

# FLASH<sup>2</sup>

**ALL-MAKES  
REPROGRAMMER**

*We see the future of automotive technology, and we're already years ahead.*



**CARDONE**

5501 Whitaker Ave.  
Philadelphia, PA 19124-1799  
[www.cardone.com](http://www.cardone.com)

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## What you need to know about FLASH

**F**LASH Reprogramming is simply an electronic method of restoring an Electronic Control Computer/Power Control Module OBDII unit (ECM/PCM OBDII units) to OE specifications. Most ECM/PCMs do not have removable PROM (Programmable Read Only Memory) chips — previously used to restore electronic codes within the computer. With FLASH Reprogramming units, the PROM chip is embedded within the computer board itself and is electronically updated. It eliminates the need to replace or transfer computer chips to restore a vehicle to normal operation. Most applications after 1996 require FLASH Reprogramming.

FLASH Reprogramming also allows you to fix known OEM driveability problems for a specific application by electronically updating the codes. Sometimes a minor adjustment to the software can improve engine or transmission performance, including improved fuel economy, improved emissions and smoother idle.

FLASH Reprogramming is not complicated:

1. A computer with FLASH technology uses the serial data lines for off-board reprogramming, or OBD II connectors on the vehicle for on-board reprogramming, to reprogram OE programming codes into the ECM's microprocessor.
2. A pass-thru device connects the computer module to a PC.
3. Then, based on a vehicle's transmission and emissions type, the latest upgrade is selected and the information is sent to the ECM/PCM.

**FLASH  
Reprogramming  
Within 24 hours**



## How does it affect you?

You can service your customers without having to send them to the new car dealers — now and in the future. Before FLASH Reprogramming was made available to the aftermarket, many independent shops sent their customers back to new car dealers to repair engine computers with driveability problems. This resulted in lost sales for the independent repair shops and aftermarket suppliers.

The passing of SB1146, ensures the aftermarket has the ability to offer a repair solution with any new technologies released in the future. Recently, the California Air Resources Board (ARB) mandated OE manufacturers to provide the aftermarket with a way to offer FLASH Reprogramming service in a standardized way and with minimal investment. The Society of Automotive Engineers (SAE) jumped right in and created the J2534 Recommended Practice as the means to be able to provide the FLASH Reprogramming data from the OE manufacturers to the aftermarket. J2534 provides the standard for all OE manufacturers to follow so that a single pass-thru device can be used to transfer the programming data from a standard PC onto the vehicle's ECM. CARDONE's FLASH<sup>2</sup> All-Makes Reprogrammer fully complies with J2534 requirements.

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## How can you profit from this new technology?

As technology becomes more advanced, it is important for you to understand and determine the best options that are profitable for your business. CARDONE offers you a choice for FLASH Reprogramming so you don't have to stock products that won't sell, or purchase expensive equipment with no return on your investment.

### You can choose the option that is right for your business:

1. Perform your own J2534 All-Makes FLASH Reprogramming. Please contact your CARDONE sales representative for information on how to obtain the tools for FLASH<sup>2</sup> All-Makes Reprogramming.
2. Order your ECM and FLASH<sup>2</sup> All-Makes Reprogramming service through CARDONE's Priority Plus Service (Same day shipping if ordered before 2:00 p.m. EST).
3. Send your ECM to CARDONE for R&R and FLASH<sup>2</sup> All-Makes service.
4. Order your ECM from CARDONE and have it reprogrammed at an aftermarket facility with a reprogramming system.

## The History of FLASH

In early 1980, original equipment manufacturers introduced the first generation on-board diagnostics (OBD) engine control computers. On board diagnostics monitor and control any engine functions resulting in improved engine performance and lower emissions. If a malfunction occurs, the ECM/PCM recognizes the defective circuit and records trouble codes for later retrieval with a scan tool. This system allows technicians to accurately diagnose and repair the problem. Driveability problems were also corrected by replacing the PROM chip.

In 1990, FLASH Reprogramming technology was introduced. The first application to require FLASH was the Geo Storm. Also, in 1996, OBDII was introduced nationally. As of 1996, all GM ECM/PCMs require FLASH Reprogramming. OBD II systems and FLASH technology work together to create a fast, efficient way to maximize vehicle performance.

In September 2000, the aftermarket won a major victory with the passing of Bill SB1146 in California. In the past, manuals, technical service bulletins, training and diagnostic materials were only distributed to new car dealers. This bill mandates that all materials, including FLASH Reprogramming information, are available to the aftermarket.

As of 2004, all new vehicles must support the SAE J2534 as mandated by the EPA.



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## The Future of FLASH

The significance of SB1146 bill is that it ensures all future repair technologies are available to the aftermarket. J2534 provides the potential for FLASH Reprogramming of all OE manufacturers as they release their data. FLASH is a growing part of electronics repairs today and will grow more rapidly in the future as vehicles are manufactured with more electronic and electronically-driven, electronically-monitored components.

CARDONE is committed to making automotive electronics a profitable part of your business. CARDONE offers FLASH Reprogramming on many ECM units. Check your CARDONE catalog for applications and ordering.