



# Chip Card Acceptance Device Testing and Approval Requirements

Visa Approval Services

Version 6.0



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Visa Confidential

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## Introduction

This document serves as a guide to the Visa Approval Services testing and approval process for contactless chip card acceptance device products – Readers and/or Terminals (hereafter referred to as “Contactless Device Products”). It includes information needed by Device manufacturers (hereafter referred to as “Device Vendors”) and Visa internal personnel to understand Approval Services’ requirements and process for the approval of Contactless Device Products that carry the Visa brand.

## Visa Recognized Laboratories

Visa has accredited a number of independent laboratories to execute the testing process on behalf of Visa. The functions of a Visa recognized laboratory (hereafter referred to as “Laboratory”) are discussed throughout this document.

A current list of Visa Recognized Testing Laboratories can be found on the [Visa Technology Partner](#) and [Visa Digital Partner Services](#) websites

## Specifications and Requirements

Device Vendors are responsible for developing their Contactless Device Products according to the appropriate EMVCo and Visa specifications and requirements.

Visa specifications and requirements require a technology license agreement. Technology license agreements can be obtained from the [Visa Technology Partner](#) website, under ‘Registration and Licensing’.

[Appendix B](#) in this document provides information about selected specifications and requirements.

## Contact Information

Visa’s goals are to provide a formal, standardized process for testing Contactless Device Products that support Visa’s contactless payment applications, and to enhance communication between all participants in the testing and approval process. Visa Approval Services (hereafter referred to as “Approval Services”) provides a single point of contact, both for vendors and for Visa personnel, regarding the testing process.

Introduction  
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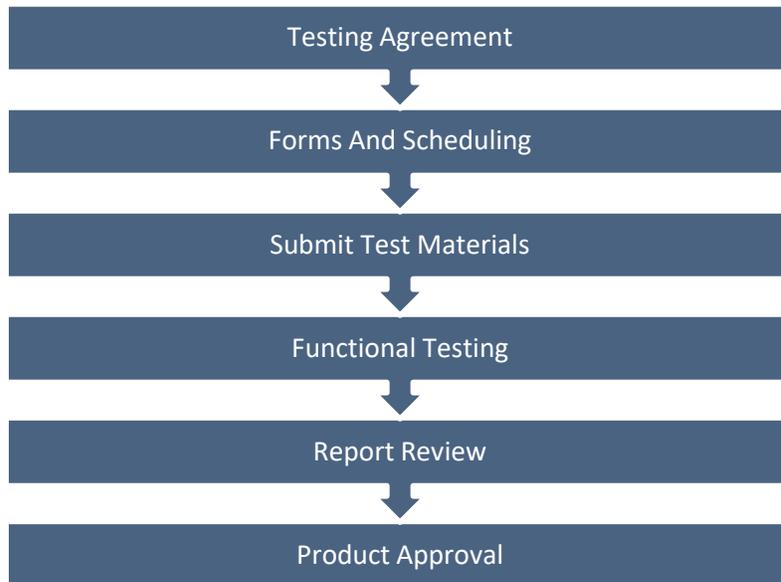
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# 1 Device Testing Overview

This section provides an overview of Visa’s testing and approval process for Contactless Device Products

**Figure 1-1: Overview of Visa Testing and Approval Process**



The testing and approval process ascertains a level of confidence that Contactless Device Products have correctly implemented Visa requirements that are defined in latest specifications. In addition, Visa may require an EMVCo approval for contactless level 1 functionality.

Device Vendors will first register on the [Visa Technology Partner](#) website and license the applicable Visa specifications.

Subsequently, Device Vendors will need to execute the Approval Services Testing Agreement (ASTA) and the Visa Cross Testing Automation Specification (VCAS).

Approval Services will review submission forms, including the Chip Card Acceptance Device Questionnaire and Implementation Conformance Statement and, if accepted for testing, issue testing authorization to the Device Vendor’s selected Visa-recognized Laboratory. It is the Device Vendor’s responsibility to liaise with the Laboratory to arrange testing.

Approval Services does not get involved with scheduling between the Device Vendor and the Laboratory.

Device Vendors submit their product with the Visa application software, PCD, supporting components, peripherals and documentation / product manuals, and submission forms to their selected Laboratory for testing.

The Laboratory will execute a set of Visa-defined test cases and prepare a test report for the Device Vendor's review, and authorization for submission to Visa for evaluation.

Visa's test report review and evaluation concludes with the issuance of a Letter of Approval (LoA) for a successful evaluation or a failure notification if product does not meet Visa's requirements.

The approval is valid globally unless restrictions are specified in the Letter of Approval (LoA).

**Note:** Approval is not transferable from one vendor's product to another.

## 1.1 EMVCo Device Testing and Approval- Contact Devices

For Contact Visa Smart Debit/Credit (VSDC):

- Visa does not require these devices to be submitted to Visa for testing and approval for contact level 1 or VSDC testing. Visa recognizes EMVCo's testing and type approval for Level 1 Interface Module (IFM) and Contact Terminal Level 2 for Contact Devices.

Visa requires Contact Devices accepting VSDC chip card products to be approved by EMVCo for both Level 1 and Level 2.

EMVCo's Contact Terminal Level 1 and Level 2 Type Approvals administrative process, specifications, and test requirements are available on EMVCo's website at <http://www.emvco.com>.

Please contact EMVCo directly for more information.

## 1.2 EMVCo Device Testing and Approval - Contactless Devices

### 1.2.1 Analog and Digital Testing

For Contactless Device Products:

- Visa requires Contactless Device Products to have obtained EMVCo's Contactless Terminal Level 1 approval prior to Visa's approval.
- Visa recognizes EMVCo's testing and approval for products developed to EMV Contactless Interface Specification – also referred to as Book D.

The following conditions must be met when performing Visa functional testing in parallel with EMVCo's Contactless Level 1 testing.

- The Visa functional testing will be null and voided if EMVCo does not approve the Level 1 testing.
- Visa will not issue a decision on the application testing until EMVCo has issued an approval.
- If an issue is found during EMVCo Level1 testing Visa functional testing will immediately stop and any results discarded.

Any cost associated with testing is the responsibility of the Device Vendor at all times EMVCo's Contactless Terminal Level 1 Type Approval administrative process, specifications, and test requirements can be found at <http://www.emvco.com>. Please contact EMVCo directly for more information.

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### 1.2.2 Entry Point and Kernel C-3 Testing

For Entry point and Kernel C-3

- Visa recognizes EMVCo's certification process for Entry Point (Book B) and Kernel C-3 (Book C-3). Visa does not require these devices to be submitted to Visa

EMVCo's Contactless Product Type Approval (Entry Point and C-3) administrative process, specifications, and test requirements can be found at <http://www.emvco.com>. Please contact EMVCo directly for more information.

## 1.3 Level 3 Testing and Approval (CDET and ADVT)

Approval Services does not manage the chip acceptance merchants or service providers (Level 3).

Details of Visa's Chip Acceptance Product Toolkits are available at the [Visa Technology Partner](#) website.

Alternatively, please contact your Visa Regional Representative for more information.

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## 2 Agreements and Licenses

To gain access to information needed to develop products according to Visa's chip technology and subsequently submit chip products for testing and approval, Device Vendors must register and obtain licenses on the Visa Technology Partner website.

Please refer to the Visa Technology Partner website for registration and licensing details.

### 2.1 Approval Services Testing Agreement (ASTA)

Device Vendors are required to execute an Approval Services Testing Agreement (ASTA) with Visa.

