

FAQs

Crash Data Retrieval (CDR) system

Q: What is the Vetronix CDR system?

A: The Vetronix Crash Data Retrieval (CDR) system consists of hardware and software that downloads pre- and post-crash data from the vehicle's airbag module (SDM) to a laptop computer. The Windows® based CDR software presents this data in easy-to-read graphs and tables.

Q: What is an airbag module (SDM)?

A: The airbag module is the vehicle's "computer" that controls airbag deployment. Since 1990, recordable airbag modules were installed in selected GM vehicles. (SDM, Sensing and Diagnostic Module, is the name given to air bag modules used in General Motors vehicles from 1994 to present.)

Q: What data can be downloaded from the vehicle's airbag module?

- A*:**
- **Vehicle speed (5 seconds before impact)**
 - **Engine speed (5 seconds before impact)**
 - **Brake status (5 seconds before impact)**
 - **Throttle position (5 seconds before impact)**
 - ◆ State of driver's seat belt switch (On/Off)
 - ◆ Passenger's airbag enabled or disabled state (On/Off)
 - ◆ SIR Warning Lamp status (On/Off)
 - ◆ Time from vehicle impact to airbag deployment
 - ◆ Ignition cycle count at event time
 - ◆ Ignition cycle count at investigation
 - ◆ Maximum ΔV for near-deployment event
 - ◆ ΔV vs. time for frontal airbag deployment event
 - ◆ Time from vehicle impact to time of maximum ΔV
 - ◆ Time between near-deploy and deploy event (if within 5 seconds)

**Depending on the particular vehicle, all or a subset of this data may be available.*

Q: What is a Near Deployment Event?

A: There are two types of airbag module (SDM) recorded crash events. The first is the near deployment event. A Near Deployment Event is an event severe enough to "wake

up” the sensing algorithm but not severe enough to deploy the air bag(s). It contains Pre-Crash and Crash data. The SDM can store up to one Near Deployment Event. This event can be overwritten by an event that has a greater SDM recorded velocity change. This event will be cleared by the SDM after the ignition has been cycled 250 times.

Q: How many Deployment Events can be recorded?

A: The second type of SDM recorded crash event is the deployment event. It also contains Pre-Crash and Crash data. The SDM can store up to two different Deployment Events, if they occur within five seconds of one another. The first deployment event will be stored in the Deployment file (this would have been the event that deployed the air bag) and the second Deployment Event will be stored in the Near Deployment file. Deployment events can not be overwritten or cleared from the SDM. Once the SDM has deployed the air bag, the SDM must be replaced.

Q: Did GM add any cost to the consumer by installing recordable airbag modules?

A: No, GM used existing memory space in the airbag module to record data.

Q: What is included in the CDR kit?

A:

- **Crash Data Retrieval Module**
- **Windows® 95/98/ME/NT/2000 based Software (CD)
(includes Help Files/Manual)**
- **Vehicle Interface Cable**
- **PC Interface Cable**
- **Airbag Module Interface Cables (3)**
- **6' Extension Cable**
- **Cigarette Lighter Power Cable**
- **AC/DC 12V Power Supply**
- **Storage Case for entire kit**

Q: How much does the CDR system (kit) cost?

A: \$2,495

Q: What vehicles can the CDR system interface with?

A: Current CDR Vehicle Coverage

(As of October, 2000)

1996

Make	Model
Buick	Riviera
Buick	Skylark
Chevrolet	Astro
Chevrolet	Camaro
Chevrolet	Cavalier
Chevrolet	Express
GMC	Safari
GMC	Savana
Oldsmobile	Achieva
Oldsmobile	Aurora
Pontiac	Firebird
Pontiac	Grand AM
Pontiac	Sunfire
Saturn	All models

1997

Make	Model
Buick	Century
Buick	LeSabre
Buick	Park Avenue
Buick	Regal
Buick	Riviera
Buick	Skylark
Cadillac	Deville
Cadillac	Eldorado
Cadillac	Commercial
Cadillac	Special
Cadillac	Seville
Chevrolet	Astro
Chevrolet	Camaro
Chevrolet	Cavalier
Chevrolet	Corvette
Chevrolet	Express
Chevrolet	Lumina
Chevrolet	Malibu
Chevrolet	Monte Carlo
Chevrolet	Silverado
Chevrolet	Suburban
Chevrolet	Tahoe
Chevrolet	Venture
GM	EV1
GMC	Safari
GMC	Savana
GMC	Sierra
GMC	Yukon
Oldsmobile	Achieva
Oldsmobile	Aurora
Oldsmobile	Cutlass
Oldsmobile	Eighty Eight
Oldsmobile	Silhouette
Pontiac	Bonneville
Pontiac	Firebird

