



Visa U.S. EMV® Chip Terminal Testing Requirements

August 2022 – Version 2.4

Level 3 (L3) testing helps ensure that chip terminals that have been configured for deployment by acquirers are correctly integrated into the Visa payment acceptance environment and do not unduly contribute to interoperability problems. This improves acceptance of Visa-branded products. L3 testing applies to a wide range of contact and contactless chip terminals (e.g., POS, mPOS, ATM, transit, Tap to Phone, Fleet 2.0, etc.). This document outlines specific U.S. L3 testing requirements for the following scenarios:

- Adding contactless functionality to a terminal
- Deploying a terminal that supports an Electronic Payment Server (EPS)

Important: Effective 16 July 2022: The Visa EMV-compliant L3 Test Set Files must be used when performing any new L3 testing in all regions. The legacy toolkits (ADVT, CDET, VpTT, and U.S. Quick Chip and Minimum Terminal Configuration ADVT/CDET) have been retired. For details, see the Visa Global L3 Testing – Guidelines and Frequently Asked Questions (FAQ).

Contactless Testing

As of April 2019, terminals accepting contactless payments in the U.S. must support qVSDC and the MSD path must be disabled. To be compliant with these requirements, identify the scenario of your specific terminal in the table below and follow the related steps.

Scenarios Important: For all scenarios, the terminal must have already received EMV Level 1 and Level 2 approval and be configured for deployment.			
	Scenario 1	Scenario 2	Scenario 3
	Terminal device supports MSD contactless (non-compliant) AND has already been certified for contact chip. <i>Note: These terminals already contain the Visa contactless kernel.</i>	Terminal device is contactless capable AND has already been certified for contact chip.	Terminal device is contactless capable BUT the contactless kernel and/or EMV kernel has expired.
Step 1	Set up the terminal device application to process qVSDC transactions by simply modifying the Terminal Transaction Qualifiers (TTQ): <ul style="list-style-type: none"> • Byte 1 bit 6 must be equal to 1b (qVSDC supported) • Byte 1 bit 8 must be equal to 0b (MSD not supported) <i>Note: Configuration of the Visa contactless kernel does not impact the other payment network contactless kernels.</i>	Enable contactless by loading the Visa contactless kernel (VCPS 2.2.4 or higher). <i>Note: If VCPS 2.1.3 is already loaded, follow Scenario 1, Step 1.</i> <i>Note: Configuration of Visa's contactless kernel does not impact the other payment network contactless kernels.</i>	Enable contactless by loading the Visa contactless kernel (VCPS 2.2.4 or higher).
Step 2	Visa does not require L3 testing to be formally completed with the acquirer/processor. However, the latest version of Visa's EMV-Compliant Global L3 Test Set Files must be used with an EMVCo qualified and Visa confirmed L3 Test Tool (a list of third party vendor test tools is available at technologypartner.visa.com) to successfully complete L3 self-testing, and logs must be retained for a minimum of 5 years.		
Step 3	A notification email attesting successful completion of L3 testing (all test results "passed") must be sent to acquirer/processor (optionally include logs based on acquirer/processor requirements). For organizations still submitting test results into CCRT, it will auto-accept the submission.		
Step 4	If testing is successfully completed and the notification email sent, then the terminal device is considered to have completed contactless L3 testing from Visa's perspective.		

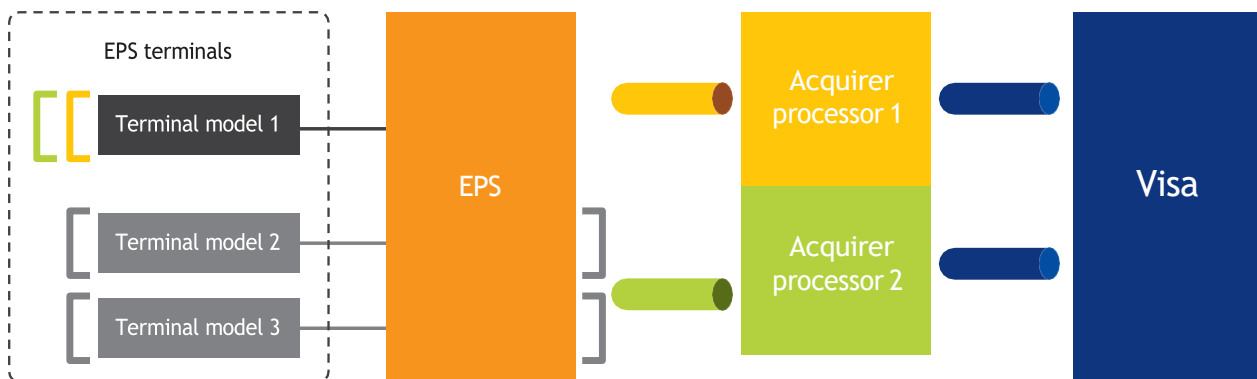
L3 does not specifically test the performance of the contactless antennae or reader size. It focuses on the integration of the payment application to the Level 2 kernel. While there may be variances of Level 1 & Level 2 letters of approval for a terminal family, the Level 2 kernel is often identical within that family. When a deployment supports a contactless terminal family that also shares the same Level 2 kernel, a single Visa contactless reader can be L3 tested to cover the entire terminal family. Consult with your terminal vendor to ensure a terminal falls within a terminal family. This approach allows a general reduction in the number of test iterations without compromising the integrity or the objective of the testing.

Electronic Payment Server (EPS) Testing

In May 2019, Visa introduced a new Level 3 (L3) testing process when using an EPS architecture in the U.S. to streamline L3 testing. Any terminal device type can use this process (e.g., ATM, AFD, POS, mPOS). EPS aims to remove redundant testing.