This agreement between Visa and the Device Vendor defines the terms and conditions governing the testing and approval process for a chip product. It also allows access to Visa's confidential and proprietary testing materials. Please contact Approval Services to initiate the testing agreement process.

### 2.2 Visa Sub-License Agreement for VCAS Verifier

Devices Vendors are required to execute a Visa Cross Testing Automation Specification (VCAS) agreement with Visa.

This agreement between Visa and the Device Vendor defines the terms and conditions for use of the VCAS verifier tool. Licensed Device Vendors who have signed the Visa Sub-License Agreement for VCAS Verifier can obtain the VCAS Verifier tool and testing materials from either the [Visa Technology Partner](#) or the library on [Visa Digital Partner Services](#).

Approval Services will initiate this agreement with the Device Vendor.

Agreements and Licenses  
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### 3 Forms and Scheduling

Submission forms are available to download from the Approval Services section of the [Visa Technology Partner](#) or the library on [Visa Digital Partner Services](#) websites.

This section discusses the form and scheduling requirements to initiate testing for a Contactless Device Product.

#### 3.1 Approval Services Questionnaire & Implementation Conformance Statement

For each product submitted for testing, the Device Vendor shall complete and email the Chip Card Acceptance Device Questionnaire and Implementation Conformance Statement (ICS) to Approval Services.

Approval Services reviews the form to determine the product's eligibility for testing, define the testing requirements, and issue testing authorization to the Laboratory.

Details in the form shall reflect final details of the product. Any changes to the form after submission may not be acceptable or result into a new test cycle. Contact Approval Services for additional details.

Table 3-1: Questionnaire/ICS Submission Process

Device Vendor	Complete the Chip Card Acceptance Device Questionnaire and Implementation Conformance Statement and sends it to Approval Services.  <b>Vendor is responsible to ensure that the questionnaire is completed accurately.</b>
Approval Services	Reviews the questionnaire. <ul style="list-style-type: none"><li>• Advises the Device Vendor if product is not eligible for testing.</li></ul> If submission is eligible and accepted, provides Device Vendor a Visa Reference Number (VTF). This will be the official identification of the product through the current cycle of testing and approval process. <ul style="list-style-type: none"><li>• Once testing requirements are determined, Approval Services will send a testing authorization to the selected Laboratory(s) and notify the Device Vendor.</li></ul>

	<b>Important Note:</b> <ul style="list-style-type: none"><li>Official Testing may not begin until Laboratory receives the Visa Reference Number (VTF) and formal testing authorization from Approval Services.</li></ul>
Device Vendor	Schedules testing and completes forms as stated in processes for <a href="#">Scheduling</a> and <a href="#">Required Forms for Testing</a> .

### IMPORTANT NOTE

If the Contactless Device Product has issues or failures during testing that would not allow for testing to be successful, or the Device Vendor would like to withdraw product from the current test cycle:

- Device Vendor and/or Laboratory must notify Approval Services immediately via email. Official testing for current test cycle shall stop.
- Device Vendor may resubmit the Contactless Device Product with fixes/rectification/changes for testing and approval. Resubmission process shall be as documented in the previous sections.
- Approval Services will authorize a new test cycle based on the eligibility of the resubmission.
- Test results from the previous test cycle cannot be used.

## 3.2 Scheduling

The Device Vendor and Laboratory are responsible for test scheduling. Visa is not responsible and does not get involved with the scheduling of testing between the Device Vendor and Laboratory.

### IMPORTANT NOTE

A Device Vendor has up to 180 days from the date Approval Services authorized the testing of a product to authorize the Laboratory to submit all test results to Visa. After 180 days Visa will not accept the results as official testing.

**Table 3–2: Overview of Scheduling**

Device Vendor	Contacts the Laboratory to schedule functional testing <sup>1</sup> . Provides all required forms for testing.
Laboratory	Provides a testing date and estimated time to complete testing.
Device Vendor	Notifies the Laboratory directly of any delay in submitting a product for testing.

### 3.3 Required Forms for Testing

Testing will not begin until the Laboratory has received all forms described in **Table 3–3**. All forms are exclusive to each test cycle, if the Contactless Device Product exits the current test cycle due to failures or withdrawals, a new set of forms must be completed and submitted for the next test cycle.

**Table 3–3: Forms Required for Testing**

<b>Form</b>	<b>Description</b>
Chip Card Acceptance Device Questionnaire and Implementation Conformance Statement	Provides configuration details of submitted product, including Visa application information, Level 1 approved PCD, and functional options supported for Visa Contactless Payment Specification (VCPS) and/or Visa Contactless Transit Kernel Specification (VCTKS).
Exhibit A Request for Testing Services <sup>2</sup>	This document includes the Exhibit A – Request for Testing Services and Request for Approval Forms.  This form describes the tests or services executed under the Approval Services Testing Agreement (ASTA).  It also establishes Visa’s right to review test reports and test results submitted by the Laboratory upon authorization by the Device Vendor.

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<sup>1</sup> It may be necessary to contact more than one Laboratory, depending on the characteristics of the device and the testing available at various Laboratories.

<sup>2</sup> Vendors that signed ASTA May 2018 onwards do not need Exhibit A. Contact Approval Services with questions

## 3.4 Testing Materials Requirements

This section lists the requirements for submission of a Contactless Device Product, in addition to the forms discussed in **Forms and Scheduling**.

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### 3.4.1 Contactless Device Product Sample Units

The Device Vendor must submit **four** complete identical sample units of the product to the Laboratory. Samples must include all components required to complete approval testing.

The Laboratory will choose and submit **two** sample units to Approval Services for review and evaluation.

Sample units must comply with the requirements below.

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### 3.4.2 Visa Specification Compliance

The Contactless Device Product must comply with a Visa Specification(s) that are valid at the time of submission, including any associated documents referenced in the specification.

The Contactless Device Product must be compliant to Visa's specifications as listed in [Appendix B<sup>3</sup>](#).

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### 3.4.3 Application Versions

The application versions, including the Visa application submitted in the Contactless Device Product must be in their final versions and must be representative of a final deployment.

All application firmware/software versions must be identical to those specified in the Questionnaire authorized for testing at the Laboratory.

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<sup>3</sup> Visa does not test proprietary or domestic applications as part of the testing process. In particular, the following are outside the scope of testing: Non-Visa Applications (e.g., cash, loyalty, coupons, refunds, etc.), and specific message formats, record layouts, and protocol handling from the Contactless Device Product to an Acquirer host system.

### 3.4.4 Device Test Environment

All submitted Contactless Device Products must be accompanied by a Terminal or Acquirer Host simulator or Software Development Kit (SDK).

The simulator must be able to (depending on the physical architecture of the product):

- Show, in a readable format, the data being sent from the contactless Reader to the Terminal or from the Terminal to the Acquirer:
  - Perform online approvals or declines for qVSDC (quick Visa Smart/Debit Credit) functionality.
  - Allows the user to review and confirm that the data elements captured from the Reader and/or Terminal are in accordance to Visa specifications.

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### 3.4.5 Operating Manual

A softcopy of the Operating Manual that describes the set-up requirements and operating procedures for the Contactless Device Product must accompany the sample units submitted at for each test cycle.

Forms and Scheduling  
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## 4 Test Documentation and Tools

Visa's Test Plans and Test Scripts are available to assist Device Vendors with their quality assurance (QA) testing prior to the official testing process. Successful completion of QA testing does not imply approval nor represents the full scope of testing required by Visa.

Visa reserves the right to develop and implement additional tests that are not part of the current Test Plan. Testing at the Laboratory may subject the Contactless Device Product to additional physical and situation specific tests as required.