Pontiac	Grand AM
Pontiac	Grand Prix
Pontiac	Sunfire
Pontiac	Trans Port
Saturn	All models

1998

Make	Model
Buick	Century
Buick	LeSabre
Buick	Park Avenue
Buick	Regal
Buick	Riviera
Buick	Skylark
Cadillac	Commercial
Cadillac	Special
Cadillac	Deville
Cadillac	Eldorado
Cadillac	Seville
Chevrolet	Astro
Chevrolet	Blazer
Chevrolet	Camaro
Chevrolet	Cavalier
Chevrolet	Corvette
Chevrolet	Express
Chevrolet	Malibu
Chevrolet	Monte Carlo
Chevrolet	Lumina
Chevrolet	S10
Chevrolet	S10 electric
Chevrolet	Silverado
Chevrolet	Suburban
Chevrolet	Tahoe
GMC	Jimmy
GMC	Safari
GMC	Savana
GMC	Sierra
GMC	Sonoma
GMC	Yukon
Oldsmobile	Achieva
Oldsmobile	Aurora
Oldsmobile	Bravada
Oldsmobile	Cutlass
Oldsmobile	Eighty Eight
Oldsmobile	Intrigue
Pontiac	Bonneville
Pontiac	Firebird
Pontiac	Grand AM
Pontiac	Grand Prix
Pontiac	Sunfire
Saturn	All models

1999

Make	Model
Buick	Century
Buick	LeSabre
Buick	Park Avenue
Buick	Regal
Buick	Riviera
Cadillac	Commercial
Cadillac	Special
Cadillac	Deville
Cadillac	Eldorado
Cadillac	Escalade
Cadillac	Seville
Chevrolet	Astro
Chevrolet	Blazer
Chevrolet	Camaro
Chevrolet	Cavalier
Chevrolet	Corvette
Chevrolet	Express
Chevrolet	Lumina
Chevrolet	Malibu
Chevrolet	Monte Carlo
Chevrolet	S10
Chevrolet	S10 Electric
Chevrolet	Silverado
Chevrolet	Suburban
Chevrolet	Tahoe
GM	EV1
GMC	Jimmy
GMC	Safari
GMC	Savana
GMC	Sierra
GMC	Sonoma
GMC	Yukon
Oldsmobile	Alero
Oldsmobile	Aurora
Oldsmobile	Bravada
Oldsmobile	Cutlass
Oldsmobile	Cutlass
Oldsmobile	Eighty Eight
Oldsmobile	Intrigue
Pontiac	Bonneville
Pontiac	Firebird
Pontiac	Grand AM
Pontiac	Grand Prix
Pontiac	Sunfire
Saturn	All Models

2000

Make	Model
Buick	Century
Buick	LeSabre
Buick	Park Avenue
Buick	Regal
Cadillac	Commercial
	Special
Cadillac	Deville
Cadillac	Eldorado
Cadillac	Escalade
Cadillac	Seville
Chevrolet	Astro
Chevrolet	Blazer
Chevrolet	Camaro
Chevrolet	Cavalier
Chevrolet	Corvette
Chevrolet	Express
Chevrolet	Impala
Chevrolet	Lumina
Chevrolet	Malibu
Chevrolet	Monte Carlo
Chevrolet	S10
Chevrolet	Silverado
Chevrolet	Suburban
Chevrolet	Tahoe
Chevrolet	Venture
GMC	Jimmy
GMC	Safari
GMC	Savana
GMC	Sierra
GMC	Sonoma
GMC	Yukon
Isuzu	Hombre
Oldsmobile	Alero
Oldsmobile	Bravada
Oldsmobile	Intrigue
Oldsmobile	Silhouette
Pontiac	Bonneville
Pontiac	Firebird
Pontiac	Grand Am
Pontiac	Grand Prix
Pontiac	Montana
Pontiac	Sunfire
Saturn	All but LS

2001

Make	Model
Buick	Century
Buick	Park Avenue
Buick	Regal
Cadillac	Commercial
	Special
Cadillac	Deville
Cadillac	Eldorado
Cadillac	Escalade
Cadillac	Seville
Chevrolet	Astro
Chevrolet	Blazer
Chevrolet	Camaro
Chevrolet	Cavalier
Chevrolet	Corvette
Chevrolet	Express
Chevrolet	Lumina
Chevrolet	Malibu
Chevrolet	S10
Chevrolet	Silverado
Chevrolet	Suburban
Chevrolet	Tahoe
Chevrolet	Venture
GMC	Jimmy
GMC	Safari
GMC	Savana
GMC	Sierra
GMC	Sonoma
GMC	Yukon
Isuzu	Hombre
Oldsmobile	Alero
Oldsmobile	Aurora
Oldsmobile	Bravada
Oldsmobile	Intrigue
Oldsmobile	Silhouette
Pontiac	Firebird
Pontiac	Grand Am
Pontiac	Grand Prix
Pontiac	Montana
Pontiac	Sunfire
Saturn	All but LS

The CDR System has the capability to download data from the airbag module on selected GM vehicles. Periodically, Vetronix will release cables and software updates that will expand coverage to older model year GM vehicles, dating back to 1990. All GM vehicles with airbags since 1990 have recordable airbag modules installed. We are also including in our CDR module the capability to download data from vehicles other than GM, by simply updating the PC software. This allows other car manufacturers to partner with Vetronix at a later date.

