



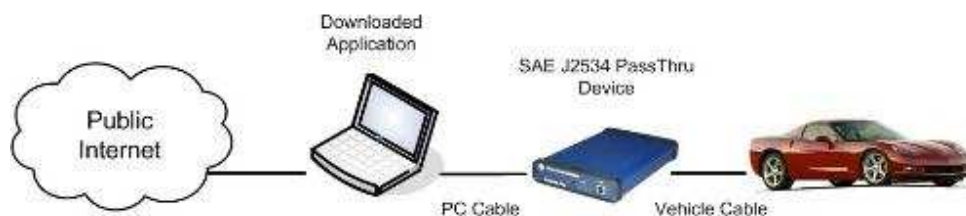
CarDAQ-Plus

Overview

The CarDAQ-Plus is the ultimate interface for communicating with newer automobiles, heavy duty trucks, and CAN networks. It has both Ethernet and USB connectivity to a PC, a built-in operating system for running internal programs, protocol support for all modern vehicles, and six analog inputs. No other J2534 tool on the market has the performance and capabilities of the CarDAQ-Plus. It is upgradeable thru firmware updates and expansion slots. The CarDAQ family is the most talked-about J2534 interface out there.

J2534-1 Reflashing Applications for Independent Repair Shops

Servicing newer, more increasingly complicated vehicles has put independent repair shops at a disadvantage against auto dealerships that have access to the latest service tools and knowledge databases. Accurately diagnosing and repairing many of these newer vehicles used to require full access to expensive factory service tools. The EPA recognized the independent repair shop's need for access and mandated that all OEMs comply with the SAE standard J2534-1. The SAE J2534-1 standard defines a uniform hardware device, like the Drew Technologies CarDAQ-Plus, that all automakers must support with their vehicle reflashing applications.



Having access to SAE J2534-1 software and tools are important for several reasons. First, diagnosing and repairing vehicles often requires reprogramming or reflashing the vehicle with the latest update. After a vehicle is assembled and sold at a new car dealership, the automaker's engineering groups often fix common problems found at the dealership by releasing a new reflash. The reflash is not a recall, and therefore most vehicles on the road will not get the update unless they are brought in to the dealership for servicing. These reflashes could fix transmission shifting problems, hesitation, rough idle, drivability, check engine lights, emissions quality, poor performance, or any of a number of other problems. Without the reflashing capabilities, independent repair shops may spend time and money trying to repair an issue with hard parts that cannot be repaired without a calibration flash update.

The Second reason a repair shop should have a SAE J2534-1 device is to offer their customers flash updates as an up sell. Even if the customer does not believe they are experiencing a problem with their vehicle, they may see some benefit in performance, drivability, or even fuel economy by getting their vehicle updated to the latest available calibration flash. It also serves as good preventative maintenance to update the calibration flash and avoid any problems that it was intended to fix.

[J2534-2 Support](#)

The EPA standard for independent shop reprogramming is J2534-1, but since automakers recognized that the J2534-1 standard did not cover all of their needs for the future. This led to the development of J2534-2, a set of optional extensions. The CarDAQ-Plus from Drew Technologies supports many J2534-2 extensions. Drew Technologies is also working with the SAE and automakers to establish a SAE J2534-3 standard for compliance. This support protects your investment. Supported J2534-2 extensions include:

- Single Wire CAN
- CAN Mixed Mode
- A/D Inputs
- Pin Switching
- Discovery
- Extended PassThrough for Device Configuration Parameters
- Extended Programming Voltage Support
- UART Echo Byte Protocol

[Learn More About J2534 Reflashing](#)

Article - Basics of J2534

Drew Technologies wrote a comprehensive article covering the basics of how J2534 works. This article was published in the February 2007 Under Hood Service Magazine. In this article, we cover the following topics:

What is J2534?

How does J2534 work?

What equipment do I need?

How much does each automaker charge?

What are the J2534 websites for each automaker?

What do I need to know before I start?

What are the steps in a reprogramming operation?

What are the important details for Ford, GM, Chrysler, Honda, and Toyota?

Article - Why Drew Tech and CarDAQ-Plus are the right choice.

