



# *PayPass* Vendor Testing Guide (Terminals)

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## Using this Guide

Scope .....	1
Audience.....	1
Reader Guidance.....	1
Related Information.....	2
Acronyms.....	4
Terminology .....	5
Revisions.....	8

## Chapter 1 Introduction

1.1 Background .....	1-1
1.2 Who needs to Use this Process? .....	1-1
1.3 Which Products can be Approved Using this Process? .....	1-1
1.4 When is this Process Used?.....	1-3
1.5 How is this Process Used? .....	1-4

## Chapter 2 Testing Process

2.1 Overview .....	2-1
2.2 Vendor Registration.....	2-3
2.3 Product Development Cycle.....	2-4
2.4 Design Review.....	2-4
2.5 Product Registration and Configuration Assessment .....	2-5
2.6 Test Sub-processes .....	2-5
2.6.1 EMV Contactless Terminal Type Approval Level 1 (CTTA L1) .....	2-5
2.6.2 PayPass Performance .....	2-6
2.6.3 Terminal Type Approval Level 2 (TTA L2) .....	2-6
2.6.4 Combination Testing .....	2-7
2.6.5 User Evaluations .....	2-7
2.6.6 Terminal Quality Management .....	2-8
2.6.7 PED Security Assessment.....	2-8

## Table of Contents

---

	2.7 Approval Review .....	2-9
	2.8 Change Management.....	2-9
<b>Chapter 3</b>	<b>Vendor Registration</b>	
	3.1 Purpose.....	3-1
	3.2 Requirement Level.....	3-1
	3.3 Procedure.....	3-1
	3.4 Contacts .....	3-1
<b>Chapter 4</b>	<b>Product Development Cycle</b>	
	4.1 Purpose.....	4-1
	4.2 Requirement Level.....	4-1
	4.3 Procedure.....	4-1
	4.4 Contacts .....	4-1
<b>Chapter 5</b>	<b>Design Review</b>	
	5.1 Purpose.....	5-1
	5.2 Requirement Level.....	5-1
	5.3 Procedure.....	5-1
	5.4 Contacts .....	5-2

## Chapter 6 Product Registration and Configuration Assessment

6.1 Purpose.....	6-1
6.2 Requirement Level.....	6-1
6.3 Procedure.....	6-1
6.4 Contacts .....	6-3

## Chapter 7 Test Sub-processes

7.1 EMV Contactless Terminal Type Approval Level 1 (CTTA L1) .....	7-1
7.1.1 Purpose.....	7-1
7.1.2 Requirement Level .....	7-1
7.1.3 Procedure .....	7-2
7.1.4 Contacts .....	7-2
7.2 <i>PayPass</i> Performance .....	7-2
7.2.1 Purpose.....	7-2
7.2.2 Requirement Level .....	7-2
7.2.3 Procedure .....	7-2
7.2.4 Sample Requirements.....	7-3
7.2.5 Contacts .....	7-4
7.3 Terminal Type Approval Level 2 (TTA L2) .....	7-4
7.3.1 Purpose.....	7-4
7.3.2 Requirement Level .....	7-5
7.3.3 Procedure .....	7-5
7.3.4 Sample Requirements.....	7-7
7.3.5 Contacts .....	7-9
7.4 Combination Testing .....	7-9
7.4.1 Purpose.....	7-9
7.4.2 Requirement Level .....	7-9
7.4.3 Procedure .....	7-10
7.4.4 Sample Requirements.....	7-10
7.4.5 Contacts .....	7-10
7.5 User Evaluations.....	7-11
7.5.1 Purpose.....	7-11
7.5.2 Requirement Level .....	7-11
7.5.3 Procedure .....	7-12
7.5.4 Sample Requirements.....	7-12
7.5.5 Contacts .....	7-12

## Table of Contents

---

7.6 Terminal Quality Management (TQM) .....	7-12
7.6.1 Purpose.....	7-12
7.6.2 Requirement Level .....	7-13
7.6.3 Procedure .....	7-13
7.6.4 Contacts .....	7-14
7.7 PIN Entry Device (PED) Security Assessment.....	7-15
7.7.1 Purpose.....	7-15
7.7.2 Requirement Level .....	7-15
7.7.3 Procedure .....	7-15
7.7.4 Contacts .....	7-16

## Chapter 8 Approval Review

8.1 Purpose.....	8-1
8.2 Requirement Level.....	8-1
8.3 Procedure.....	8-2
8.4 Contacts .....	8-2

## Chapter 9 Change Management

9.1 Purpose.....	9-1
9.2 Changes Raised by MasterCard.....	9-1
9.3 Changes Raised by the Vendor.....	9-1
9.3.1 Changes to the <i>PayPass</i> Product .....	9-1
9.3.2 Changes in the PCD .....	9-2
9.3.3 Changes in the <i>PayPass</i> Application .....	9-3
9.3.4 Re-using a Validated PCD.....	9-3
9.3.5 Re-using a Validated <i>PayPass</i> Application.....	9-4
9.3.6 Changes of Identification Details of the Vendor .....	9-4

---

**Annex A      Preliminary Testing**

A.1 Introduction ..... A-1

A.2 Requirement..... A-1

A.3 Procedure ..... A-1

A.4 Sample Requirements ..... A-2

A.5 Contacts..... A-2

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## Using this Guide

*This chapter contains information that helps you understand and use this document.*

---

Scope .....	1
Audience .....	1
Reader Guidance.....	1
Related Information.....	2
Acronyms.....	4
Terminology .....	5
Revisions.....	8



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## Scope

The purpose of the *PayPass* Vendor Product Approval process (Terminals) is to have a Vendor's *PayPass* Products running the *PayPass* Application obtain a MasterCard Letter of Approval (MasterCard LoA).