### 4.1 Test Plans

Test Plans are accessible online via the Visa Technology Partner or Visa Digital Partner Services website for licensed Device Vendors.

Visa grants a Device Vendor permission to use the test plans solely for purposes of developing and testing products for a Visa application, subjected to the terms and the continued effectiveness of the applicable license agreement between the Device Vendor and Visa.

Test Plans and all intellectual property subsisting therein are the property of Visa. These materials are provided on an "as is" basis "with all faults." Visa disclaims all warranties pertaining to these materials, expressed or implied, including the implied warranties of merchantability, fitness for purposes, or non-infringement.

### 4.2 Commercial Test Tools and Test Scripts

Commercial Test Tools and Test Scripts developed to support Visa's Test Plans are available from Visa Test Tool Providers or Test Tool Vendors.

Please refer to the [Visa Test Tool Providers Contact Information](#) list available in the Approval Services test plans page on the Visa Technology Partner website or the [Approved Test Tools](#) page on Visa Digital Partner Services.

### 4.3 Enhancements and Modifications

Test Plans and Test Scripts are subject to enhancements and modifications at any time. Test Plan revisions will be accumulated and made available to Device Vendors with new releases as determined by Visa. It is the Device Vendor's responsibility to ensure that they have the most current test plan available. Device Vendors should contact their Test Tool supplier to obtain any Test Script updates.

## 4.4 Quality Assurance Testing

Laboratories performing Visa functional testing may perform Quality Assurance (QA) testing that should be completed prior to submitting a device for official testing. However, QA test results are not accepted as part of Visa's official testing and approval process.

### 4.4.1 Chip Device Questionnaire Submission for Product Changes During QA Testing

Device vendors are required to submit one final questionnaire before official type approval testing begins. Device vendors with products that have been authorized for testing are not required to submit updates to the questionnaire for each change to the product during debug or QA testing. Device vendors can update their products configuration during debug or QA testing without notifying Approval Services.

If changes are made to the product during debug or QA testing the laboratory shall evaluate the changes (including any updates made to submitted sample units) to ensure that the changes do not impact the original testing requirements.

In the event where the changes do impact the testing requirements, the laboratory and/or Vendor shall defer to Approval Services for further clarification and review.

Once the questionnaire is finalized, meaning that all questions have been answered and the information is true and accurate, Device Vendor shall send the questionnaire to Approval Services including details of the changes made to the originally authorized product. The official testing shall start only when Approval Services sends a new testing authorization upon receiving the final questionnaire.

Any questionnaire changes, product updates, or re-authorization request after official testing authorization has been issued will be considered as a new test cycle.

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## 5 Functional Testing

### 5.1 Test Goal

A goal of testing is to ensure that the Contactless Device Product is fully compliant to the Reader Requirements in the Visa Contactless Payment Specification (VCPS) and/or Visa Contactless Transit Kernel Specification (VCTKS).

### 5.2 Test Cycle

A Test Cycle is a set of applicable Test Scripts that are to be executed on a single version of the Contactless Device Product during Visa's testing process.

A successful Test Cycle is defined as completion of all the executed Test Scripts with no failures.

### 5.3 Test Scope

A Contactless Device Product is tested according to the Visa Contactless Payment Specification (VCPS) and/or Visa Contactless Transit Kernel Specification (VCTKS) version and functionalities declared in the Implementation Conformance Statement (ICS). Product will be tested with Test Scripts that are based on the latest applicable versions of the qVSDC Contactless Reader Test Plan, MSD Contactless Reader Test Plan and/or VCTKS Reader Test Plan.

Testing focuses solely on Visa's contactless application and supporting components that impact the application.

### 5.4 Test Scope Exclusions

The following are excluded from the Functional Testing scope:

- Components and firmware/software, including proprietary software that exists in the product.
- Regional requirements, e.g. Visa Europe's requirements. Please contact a regional Visa Representative for more information.

## 5.5 Interoperability Testing

Also known as Cross Testing is intended mitigate the risk of interoperability issues with approved Visa contactless cards that are already issued, the Contactless Device Product will undergo interoperability testing where it will be evaluated for successful communication with a set of Visa approved cards.

Test results will be reviewed and evaluated as part of the approval process.

Contactless Device Products that fail to communicate with tested card products may not be eligible for approval.

## 5.6 Sharing Test Results

Device Vendors who have signed the Approval Services Testing Agreement (ASTA) have the opportunity to leverage functional test reports from previously approved products.

If a Contactless Device Product shares test results from an approved product, if approved it will be an additional listing on the Approved Products List. The request to share test results is not guaranteed until Approval Services has reviewed the submitted Chip Card Acceptance Device Questionnaire and Implementation Conformance Statement and granted permission.

### **IMPORTANT NOTE**

- If Visa discovers a defect or issue with the product whose test results are being shared, all Device Vendors involved in the sharing will consent to Visa's communication of all relevant information, including nature of the defect/issue and affected products, to each affected Device Vendor and its customers.
- The ASTA owner of the parent product and all Device Vendors involved in the sharing have given an official authorization or agreement (where applicable) to allow the product details and corresponding test results to be shared.
- The approval of the parent product has no known issues:
  - The leveraged Visa approval (Letter of Approval) does not have any technical comments
  - The leveraged EMVCo Level 1 approval is not expired or restricted
- The components leveraged are not already sharing test results from another product.

The newly approved product will:

- Share the same expiration date as the parent product.

- Be subjected to revocation if the approval of the parent product is revoked.
- May be subjected to additional testing, as determined by Visa, if the parent product is modified or updated.

## 5.7 Visa Contactless Payment Testing

Visa Contactless Payment allows Contactless Device Products to perform a Visa payment transaction over radio frequency (Type A and Type B).

A Contactless Device Product may be submitted for testing in one of the following configurations: Proximity Coupling Device with Application (PCDA) or Proximity Coupling Device Integrated (PCDI).

## 5.8 Visa Contactless Transit Kernel Testing

Contactless Device Products implemented to support Visa Contactless Transit Kernel Specification (VCTKS) is required to use the VCTKS Test Plan.

As a product developed to VCPS may not be appropriate for use in transit environment, the VCTKS specification provides requirements and recommendations for transit kernels to ensure that transit terminals can meet the needs of transit acceptance.

## 5.9 Scope Testing and Approval – Contactless

Visa's testing encompasses requirements defined in Visa Contactless Payment Specification (VCPS) and/or Visa Contactless Transit Kernel Specification (VCTKS) including all update lists to the specification and any associated documents referenced within the specification.

The Contactless Device Product will be tested to ensure that the Visa payment application complies with the requirements in Visa's specification. The analog and digital processing will be tested to ensure that it complies with the associated contactless specification referenced within Visa's specification. These requirements are mandatory whether the component supports any Visa application or whether it is only a contactless reader.

Any changes to the antenna or to the firmware and software that operate the approved Contactless Device Product would negate Visa's approval. The Device Vendor would be required

to resubmit the product to Visa and/or EMVCo for testing and approval. See section [Changes to Previously Approved Device](#) for details.

## 5.10 PCDA (Single Component Intelligent Card Reader as defined by EMVCo)

Proximity Coupling Device with Application (PCDA) or S-ICR contains all the components to perform a payment transaction (i.e. qVSDC or qVSDC and MSD applications with the contactless interface) with the exception of Merchant/Consumer Interfaces or Network Interface.

Any additional integration testing between the Intelligent Reader and the Terminal will be managed through the globally mandated CDET (Contactless Device Evaluation Toolkit) during User Acceptance/End to end testing. Please contact your regional representative for any local testing requirements.