Through the years, many people have asked us what makes J2534 tools different. While it is true that J2534 is a written standard, many companies in the industry have offered products that do not fully implement the standard.

Drew Technologies not only implements the standard fully, but also rigorously tests its products with each and every automaker that offers J2534 software. This article explains that there is a difference in which tool you choose.

[OEM and Development Features](#)

CarDAQ-Plus has many uses beyond the independent repair shop. The CarDAQ-Plus was designed to be a high performance development tool. It performs the standard PassThru J2534 functionality, adds an internal 200MHz embedded Linux host, an internal and optional external Compact Flash slot, and an internal web server for thin-client applications. In addition to acting as a laptop-to-vehicle PassThru device, it can also host diagnostic and data logging applications on-board.

[Compact Flash expansion for Wireless 802.11, GPS, and more](#)

The CarDAQ-Plus has one internal and one optional external Compact Flash slot that can be used simultaneously. The external Compact Flash slot is optional and must be ordered at the time of purchase. For wireless connectivity, we interface 802.11 WiFi compact flash cards. This is the same proven technology found in most modern laptops. It provides the speed, range, and reliability needed for wireless applications. The Compact Flash expansion slots may also be used for other CF peripherals, such as GPS receivers, expanded storage, modems, and any other CF card that supports Linux. The CarDAQ-Plus will support up to 8GB of memory per Compact Flash slot

[Remote Diagnostics and Standalone operations](#)

CarDAQ-Plus runs its own operating system, embedded Linux, which allows it to be used as a standalone tool without a PC attached during operation. The Linux installation includes a file and web server which could simplify development of remote diagnostics and management applications. Imagine writing your own C/C++ application to perform an on-road test, then use 802.11 WiFi to wirelessly download a vehicle's data as soon as it re-enters the repair facility. Your program could access GPS compact flash card to capture location information about the test-drive, or use a cellular modem and download telemetry from live tests! For standalone applications, this provides the features of a PC host and a PassThru device all in one package.

[Tools available for development](#)

Drew Technologies provides an application programmer interface (DLL) for OEMs, integrators, or end-users to develop their own PassThru (SAE J2534) applications. You can use any PassThru (J2534) compliant application with the CarDAQ-Plus. You can also Create your own applications in LabVIEW™, C or Visual Basic. Use your favorite language, including: TCL, Perl, .Net, Java, or C.

[Specifications](#)

- Bus Protocols
 - CAN Bus (capable of ISO 15765, GMLAN, J1939, and ISO14229)
 - 2nd CAN (Dual or Single Wire)
 - Ford SCP (J1850PWM)
 - GM Class2 (J1850VPW)
 - KWP2000 (ISO9141/14230)
 - Chrysler SCI (J2610)

Specifications

- PC Interfaces
 - **USB (now included)**
 - Wired RJ45 Ethernet
 - Optional 802.11 WiFi

- Other
 - Compliant to [SAE J2534](#) (Feb 2002) and [SAE J2534-1](#) (Dec 2004)
 - Compliant to [ISO 22900-1](#) MVCI physical layer
 - Programming voltage on J1962 pin 6, 9, 11, 12, 13, 14 or Aux
 - 6 General purpose analog inputs (0-27V, 2Ksps, 12 bit)
 - Ground pins 9, 12, or 15
 - Internal Compact Flash slot (must be configured when ordering)
 - Optional external Compact Flash slot

- Product Specifications
 - Operating voltage: 7 – 26 Volts
 - Size: 1.25"H x 7.5"D x 5.25"W
 - Operating Temperature: Commercial Range (0 to +70° C)

Customer Uses

- J2534 Independent Repair Facility reprogramming tool
- Bench top ECU reprogramming
- In-Vehicle ECU reprogramming
- OBD2 Diagnostics using DashDAQ-PC and other 3rd party applications
- In-vehicle pass-thru data logging
- Standalone data logging or monitoring
- Fleet or public transportation data acquisition
- OEM Engineering
- OEM calibration reprogramming
- End-of-Line testing
- Dealer Service Tools
- 3rd party integrated solutions
- Specialized Customers



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