Q: Why is GM and Ford making this data available?

A: GM and Ford wish to collect air bag deployment and crash data in order to improve vehicle design safety features.

Q: Do other vehicle manufacturers have recordable airbag modules, and if so, why aren't they releasing this data?

A: Yes, some other vehicle manufacturers have recordable airbag modules. The amount of information recorded and the Model Year that they began installing these recordable airbag modules differs for each manufacturer. The NTSB (National Transportation Safety Board) and the NHTSA (National Highway Traffic Safety Administration) have recommended that all vehicle manufacturers equip their vehicles with recorders capable of storing crash data.

The Vetronix CDR system currently has the capability to download data from vehicles other than GM and Ford, by simply updating the PC software. This allows other car manufacturers to partner with Vetronix at a later date.

Q: When do you expect the other vehicle manufacturers to partner with Vetronix?

A: Vetronix signed an agreement with Ford Motor Company in November of 2000, allowing Vetronix to write software and build cables to interface with select 1998 and newer Ford vehicles. We expect the initial Ford upgrade to be available in the Fall/Winter of 2001. We anticipate that other vehicle manufacturers will release this type of information within the next year or two.

Q: Has the CDR system been validated?

A: Yes, GM, Ford and Vetronix have worked together to ensure the accurate retrieval and presentation of the recorded data. In addition, independent validation tests have been performed by NHTSA, TEEEX, Michigan State Police, Ontario Provincial Police Department, and others.

Q: Who will be using the Vetronix CDR system?

A:

- Accident Reconstructionists
- Law Enforcement
- Insurance Adjusters
- NHTSA / NTSB
- Automobile Manufacturers
- Vehicle Fleet Managers
- Car Rental Agencies
- Others

Q: How does the CDR system download data?

A: Data can be collected from the air bag module in two ways. If the electrical system of the vehicle is intact, then the data can be read by connecting to the vehicle's DLC (located underneath the dash, it is used by technicians to talk to the vehicle's on-board computer). If this is not possible, then direct connection to the air bag module is required.

Q: Where does the airbag module (SDM) collect its data?

A: All SDM recorded data is measured, calculated, and stored internally, except for the following: Vehicle Speed, Engine Speed, and Percent Throttle data is transmitted, once a second by the Powertrain Control Module (PCM) via the Class 2 data link, to the SDM.

- Brake Switch Circuit Status data is transmitted, once a second by either the ABS module or the PCM via the Class 2 data link, to the SDM. Depending on vehicle option content, the Brake Switch Circuit Status data may not be available.
- In most vehicles, the Driver's Belt Switch Circuit is wired directly to the SDM. In some vehicles, the Driver's Belt Switch Circuit Status data is transmitted from the Body Control Module (BCM), via the Class 2 data link, to the SDM.
- The Passenger Front Air Bag Suppression Switch Circuit is wired directly to the SDM.

Q: Is all the recorded data from the airbag module downloaded by the CDR system?

A: Yes, all the data retrieved from the air bag module is downloaded and displayed on the PC.

Q: Is the Vetronix CDR system the only tool that can download this type of crash data?

A: Vetronix has exclusive rights from GM to download and convert the recorded airbag module data into a readable format. No one else has licensed access to this information.

Q: Is the data permanently stored in the vehicle's airbag module?

A: Yes, the data is permanently written in the EEPROM.

Q: How do I power up the CDR interface module?

A: There are three ways to power up the CDR interface module. First, you must determine if the crashed vehicle has its electrical system operational or not. If it is, then you can simply access the airbag module data by plugging into the OBD II connector, which will power up the CDR module.

If the vehicle's electrical system is not operational, then you must first locate the airbag module (SDM) using the chart found in the help files. Once the SDM has been found, then you have to determine if you can access it at the crash scene, or if you need to unbolt it and take it back to the office. If you decide to access it on-site, then you can plug the DC power cable into your car's cigarette lighter and power up the CDR interface module, which then powers up the SDM.

If you unbolt the SDM and take it back to the office, then you can use the 12V AC/DC power supply, which powers both the CDR interface module and the SDM.