## 5.11 PCDI (Fully Integrated Terminal (FIT) as defined by EMVCo)

Proximity Coupling Device Integrated (PCDI) supports qVSDC only or qVSDC and MSD application.

PCDI is a terminal with an Integrated Contactless Reader.

## 5.12 Combination Devices and Multiple Component Intelligent Card Readers (M-ICR)

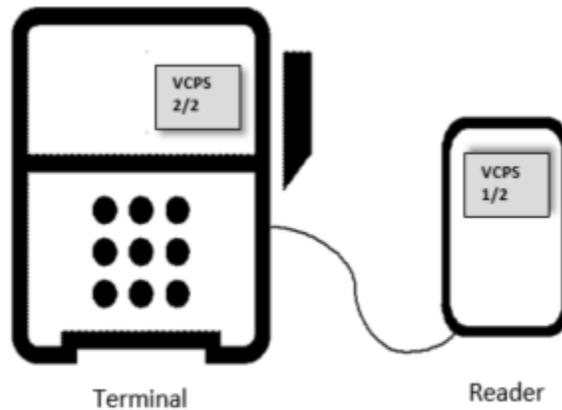
Other types of terminal implementations include Combination Devices and Multiple Component ICR's. Combination Devices are defined as a terminal supporting an external reader, where the terminal contains the entire kernel for processing VCPS while the external reader only supports hardware and firmware related to the PCD reader. Other software may be contained on the hardware of the PCD, but is not related to VCPS kernel (e.g. contact kernel).

An M-ICR exists when the product is composed of two or more components and the VCPS kernel is divided amongst multiple components. (i.e. a device consists of a terminal and external

reader with a portion of the VCPS kernel on the terminal and another portion of the VCPS kernel on the external reader).

The approval, provided by Visa, is based on the category of device (PCDA, FIT, Combo, etc.).

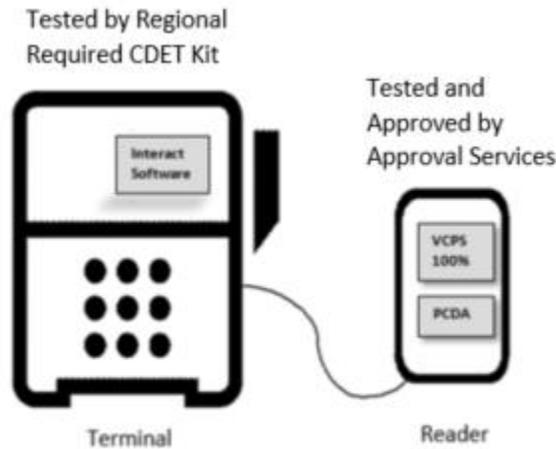
Figure 5–1: Multiple Component Intelligent Card Reader (M-ICR/PCDA) connected to another device (e.g. terminal)



The following are required to be submitted with the vendor's product:

- All appropriate equipment and peripherals to operate and test the Reader (power cables, PC cables, Terminal/ Host simulator software)
- Terminal/ Host simulator software must include clear instructions and provide capability to configure and operate the Reader.
- The software must also be able to capture and display the data sent by the Reader (cryptogram information, Track 1/ Track 2 for qVSDC and/or MSD data according to Reader's capabilities) and simulate Host authorization (e.g. approval/ decline) for online transactions.

Figure 5–2: Testing and Approval for ICR (PCDAs) Compliant to the Visa Contactless Reader Implementation Notes



## 5.13 Laboratory Test Results

Upon completion of Functional Testing and/or Interoperability Testing, Laboratory will submit an official report outlining the test results to the Device Vendor. The Device Vendor is required to authorize the Laboratory to release the complete report to Approval Services' for review and approval consideration.

### **IMPORTANT NOTE:**

- Laboratories are required to submit all test results to Approval Services within 180 days from the official Testing Authorization.
- Laboratories are not permitted to disclose details or information that identifies the test card products and/or card manufacturer for Interoperability Testing results to Device Vendors.

There are two possible outcomes from the testing of a Contactless Device Product:

### **1. Card Acceptance Device Fails Testing**

The Laboratory sends a report to the Device Vendor identifying the Visa Contactless Payment Application tests that failed and the reasons for the failures. Laboratories cannot reveal details about the chip cards used during interoperability testing to the Device Vendors.

The Device Vendor can choose to resubmit a failed product for a new test cycle with the following steps:

- Rectify the identified issues.
- Complete a new Chip Card Acceptance Device Questionnaire and Implementation Conformance Statement form with details of the changes made and submit to Approval Services for review and testing authorization.
- Contact the Laboratory for scheduling a new test cycle.
- Complete and submit a new set of forms listed in section [Required Forms for Testing prior to starting the new test cycle](#).
- [Submit a new set of sample units as listed in section Submit Testing Materials](#).

## **2. Card Acceptance Device Passes Testing**

The Laboratory sends a final test report to the Device Vendor for review. This report shall exclude details about the cards that were used in Interoperability Testing.

The Device Vendor reviews the results to determine if they wish to submit the results to Approval Services for review.

The Device Vendor completes and signs the Exhibit A Request for Testing Services form (if needed) and provides it to the Laboratory. The form authorizes the Laboratory to send an electronic copy of the final report to Approval Services for review.<sup>4</sup>

A vendor has 180 days from the testing authorization date to complete all testing and submit test results to Approval Services. If applicable, all test samples for Interoperability Testing must be submitted within reasonable timeframe so that testing can be completed within the 180 days from the testing authorization date.

If the validity period and Approval Services review is required, application retesting is required to create a most current test report for submission.

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<sup>4</sup> Vendors that signed ASTA May 2018 or newer do not need an Exhibit A. Contact Approval Services with questions

Functional Testing  
Chip Card Acceptance Device Testing and Approval Requirements

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## 6 Approval Process

This section describes the processes and rules governing the approval of a Visa-branded payment chip card product.

### 6.1 Legal Conditions and Restrictions

Visa's approval only applies to products that are identical to the product tested by Visa or one of Visa's recognized laboratories. A product may not be considered approved by Visa, nor promoted as approved, if any aspect of the product is different from that which was tested by a laboratory or by Visa, even if the product conforms to the basic product description contained in the Letter of Approval (LoA). For example, even though a product contains applications or operating systems that have the same name or model number as those tested by one of Visa's recognized laboratories or by Visa, but the product is not identical to the features previously tested by one of Visa's recognized laboratories or by Visa, the product should not be considered or promoted as approved by Visa.

Visa's approval is granted solely in connection with a specific product and to the submitting vendor. Such approval may not be assigned, transferred or sublicensed, either directly or indirectly, by operation of law or otherwise. Only vendor(s) that receive a Visa approval for a chip card acceptance device product may state that they have the approval.

No manufacturer, chip supplier, or other third party may refer to a product, service or facility as "Visa-approved," nor otherwise state or imply that Visa has, in whole or in part, approved any aspect of a manufacturer, or supplier, or its products, services or facilities, except to the extent and subject to the terms and restrictions expressly set forth in a written agreement with Visa, or in a Letter of Approval provided by Approval Services. All other references to Visa approval are strictly and actively prohibited by Visa.

