



SmartSoft manages the entire EMV Level 2 Kernel certification process from analysis to final certification on behalf of the POS vendors.

## EMV Level 2 Kernel

EMV and Contactless Level 2 Kernel Applications support both contact and contactless technologies.

## Terminal Card Kernel Solutions

SmartSoft, who has been dedicated to EMV technologies since 2001, offers EMV and Contactless Level 2 Kernel Applications that supports both contact and contactless technologies (MasterCard PayPass, and VISA payWave). By establishing a hardware independent and full parametric solution, the porting time is minimized.

The EMV and Contactless Kernel Application are applications which can be ported onto any hardware platform seamlessly. The Level 2 Kernel implements the rules of the latest EMV and Contactless standards on various terminals, such as POS, ATM, CAT, Kiosk, Validator, Ticketing Machines, and Contactless terminals etc.

The EMV and Contactless Level 2 Kernel Application are middleware applications between the terminal application and terminal operating system. It uses terminal API's and is abstracted from the operating system and terminal application. This way it can easily be adapted to any type of terminal operating environment.

The application has been ported to various platforms, such as Windows, Linux and proprietary operating systems.

### Key Features:

- All of the latest EMV optional and mandatory requirements are supported.
- Contains a very simple interface for terminal applications as well as abstracting terminal applications from technical details with simple functions.
- Terminal Platform Abstraction Layer: This layer is located between the Terminal Operating System and the EMV Level 2 Kernel Application. This platform has some empty functions that can be populated with terminal platform dependent API's, such as a smart card, display, printer, menu, and file interfaces.

- Parametric architecture. The Kernel does not need to be recompiled or updated when specific needs occur on the terminal side because it allows all variable parameters to be updated. Some of the parametric structure types are:
- Parametric message displaying
- Support for more than one language
- Paths of files: Exception, Revocation, and Terminal Parameters files.
- RSA, Hash, and T-DES cryptographic functions
- Advanced error handling with around 80 error codes.

## SmartSoft Services for Level 2 Kernel Certification Process

SmartSoft manages the entire EMV Level 2 Kernel certification process, from analysis to final certification, on behalf of

the POS vendors and provides the following support and services:

- Preparation and filling in the ICS form
- Porting the EMV Kernel to the terminal
- Testing with the EVAL tool until no failed tests remain.
- Certification office selection
- On-site support during the debugging session
- Off-site support during certification
- Training and documentation

## Kernel Simulator on Windows Platform

The EMV, PayPass, and payWave Analyzer tool was developed by porting the Level 2 Kernel Application to the Windows Platform. Its user friendly GUI's allows for monitoring of all transaction details on the Windows screens.



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