An EPS is defined as a server solution that manages messaging and updates to the attached EMV terminals. The EPS is a local or cloud- based server that manages, for example, the set of commands and scripts that configure, initiate and control payment transactions sent to the attached thin client terminals. This includes passing commands and data usually via a proprietary or scripting language to configure, control and manage EMV transactions. The EPS provides an abstraction layer between the EPS and the EMV kernel and a uniform interface between the EPS and the acquirer host or gateway. In addition, where a gateway uses a uniform proprietary message format for every single POS/PINPAD endpoint, the gateway may fall under the definition of an EPS.

Below is an illustration of, and the steps to follow to take advantage of, the streamlined EPS testing process:



Step 1

Perform one formal L3 testing (no changes to the acquirer processor L3 testing process) per acquirer processor's platform/ message format.

- The testing must be performed using a terminal that contains the super set of functionalities (i.e., catering for all the functionalities supported by the EPS—referred to as “Terminal model 1” in the graphic above).
- Refer to the latest version of the *Visa Global -L3 Testing Guidelines and FAQ* on the Visa Technology Partner (VTP) site (technologypartner.visa.com) for details.

Note: See *EMVCo-qualified* and *Visa-confirmed Test Tools* at technologypartner.visa.com.

Step 2

Any additional testing is performed based on the acquirer processor's requirements using terminal model 1.

Note: If the EPS testing has been successfully completed, the pipe between the EPS and the acquirer processor (illustrated in yellow and green in the diagram above) would no longer change.

Step 3

Adding a terminal device (e.g., terminal model 2 or 3) to a certified EPS with equal or less functionality.

- L3 testing for EPS can be performed independently of the acquirer processor for any terminal with equal or less functionality than terminal model 1 (in this document referred to as terminal model 2, terminal model 3, etc.). Terminal models may come from different terminal vendors. If EPS testing is successfully completed, then self-testing may be performed for any additional terminal devices added to the EPS. In that case, formal end-to-end L3 testing with the acquirer processor may not be required.
- Visa does not require L3 testing to be formally completed with the acquirer/processor. However, the latest version of Visa's EMV-Compliant Global L3 Test Set Files must be used with an EMVCo qualified and Visa confirmed L3 Test Tool (a list of third party vendor test tools is available at technologypartner.visa.com) to successfully complete L3 self-testing, and logs must be retained for a minimum of 5 years.
- Proprietary test cases (outside the scope of payment network L3 self-testing) may be added to test between the terminal and EPS.
- A notification email attesting successful completion of L3 testing (all test results "pass") must be sent to acquirer/processor (optionally include logs based on acquirer/processor requirements). For organizations still submitting test results into CCRT, it will auto-accept the submission.
- Merchants, VARs, ISVs, etc. must follow the acquirer/processor and Visa process and requirements.
- The entity (Merchant, VAR, ISV, etc.) should have sufficient experience and expertise in EMV terminal testing to appropriately identify the required test cases for the device and configuration under test, perform EMV test debugging without the support of a processor or acquirer, and have an established history of performing iteration-free EMV terminal testing projects.

Merchants, VARs, ISVs, etc. should reach out to their acquirer processors to determine if they support an EPS testing process.

Note: As a reminder, acquirer processor host testing is to be performed once for each platform. Testing with each global payment network was required to be completed by April 2013, as per global payment network mandates. Any new acquirer processor endpoints are required to perform host testing that includes chip data.

Visa Chip Vendor Enabled Service (CVES)

CVES helps streamline the testing and reporting requirements for the deployment of chip terminals. CVES engages third-party chip tool vendors to execute L3 testing on behalf of acquirers and processors, analyze the results, and optionally submit reports to Visa using the CCRT.

Visa Global Chip Acquirer Self-Accreditation Program

Visa Global Chip Acquirer Self-Accreditation Program for acquirers eliminates the need to use the CCRT for reporting L3 terminal test results when those acquirers deploy contact and contactless chip terminals. The Visa Global Chip Acquirer Self-Accreditation Program streamlines acquirers' chip-testing process and removes redundant terminal test result reporting. It also allows acquirers to adjust their test plans based on the terminal solution and merchant vertical where the terminal is deployed, enabling them to perform the Visa-recommended minimum set of test scripts for both contact and contactless chip solutions. The program also includes Quick Chip testing processes and requirements (defined EMV terminal test cases).

Eligibility Requirements

For more details on eligibility for this program, contact your Visa representative.

For More Information

Visa clients can access Visa documentation on [Visa Online](#). Visa-confirmed tool vendors can access documentation at <https://technologypartner.visa.com>.

- *Visa Global Level 3 (L3) Testing Guidelines and Frequently Asked Questions (FAQ)*
- *Chip Compliance Report Tool (CCRT) User Guide*
- *Visa Smart Debit/Credit Contact and Visa Contactless U.S. Acquirer Implementation Guide*
- *Visa Chip Vendor Enabled Service (CVES) Benefits*
- visachip.com
- *Visa Minimum U.S. Online Only Terminal Configuration*
- *U.S. Visa Contactless Transit Terminal Testing*
- EMV Migration Forum: “[EMV Testing and Certification White Paper: Current Global Payment Network Requirements for the U.S. Acquiring Community](#)”
- U.S. Payments Forum: “[Options for Reducing Level 3 EMV Certification Time for Retailer Systems Using Electronic Payment Servers \(EPS\)](#)”
- U.S. Payments Forum: “[EMV Level 3 Contactless Certification Recommended Solutions to Reduce Deployment Time](#)”

Acquirers should consult with their Visa representative for more details.