When granted, Visa approval is provided by Visa to ensure certain security and operational characteristics important to Visa's systems as a whole, but does not, under any circumstances, include any endorsement or warranty regarding the functionality, quality or performance of any particular product or service. Visa does not warrant any products or services provided by third parties. Approval does not, under any circumstances, include or imply any product warranties from Visa, including, without limitation, any implied warranties of merchantability, fitness for purpose or non-infringement, all of which are expressly disclaimed by Visa. All rights and remedies regarding products and services which have received Visa approval shall be provided by the party

providing such products or services, and not by Visa. Unless otherwise agreed in writing by Visa, all property and services contemplated in this document, which Visa provides to any third parties, are provided on an “as-is” basis, “with all faults” and with no warranties whatsoever. Visa specifically disclaims any implied warranties of merchantability, fitness for purpose or non-infringement.

The issuance of the approval letter is conditioned upon the vendor having executed all necessary agreements, including without limitation, the applicable license agreements with Visa, and shall be of no force and effect unless such agreements have been executed contemporaneously with or prior to the issuance of the approval letter.

Visa performs limited testing to ascertain a product’s compliance with any required specifications and may perform interoperability testing with other approved products. Visa’s limited testing program is not designed to establish the functionality of an approved product in all potential conditions in which it may be used. Visa’s approval does not in any circumstances include or imply any guarantees, assurances or warranties that the approved product will operate in all possible settings or in connection with any other approved product.

## 6.2 Visa Approved Products List

Upon successful completion of official testing and approval, the Contactless Device Product will appear on the Visa Approved Chip Card Acceptance Devices List, both on the Visa Technology Partner and Visa Digital Partner Services websites. The Letter of Approval (LoA) from Approval Services qualifies the product as an approved Visa product.

Approval Process  
Chip Card Acceptance Device Testing and Approval Requirements

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## 7 Renewal of a Contactless Device Product

This section describes the requirements and process of renewing the approval of a Contactless Device Product.

### 7.1 Renewal Criteria

Contactless Device Products are eligible for renewal if they meet all the following criteria:

- Complies with Visa's supported versions of specifications and requirements as described in Appendix B.
- The Letter of Approval (LoA) does not contain Approval Comments, e.g. specification deviations or items identified during testing that should be rectified in the next version of the product.
- Successfully completes any required additional testing.

EMV Contactless Level 1 Letter of Approval (LOA) should still be valid and not expired at the time of renewal.

### 7.2 Renewal Process

When a Contactless Device Product is approved by Visa, it is assigned an approval expiration date which is communicated to the Device Vendor in the Letter of Approval and also appears on the Visa Approved Products List.

Unless otherwise noted, the expiration date is four years from the date of approval. Derivative products leveraging a parent product inherit the parent product's expiration date. Derivative Products may be renewed if a parent product has expired.

As the Contactless Device Product approaches its approval expiration date, Visa will review the product details for compliance to all current Visa policies, including the VCPS and/or VCTKS specifications that Visa continues to support.

Approval Services will determine if a Contactless Device Product is eligible for renewal based on the renewal criteria listed in section [Renewal Criteria](#).

Approval Services will contact the Device Vendor 6 months prior to the approval expiration date. The Device Vendor will need to confirm via email to Approval Services that they wish to renew their Contactless Device Product so that it remains as approved by Visa, is still supported in the field and meets Visa's current renewal policy. When Approval Services receives this confirmation email, the approval is extended for an additional 4 years to align with EMVCo's renewal policy. The Letter of Approval will not be reissued, but the change in the approval expiration date will be reflected in Visa Approved Chip Card Acceptance Devices List.

### 7.3 General Conditions and Exceptions

If a Contactless Device Product does not meet the renewal criteria outlined in section [Renewal Criteria](#).

- The Device Vendor will not be notified that the product is not eligible for renewal.
- The Contactless Device Product will be removed from the Visa Approved Chip Card Acceptance Devices List the month following the approval expiration date.

Renewals are linked to the conditions contained in the Letter of Approval sent to the Device Vendor. If problems are identified with an approved product Visa may revoke the approval. Visa reserves the right to revoke the approval at any time.

Visa reserves the right to amend this policy without prior notice. The effective date of any such change will be communicated to Visa personnel and Device Vendors.

Renewal of a Contactless Device Product  
Chip Card Acceptance Device Testing and Approval Requirements

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## 8 Changes to Previously Approved Contactless Device Products

Device Vendors may make certain changes to a Contactless Device Product on the Visa Approved Chip Card Acceptance Devices List (see sections below for qualified changes). The Contactless Device Product must be currently approved and has completed all required testing, and the Letter of Approval must not contain any comments or specification deviations.

To initiate a change request, the Device Vendor must submit a Chip Card Acceptance Device Questionnaire and Implementation Conformance Statement to Approval Services. After testing and review is complete, a new approval will replace the original approval on the Visa Approved Chip Card Acceptance Devices List.

**Note:** Device Vendors that have received a Letter of Approval from Visa that identified in the comment/specification deviations section issue(s) that must be corrected in the next version of the product submitted for testing may not use the process outlined in this section to make changes to the approved product.

### 8.1 Proprietary Application

The change is to add/change proprietary application(s) on a previously approved product. The Device Vendor intends that the original product will no longer be supported as approved. The original approval will then be revoked, and a replacement Letter of Approval issued. The product that was approved and appears on the Visa Approved Chip Card Acceptance Devices List will have different components than were originally tested.

**Note:** Visa does not test or approve proprietary applications or applets but must ensure that changes being made to the product do not negatively impact the application approved by Visa.

## 8.2 Application Porting

Application porting is taking the approved VCPS or VCTKS kernel onto another approved device. The Device Vendor must not have made changes to the approved Visa application and must not add new components to the product. Application Porting may occur when the following items remain true:

- Application is ported across the same OS (i.e. Windows 10 to Windows 10)
- VCPS Kernel must remain the same (no software or functional changes permitted)
- Application is ported across same terminal configuration (i.e. from a FIT to another FIT)
- The Checksum value of the application shall remain the same. See **Visa Application Kernel Checksum** requirements in Appendix C.1

Changes to Previously Approved Contactles  
Chip Card Acceptance Device Testing and Approval Requirements

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## 9 Changes That Require Full Testing

Certain changes to an approved Contactless Device Product require full testing, as described in Section 2 Device Testing Overview. The Device Vendor may update/change the original product with the intent that the original product will no longer be supported as approved. Alternatively, the Device Vendor may intend to support both the existing product and the new product being submitted. The list below is not exhaustive but provides examples of commonly questioned scenarios.

If a Device Vendor wants to make a change that is not listed below, Approval Services should be contacted to help determine which process they may utilize.

**Note:** *Device Vendors that have received a Letter of Approval from Visa that identified in the comments section issue(s) that must be corrected in the next version of the product submitted for testing must correct the identified issue(s) during submission of the changed product.*

**Table 9–1: Changes That Require Full Testing**

Change Requiring Full Testing	Description
Operating System (OS) Changes	Adding, deleting, or modifying code in the Operating System that directly impacts the functionality of the device.
EMV Level 1 Contact Changes	Modifications that affect the electrical and protocol characteristics. Contact EMVCo for more details.
Visa Payment Application Changes	Any changes that impact or interact with the Visa application.
Analog/Digital Changes	Modifications to a contactless terminal or reader that affect the magnetic field, protocol, and anti-collision aspects. Contact EMVCo for more details.

Changes That Require Full Testing  
Chip Card Acceptance Device Testing and Approval Requirements

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## A Appendix A – Revision History

Version	Date	Description
6.0	April 2021	Corrections, clarifications, and updates.
5.0	July 2018	New structure, Updates to Test Requirements Clarifications and updates

## B Appendix B- Specifications and Requirements

This appendix lists specification and requirements that apply to the devices tested by Laboratories and indicate where each may be obtained.

