EMVCo Level 3 Testing
Frequently Asked Questions (FAQ)

1. What does EMV® Level 3 testing mean?

EMV Level 3 (L3) testing aims to validate the integration of an EMV payment or cash dispensing terminal with any merchant or bank systems to ensure end-to-end transaction acceptance.

L3 testing includes the series of processes required to ensure that a new or upgraded terminal (hardware and/or software) meets the specific requirements and recommendations of the individual payment systems before being deployed in the field.

As background, EMVCo has historically been involved in managing Level 1 and Level 2 acceptance device testing processes, collectively known as Type Approval.

- Level 1 focuses on the physical hardware capabilities of a payment card or device, ensuring its electro-mechanical components meet the required specifications.

- Level 2 focuses on the software or firmware interactions between the card and terminal, specifically driven on the terminal side by a component called the 'EMV Kernel'.

For Level 1 and 2 testing, the requirements for compliance are detailed in the EMV Chip Specifications. More information about the Type Approval process can be found [here.](here)

Level 1 and Level 2 testing is typically performed in 'component' mode – meaning that each area is tested independently of the other, and typically only within a laboratory environment. In contrast, L3 requires that the terminal be complete with its EMVCo-approved hardware, software kernel, and payment application in place, and must be connected to a test environment or host simulator which mimics authorisation responses from payment systems.

2. What is EMVCo doing in this area?

EMVCo is leveraging its organisational structure and proven technical expertise to deliver an operationally aligned and standardised EMV L3 testing process. Following a feasibility analysis, it has identified key elements to achieve a more streamlined integration testing experience that supports multiple payment systems.

Based on this knowledge, EMVCo has built a platform to manage the evolution of an EMV L3 test suite and the qualification of EMV L3 test tools.

The test results that correspond to the payment system test cases will continue to be submitted to the individual payment systems, who retain responsibility for providing final approval according to their specific requirements.

3. What was the previous process for EMV L3 testing?

Historically, each payment system developed and managed their own EMV L3 test tools and certification processes. This meant that test tool providers were required to develop and qualify different tools to meet the specifications of the individual payment systems.

4. What value does this activity bring to the industry?

EMVCo's EMV L3 platform delivers various process and operational efficiencies to enhance the ease of use, convenience, and consistency of EMV L3 testing.

For example, its standardised approach (involving a machine-readable test plan, test cases, and pass criteria descriptions) enables testing providers to develop consolidated solutions to perform EMV L3 testing across different payment systems, without the need for repeated test tool requalification.

This level of standardisation improves automation and results in better quality tools with greater flexibility, which can quickly meet the evolving requirements of the individual payment systems and other testing entities.

For merchants and acquirer processors, this level of industry clarity is predicted to reduce time to market for integrating new, or updating existing, payment acceptance terminals.

5. Why is EMVCo getting involved in L3 testing?

EMVCo seeks to respond to industry demand and support the development of a globally interoperable payments landscape. In late 2013, chip acceptance acquirers worldwide requested that EMVCo review payment systems' L3 testing processes and identify potential synergies to deliver a more streamlined experience.

Following this review process, EMVCo concluded there was sufficient scope to develop a standardised, consolidated EMV L3 testing process and progressed accordingly.

6. Is EMVCo expanding its scope with this activity?

No. For face-to-face payments, EMVCo is predominately focused on the relationship between the payment device (card, smartphone, wearable) and the acceptance terminal, which is defined and documented within the EMV Chip Specifications.

At this stage, EMVCo does not plan to incorporate EMV L3 technical requirements into its core specification development.

7. Is EMVCo's activity in this area driven by the experiences in the U.S.?

EMVCo works to support the payment industry to facilitate worldwide interoperability and acceptance of secure payment transactions.

The deployment of EMV technology in the U.S., which was unprecedented in terms of speed, volume and breadth, highlighted specific challenges regarding the EMV L3 testing process.

EMVCo activity in this area is therefore part of its remit to evolve the EMV Specifications and related testing processes to effectively support current global needs.

8. Will this initiative only support EMVCo's member-owners?

No. The EMV L3 testing platform also potentially supports the requirements of domestic and regional payment systems. Payment processors who support their merchants with specific EMV L3 testing needs will also find value in the EMVCo L3 efforts.

9. Who has provided input into this area of work?

EMVCo has engaged with test tool and services providers to receive insight on EMV L3 testing. This has been conducted through EMVCo's Associates Programme that is open to industry stakeholders across both technical and business levels to confirm understanding of requirements that support global interoperability and security. New participants who are interested in contributing to the EMV L3 testing effort are welcome to join the Associates Programme. To find out more, visit the EMVCo website.

10. Where do I get further information?

More information and specific documentation regarding EMV L3 testing can be found here.