

EMV solutions for Windows

A free trialware version of the EmvX Toolkit and the EMV.LIB HAL Files can be downloaded from the CreditCall website.



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Background

EmvX - Chip and PIN / EMV Level 2 for the Windows Environment

The Microsoft Windows environment offers many benefits to developers, CreditCall has recognised this in the development of EmvX, our EMV Level 2 Kernel for Windows and Windows CE. Using the Microsoft COM architecture EmvX offers a simple and rapid method of adding EMV Level 2 functionality to a payment application.

To ensure that EmvX can be used in a wide variety of terminal configurations it has been created as a toolkit of EMV functions that can be called in the correct order to enable an EMV Level 2 transaction to take place. All the external functions such as the online authorisation and PINpad interfaces are provided in the form of drivers. A number of these drivers are already available but in the event that a suitable one is not available, driver templates can be provided.

As the cost of ownership is one of the key factors in the development of an EMV Level 2 Kernel, all the elements that change over time have been designed to enable this to be executed as simply as possible. For example, EmvX stores its configuration in the Windows registry so that it can be simply updated using a script that can be completed locally or remotely. The same is also true of the CA Public Keys used for data authentication.

EmvXCE is the Windows CE version of EmvX and offers developers implementing Chip and PIN in this environment the same benefits as EmvX. Due to its limited system dependencies, EmvXCE will work with any version of Windows CE, irrespective of the hardware platform, and provides a simple method of adding EMV Level 2 functionality to a payment system.

Key highlights of the EmvX Toolkit:

- Ease of adding EMV Level 2 compliance to existing Windows applications - A simple example in Visual Basic performing an EMV compliant transaction with a PINpad requires only a few lines of code.
- The EmvX Toolkit runs natively on the Windows platform. It is faster and more reliable than solutions based on interpreted languages such as Java, which also maintains platform stability.
- Low system resource usage. The memory requirement of the EmvX Toolkit is around 2 megabytes, and on a typical PIII-based machine less than 20 milliseconds of CPU time is spent executing EmvX Toolkit Kernel code.
- Easy interface to peripherals. Drivers for popular card readers and PINpads are already provided with the Toolkit.
- Easy interface to third party EFT packages. Template applications are included in the EmvX Toolkit.

EMV supported features

The EmvX Toolkit fully supports a variety of data authentication, configuration, CVM methods and other special features within the EMV Level 2 version 4.1 specification.

Data Authentication Methods:

Static, Dynamic and Combined Data Authentication (SDA, DDA and CDA).

Acquirer Interfaces:

Authorisation Request, Financial Transaction Request, Batch Data Capture, Online Data Capture.

Cardholder Verification Methods:

Offline Plaintext PIN, Offline Enciphered PIN, Signature, No CVM, Fail CVM.

Miscellaneous:

Certificate Revocation, Velocity and Floor Limit Checking, Exception Lists, Recommended EMV Application Selection Algorithms.