### B.1 Visa Contactless Payment

Devices that support Visa Contactless Payments must support the Visa Contactless Payment Specification listed below. EMV Level 1 Specifications for Payment System are required to develop the analog and digital functionality required by Visa.

Table B-1: Specifications for Visa Contactless Payment

<b>Specification</b>	<b>Available Through:</b>
Visa Contactless Payment Specification	<a href="https://technologypartner.visa.com/">https://technologypartner.visa.com/</a>
Chip Bulletin 16 - Specifications and Applets – Availability and Sunsetting	<a href="https://technologypartner.visa.com">https://technologypartner.visa.com</a>
EMV Level 1 Specifications for Payment Systems -EMV Contactless Interface Specification)	<a href="http://www.emvco.com">www.emvco.com</a>

## B.2 Visa Contactless Transit Kernel Specification

Devices that support Visa Contactless Transit Kernel must support the Specifications listed below. EMV Level 1 Specifications for Payment System are required to develop the analog and digital functionality required by Visa.

Table B-2: Specifications for Visa Contactless Transit Kernel

<b>Specification</b>	<b>Available Through:</b>
Visa Contactless Transit Kernel Specification	<a href="https://technologypartner.visa.com/">https://technologypartner.visa.com/</a>
Visa Contactless Payment Specification	<a href="https://technologypartner.visa.com/">https://technologypartner.visa.com/</a>
Chip Bulletin 16 - Specifications and Applets – Availability and Sunsetting	<a href="https://technologypartner.visa.com">https://technologypartner.visa.com</a>
EMV Level 1 Specifications for Payment Systems -EMV Contactless Interface Specification	<a href="http://www.emvco.com">www.emvco.com</a>

Appendix B- Specifications and Requirements  
Chip Card Acceptance Device Testing and Approval Requirements

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## C Appendix C - Testing Requirements

This appendix lists the Testing Requirements for Contactless Device Products. The list below is not exhaustive, but it provides examples of commonly submitted change requests. If a Vendor wants to make a change that is not listed below, they should contact Approval Services to determine which process the Device Vendor may utilize.

**Table C-1: Testing Requirements Matrix for Base Product**

This table defines the requirements for the base product. A Base product is the Parent product that is coming in for a new submission. All derivatives will descend from a base product. It is recommended that the product/model with the most enabled VCPS functionalities to be submitted as a base product.

#		Contactless L1 Testing	Application Testing	Cross Testing	Comments
1	Base Product	EMVCo CL L1 LOA required	Full	Full	New product

Appendix C - Testing Requirements  
Chip Card Acceptance Device Testing and Approval Requirements

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**Table C-2: Testing Requirements Matrix for Derivatives or Changes**

This table defines the acceptable changes for a Base Product to be eligible as a derivative. The list below is not exhaustive but provides examples of commonly submitted change requests. If a Vendor wants to make a change that is not listed below, they should contact Approval Services to determine which process the Vendor may utilize.

#	Change / Derivation	Contactless L1 Testing	Application Testing	Interoperability	Other Testing	Comments
2	Level 1 Analog Firmware and/or Digital Software Change	EMVCo PCD Level 1 LOA required	None	Full	None	
3	Add/ Remove proprietary protocol	EMVCo PCD Level 1 LOA required	None	Full	None	
4	PCB Change	EMVCo PCD Level 1 LOA required	None	Full	None	
5	Antenna Design	EMVCo PCD Level 1 LOA required	None	Full	None	
6	Antenna Materials	EMVCo PCD Level 1 LOA required	None	Full	None	

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7	Antenna Location	EMVCo PCD Level 1 LOA required	None	Full	None	
8	IFM Replacement		None	Full	EMVCo IFM Level 1 LOA required	IFM and PCD reside on the same device
9	IFM Firmware Change		None	Full	EMVCo IFM Level 1 LOA required	IFM and PCD reside on the same device
10	Porting Approved PCD	EMVCo PCD Level 1 LOA required	None	None		
11	Replace existing Operating System (OS)	EMVCo PCD Level 1 LOA required	Full	Full		This is considered as a new product
12	Replace existing Operating System (OS) Visa Application Kernel Checksum is present	EMVCo PCD Level 1 LOA required	Regression	None		No recompilation of the Kernel. Checksum is identical to original product.
13	Update existing Operating System (OS)	EMVCo PCD Level 1 LOA required	Regression	None		

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14	Update existing Operating System (OS) Visa Application Kernel Checksum is present	EMVCo PCD Level 1 LOA required	None	None		No recompilation of the Kernel. Checksum is identical to original product.
15	New Visa Application Kernel	EMVCo PCD Level 1 LOA required	Full	Full		This is considered as a new product
16	Update Visa Application Kernel	EMVCo PCD Level 1 LOA required	Full or Regression	Full or None		Testing is determined based on functional impact of update
17	Add Non-Visa Application	EMVCo PCD Level 1 LOA required	Regression	None		
18	Add Non-Visa Application Visa Application Kernel Checksum is present	EMVCo PCD Level 1 LOA required	None	None		No recompilation of the Kernel. Checksum is identical to the original product.
19	Update Non-Visa Application	None	Regression * or None	None		Testing is required if there were shared library dependencies.

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Chip Card Acceptance Device Testing and Approval Requirements

20	Update Non-Visa Application Visa Application Kernel Checksum is present	None	None	None		No recompilation of the Kernel. Checksum is identical to the original product.
21	Remove Non-Visa Application	None	Regression * or None	none		*Testing is required if there were shared library dependencies.
22	Remove Non-Visa Application Visa Application Kernel Checksum is present	None	None	None		No recompilation of the Kernel. Checksum is identical to the original product.
23	Casing Change Model Label Change Only	EMVCo PCD Level 1 LOA required	None	None		Only model rebrand. Original casing unchanged – no modifications to IFM, PCD, antenna placement, landing plane placement, etc.
24	Casing Change Landing Plane Change	EMVCo PCD Level 1 LOA required	None	Full		

Appendix C - Testing Requirements  
Chip Card Acceptance Device Testing and Approval Requirements

25	Casing Change New Material: Metallic	EMVCo PCD Level 1 LOA required	None	Full		
26	Casing Change New Material: Non- metallic	EMVCo PCD Level 1 LOA required	None	None		
27	Add New Interface Contact and/or Magstripe	EMVCo PCD Level 1 LOA required	Delta	Full	EMVCo IFM Level 1 LOA required	Full Cross Testing is required if a new interface is added to the Terminal or Reader where the PCD resides.
28	Remove Other Interface Contact and/or Magstripe	None	Delta	None		
29	Replace Existing Interface Contact and/or Magstripe	None	None	None	EMVCo IFM Level 1 LOA required	Interface approved in original product. Landing plane is unchanged and not impacted.
30	Rebranded Terminal	None	None	None		LOA should exist from original terminal
31	Connector Change	None	None	None		

Appendix C - Testing Requirements  
Chip Card Acceptance Device Testing and Approval Requirements

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32	Adding VCTKS	EMVCo PCD Level 1 LOA required	Full	None		Cross Testing is required if new PCD
33	Updating existing VCTKS	EMVCo PCD Level 1 LOA required	Full	None		Cross Testing is required if new PCD

## C.1 Visa Application Kernel Checksum

A Visa Application Kernel Checksum value is mandatory for all Visa Kernels. It is to ensure stability and helps identify a product change. This section describes the implementation and submission requirements for Visa Application checksum.

### C.1.1 Implementation Requirements for Visa Application Kernel Checksum

The Visa Kernel module shall have a unique Checksum.

