	Not Active	Not Active	63.75
EA000070	4.4	Not Reverse	OFF	577	5	-6	Not Active	Not Active	63.75
EA000080	4.6	Not Reverse	OFF	591	4	-13	Not Active	Not Active	63.75
EA000090	4.8	Not Reverse	OFF	616	-1	-42	Not Active	Not Active	63.75
EA0000A0	5.0	Not Reverse	OFF	630	-2	-51	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.

```
0000100C0:  32 46 41 42 50 37 42 56 38 41 58 31 33 36 32 37
0000100D0:  36 FF FF FF

000010046:  46 43 4A 43 39 50 5A 2E 48 45 58 2A

000010054:  41 57 37 41 47 41 20 2A

0EA000000:  06 07 00 F3 00 00 00 00 00 00 00 00 00 00 00 00
0EA000010:  00 04 08 09 58 01 FF 00 00 01 C4 01 F8 FF 00 D6
0EA000020:  00 04 08 09 25 02 02 00 00 01 E0 01 F8 FF 00 E9
0EA000030:  00 04 08 08 FD 02 03 00 00 01 E9 01 F8 FF 00 08
0EA000040:  00 04 08 08 E4 02 05 00 00 01 F4 01 F8 FF 00 14
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