The Checksum computation of the Visa Kernel module shall include:

- All requirements corresponding to the Visa Contactless Payment Specification (VCPS) and/or Visa Contactless Transit Kernel Specification (VCTKS) of the Visa Kernel module.
- The Terminal Transaction Qualifier (TTQ) to include only the TTQ static bits.

If the Visa Kernel module implementation is based on several software modules (example: external routers, libraries, etc.):

- Each software module shall have a unique Checksum
- In this case the Visa Kernel module Checksum shall be the Checksum computation over ALL software module checksum value
- Any changes in a software module shall generate a new unique Checksum value of the changed software module
- The Checksum generation algorithm shall generate a unique value each time a software module is changed. The method or algorithm for checksum generation is left to the discretion of the Device Vendor
- The Chip Acceptance Device shall contain a software mechanism that easily retrieves the Checksum values of all related software modules when these are loaded in the Device
- When used, the software mechanism shall dynamically compute the Visa Kernel module Checksum

### C.1.2 Submission Requirements for Visa Application Kernel Checksum

All Device Vendors are required to submit the Visa Application Kernel Checksum and all Checksum related details.

- The Chip Acceptance Device Questionnaire/ICS (CDQ/ICS) submission shall include:
  - The Visa Application Kernel Checksum Value
  - The unique Checksum of each software module, if the Visa Kernel implementation is based on several software modules
  - The algorithm used by the software mechanism is generate the Checksum(s)
- The Chip Acceptance Device shall contain a software mechanism that:
  - Retrieve the unique Checksum of each software module for a Visa Kernel implementation that is based on several software modules
  - Dynamically computes the Visa Application Kernel Checksum

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### C.1.3 Changes to Checksum Values

Once authorized, all declared Checksum values shall not change:

- It is a major change if a declared Checksum value changes
- Device vendor is responsible to inform Approval Services by resubmitting their questionnaire for a new test cycle

All Device Vendors are required to submit the Visa Application Kernel Checksum and all Checksum related details.

## C.2 VCAS Interface Requirements

As of June 1, 2018, Device vendors are required to submit new baseline Chip Acceptance Device products and subsequent derivatives with the Visa Cross testing Automation Specification (VCAS) implemented into their SDK. VCAS defines the interface communication and the requirements for building the communication between the robot controller and the SDK. The requirements for the VCAS can be found in the SDK Interface Standardization Guideline for Automated Device Cross Testing. This document contains the VCAS functions and their requirements to allow a successful automated cross-testing process with the test laboratory robot systems

Visa encourages all device vendors to utilize the VCAS Verifier Tool before submitting a product to the laboratories. The VCAS Verifier Tool produces a VCAS Verifier Report that will be submitted to the laboratories along with the device. The report will indicate non-compliance to the VCAS. Laboratories review the VCAS Verifier Report and notify Approval Services of any failures before start of testing. If failures are indicated in the report, Approval Services will analyze and determine if testing will resume. Licensed Device vendors who have signed the Visa Sub-License Agreement for VCAS Verifier can obtain the VCAS Verifier tool from [Visa Technology Partner](#) or the library on [Visa Digital Partner Services](#) websites.

## C.3 Paper Approvals

Paper Approvals are granted to derivative Chip Acceptance Device products that meet the following conditions:

1. The original product has a valid approval with no Technical or Informational Comment for both EMVCo PCD Level 1 and Visa's Letter of Approval.
2. Product is physically identical to the original product. For example, derivative is the exact same product model as the parent.
3. Product is logically identical to the original product. For example, it contains the same PCD analog firmware and digital software, and Level 2 Visa Application kernel. Checksum of the Visa Application, if present, shall be identical to the original product.

If the conditions above are met, the derivative is eligible for Paper Approval and is not required to undergo any forms of testing.

Any differences from the original product shall be indicated in the Chip Card Acceptance Device Questionnaire and Implementation Conformance Statement.

Appendix C - Testing Requirements  
 Chip Card Acceptance Device Testing and Approval Requirements

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The Chip Card Acceptance Device Questionnaire and Implementation Conformance Statement will be reviewed in accordance to the standard process to determine if product is eligible for Paper Approval or if testing is required.

Visa determines eligibility for a Paper Approval on a case-by-case basis.

Vendor is required to send to Approval Services the Exhibit A Request for Testing Services form.

**Table C-3: Test Matrix for Paper Approvals**

The following table is a test matrix for the common Paper Approval derivative scenarios. Please contact Approval Services for eligibility for Paper Approval.

#		Contactless L1 Testing	Application Testing	Cross Testing	Other Process	Minimum Condition
1	Rebranding Label for Marketing	EMVCo PCD Level 1 LOA required	None	None	Paper Approval	Identical to original approved product
2	Rebranding Reseller Approval Request	EMVCo PCD Level 1 LOA required	None	None	Paper Approval	Identical to original approved product

## C.4 Visa Application Kernel Porting for Range of Devices

This section defines the requirements for submission of a derivative range for the family of products. This section is divided into the two parts that covers the different scenarios for submission. Devices must be compliant to the application porting rules that are described in Section 8.2

### C.4.1 Visa application kernel porting to a new PCD

The following features must be identical for each submission

- Platform
- Operating Systems
- Software Architecture

**Table C-4: Requirements for Visa Application Kernel Porting**

The following table describes the different types of scenarios for each submission containing a Visa application kernel porting for range of devices. These requirements are supplied for derivatives based on an approved baseline product.

- Each product variant has its own EMVCo PCD Level 1 approval

Submission Type	Contactless L1 Testing	Application Testing	Cross Testing	Other Process	Comments
First Derivative	EMVCo PCD Level 1 LOA required	Regression VCPS	Full	None	Base product approved with no known issues.
Second Derivative	EMVCo PCD Level 1 LOA required	None	Full	None	Base product approved with no known issues.
Nth Derivative	EMVCo PCD Level 1 LOA required	None	Full	None	Base product approved with no known issues.

### C.4.2 Updated Visa Application Kernel

Submission that contain an updated Visa Application Kernel must consist of the following requirements

- Each variant has its own valid EMVCO PCD Level 1 approval and existing Visa Letter of Approval.
- The previous approval on each variant has no known issues.
- The only change on each variant is the Visa Application Kernel.

The following requirements must be identical for each submission for an updated Visa application Kernel

- Platform
- Operating Systems
- Software Architecture

Examples of updates

- Same version specification updates e.g. VCPS 2.1.3 Update List 1 to Update List 2
- Bug fixes on original kernel

**Table C-5: Requirements for updated Visa Application Kernel Porting**

The following table describes the different types of scenarios for each submission containing an updated Visa application kernel porting:

Submission Type	Contactless L1 Testing	Application Testing	Cross Testing	Other Process	Samples	Comments
Base		Full VCPS	None *		4 samples	*maybe required based on functional changes
First Derivative	EMVCo PCD Level 1 LOA required	None	None	Paper Approval	None	Base product approved with no known issues.

Second Derivative	EMVCo PCD Level 1 LOA required	None	None	Paper Approval	None	Base product approved with no known issues.
Nth Derivative	EMVCo PCD Level 1 LOA required	None	None	Paper Approval	None	Base product approved with no known issues.

## C.5 Products Supporting Offline Data Authentication (ODA) for Online qVSDC

A Contactless Device Product that is implemented to support the ODA for qVSDC online request function according to Visa ODA for qVSDC Online Specification (VOQOS) is required to be tested with the Test Plan for Visa ODA for qVSDC Online Specification.

The Visa ODA for qVSDC Online Specifications (VOQOS) is an add-on to the current Visa Contactless Payment Specification (VCPS) to define the optional function that allows the terminal to perform offline data authentication for a qVSDC online approval request.

The function is currently not defined within the scope of Visa Contactless Payment Specification (VCPS).

### C.5.1 Requirements for Visa ODA for qVSDC Online Specifications (VOQOS) Approval Submissions:

The following are mandatory testing and approval submission requirements for Contactless Device Products developed to the Visa Offline Data Authentication (ODA) for qVSDC Online Specifications (VOQOS):

- Product's Terminal Transaction Qualifiers (TTQ) shall be configurable to enable or disable the support of the ODA for qVSDC online function
- The Product performing Data Authentication for Online Authorization must be able to indicate:
  - Data Authentication has been performed
  - Type of Data Authentication performed (fDDA or SDA)
  - The outcome of the Data Authentication (Pass or Fail)

- The method of indicating the required information is up to the Device Vendor's implementation
- Documentation with clear instructions or procedures to identify and determine the required information must be provided

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### **C.5.2 Testing requirements for products submitted for Visa ODA for qVSDC Online Specifications (VOQOS):**

Contactless Device Products implementing the function according to the Visa ODA for qVSDC Online Specifications (VOQOS) for the first time shall complete Functional Testing as follows:

- Full scope of the Visa Contactless Payment Specification (VCPS) Test Plan with the function disabled (TTQ Byte 1 Bit 1 = '0b')
- Full scope of the Visa ODA for qVSDC Online Specification Test Plan with the function enabled (TTQ Byte 1 Bit 1 = '1b'). The Visa ODA for qVSDC Online Specifications (VOQOS) test scope also includes a set of Visa Contactless Payment Specification (VCPS) test cases that will be tested with the function enabled.

Subsequent Visa Contactless Payment Specification (VCPS) device products implementing the function according to Visa ODA for qVSDC Online Specifications (VOQOS) as a derivative (sharing test results or changing of an approved product) shall complete Functional Testing as follows:

- Full scope of the Visa Contactless Payment Specification (VCPS) Test Plan was tested and approved on the parent product with the function disabled (TTQ Byte 1 Bit 1 = '0b').
- Full scope of the Visa ODA for qVSDC Online Specifications (VOQOS) Test Plan with the function enabled (TTQ Byte 1 Bit 1 = '1b'). The test scope also includes a set of Visa Contactless Payment Specification (VCPS) test cases that will be tested with the function enabled.

Actual testing requirements will be determined based on the details in the submitted questionnaire & ICS.

Appendix C - Testing Requirements  
Chip Card Acceptance Device Testing and Approval Requirements

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## D Appendix D - Testing Availability by Laboratory

**Note:** *The Laboratory establishes the pricing for testing.*

Please contact an appropriate Laboratory for current pricing and contractual agreements, and to obtain information on scheduling testing.

Information on what testing is available at Visa-recognized laboratories and how to contact them can be found on either of the Approval Services websites.

Refer to EMVCo's website for a list of laboratories that perform testing for the EMVCo Analog & Digital, Entry Point and Kernel 3.

Appendix D - Testing Availability b  
Chip Card Acceptance Device Testing and Approval Requirements

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## Glossary

This appendix defines selected terms used in this document.

Agreements	See section <a href="#">Approval Services Testing Agreement (ASTA)</a> .
Analog Testing	For devices supporting contactless cards: Ensures that the magnetic field characteristics can carry the communication.
Application Testing	Ensures that the device correctly supports the functionality of the Visa payment transaction. Includes Cross Testing.
Digital Testing	For devices supporting contactless cards: Ensures that the timing, anti-collision, and protocol characteristics can carry the communication.
EMV	EMV Integrated Circuit Card Specifications for Payment Systems, developed by EMVCo.
EMV Level 1	EMV Level 1 testing addresses the mechanical, electrical and protocol aspects of the interface module of the card acceptance device.
EMV Level 2	EMV Level 2 testing addresses the application kernel.
EMVCo	A consortium comprised of American Express Company, China UnionPay, Discover Card, JCB International, MasterCard International, and Visa Inc that manages, maintains, and enhances the EMV Integrated Circuit Card Specifications for Payment Systems.
Exhibit A Request for Testing Services	A form, signed by the device vendor and by Visa, that establishes Visa's right to review results submitted by the vendor, following testing at a laboratory; must be submitted before testing begins.
Fast DDA (fDDA)	Leverages DDA as defined in EMV and VIS specifications (References 5 and 7). Used in qVSDC transactions to allow the reader to issue READ RECORD commands to obtain Dynamic Data Authentication (DDA) related data from the card and perform the DDA calculations after the card has left the field.
Forms	See section <a href="#">Required Forms for Testing</a> .

## Chip Card Acceptance Device Testing and Approval Requirements

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Implementation Conformance Statement / ICS	See section <a href="#">Required Forms for Testing</a> .
Laboratory	In this document, refers to a Visa-recognized laboratory that tests chip card products or devices in preparation for approval by Visa.
Letter of Approval (LoA)	An acknowledgement by Approval Services that a specific chip card product has successfully completed testing.
MSD	Magnetic Stripe Data, a Visa payment application for contactless chip cards.
Offline Data Authentication (ODA)	Offline data authentication is a cryptographic check to validate the card using public-key cryptography.
Official Testing	In the context of this document, refers to testing conducted by a Laboratory with the intention of obtaining Visa approval of a card acceptance device.
Proximity Coupling Device Integrated / PCDI	A device that supports VSDC, and/or MSD, and/or qVSDC application and is connected to or contains a contactless reader (PCDR) that supports the contactless interface.
Proximity Coupling Device with Application / PCDA	A contactless reader that supports the contactless interface and MSD and/or qVSDC application.
qVSDC	Quick VSDC. A Visa payment application for contactless chip cards.
SDA	Static Data Authentication
Test Plan	See section <a href="#">Test Plans</a> for a list of test plans available from Approval Services.
Test Script	See section <a href="#">Commercial Test Tools and Test Scripts</a> for information about obtaining test scripts.
Test-cycle Submission	The initial submission of a card acceptance device for testing and, if the device fails testing initially, each subsequent submission for testing.
Testing Agreement	See <a href="#">Approval Services Testing Agreement</a> .

Appendix D - Testing Availability b  
Chip Card Acceptance Device Testing and Approval Requirements

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VIS	<i>Visa Integrated Circuit Card Specification</i> . See <a href="#">Appendix A</a> .
Visa Approval Services	Provides a single point of contact, both for vendors and for Visa personnel, on the Visa testing and approval process for card acceptance devices.
Visa Approval Services Questionnaire	A form that enables Approval Services to determine whether a device product is eligible for Visa testing and approval.
Visa Approval Services Testing Agreement	An agreement between Visa and the card manufacturer, device manufacturer, or chip supplier regarding testing and approval.
Visa Approved Products List	A listing of card acceptance devices that have passed testing and received approval as described in this document.
Visa Payment Application	Any of: <ul style="list-style-type: none"><li>• Visa Smart Debit/Credit (VSDC)</li><li>• qVSDC - contactless only</li><li>• Magnetic Stripe Data (MSD) - contactless only</li></ul>
Visa Smart Debit/Credit / VSDC	Visa service offerings for chip-based debit and credit programs which are based on EMV and VIS specifications and are support by VisaNet processing, as well as by Visa rules and regulations.
Visa-recognized Laboratory	A laboratory that is recognized by Visa to test chip card products and devices in preparation for approval by Visa.