See the Terminology sub-section in this chapter for the definition of a *PayPass* Product.

Any additional testing required to support non-*PayPass* Applications is outside the scope of this document.

For the approval process of *PayPass* Products supporting the EMV Entry Point and the related *PayPass* Application kernel(s), Vendors shall refer to the *PayPass* Vendor Testing Guide (EP Products) which is available on [www.paypass.com](http://www.paypass.com)



*PayPass* Products may support the contactless *PayPass* and contact EMV interfaces. These terminals are known as dual interface terminals.

This document focuses on the MasterCard approval for the *PayPass* part of the *PayPass* Product. Obtaining approvals for EMV Contact level 1, EMV Contactless level 1 and EMV Contact Level 2 is outside the scope of this document. EMVCo Approval procedures are already in place for this.

**Remark:** A terminal may also support a magnetic stripe reader. The magnetic stripe interface is out of scope of this document.

## Audience

This document is intended for use by the manufacturers and suppliers of *PayPass* Products.

The document is aimed at the program and project manager responsible for the delivery of their products through the MasterCard vendor testing process.

It is not the purpose of this document to include all detailed technical information required for a product to be submitted.

## Reader Guidance

This document describes the vendor testing process for all *PayPass* Products.

Information specific to *PayPass* – Mag Stripe products is indicated with the following symbol in the margin:

*pay***pass**<sup>™</sup>  
Mag Stripe

If you submit a *PayPass* – Mag Stripe product for approval, you can skip the information specific to *PayPass* – M/Chip products.

Information specific to *PayPass* – M/Chip products is indicated with the following symbol in the margin:

*pay***pass**<sup>™</sup>  
M/Chip

## Related Information

The following reference materials may be of use to the reader of this manual.



### Note

**MasterCard reserves the right to release updates to these documents and any documents referenced. Vendors must therefore check for the latest documentation versions and the impact of any amendments they contain before starting the vendor testing process.**

### Combination Testing

*PayPass* – Combination Test

### MasterCard *PayPass* Implementation Requirements

MasterCard *PayPass* Terminal Implementation Requirements

MasterCard *PayPass* M/Chip Acquirer Implementation Requirements

MasterCard *PayPass* Magstripe Acquirer Implementation Requirements

*pay***pass**<sup>™</sup>  
Mag Stripe

### *PayPass* Mag Stripe

*PayPass* – Mag Stripe Technical Specifications

*pay***pass**<sup>™</sup>  
Mag Stripe

### *PayPass* - Mag Stripe TTA L2 ETEC Tests

*PayPass* – Mag Stripe – Terminal Type Approval Level 2 – ETEC Tests  
Description

*pay***pass**<sup>™</sup>  
M/Chip

### *PayPass* M/CHIP

*PayPass* – M/Chip Reader Card Application Interface

*PayPass* – M/Chip Application Note #15



***PayPass M/CHIP TTA L2 ETEC Tests***

*PayPass – M/Chip – Terminal Type Approval Level 2 – ETEC Tests Description*

***PayPass Performance***

*PayPass Performance Measurement*

***PayPass Performance Requirements***

*MasterCard PayPass – Application Note #2*

*MasterCard PayPass – Application Note #3*

***PayPass Performance Test Procedure***

*PayPass test procedure for Performance Testing*

***PCP-TCL2***

*PayPass – Test Cases for Level 2 Terminal Testing*

***PIN Entry Device***

*Testing and Approval Program Guide*

***PIN Entry Device Requirement***

*PCI POS PIN Entry Device – Security Requirements*

***PPA/GEN/T01***

*PayPass Terminal Quality Management – Process*

***PPA/GEN/T02***

*PayPass Terminal Quality Management – Requirements*

***PP TTE***

*PayPass Testing Environment (Terminal Products)*



**Note**

The following documents are not issued by MasterCard. It is the vendor's responsibility to check for the latest documentation version and the impact of any amendments they contain before starting the vendor testing process.



**EMV**

EMV Integrated Circuit Card Specifications for Payment Systems

Book 1 Application Independent ICC to Terminal Interface Requirements

Book 2 Security and Key Management

Book 3 Application Specification

Book 4 Cardholder, Attendant, and Acquirer Interface Requirements

**EMVCo CTTAL1 Administrative Process**

EMVCo Type Approval Contactless Terminal Level 1 – Administration Process

**EMV Contactless Protocol**

EMV Contactless Communication protocol Specifications

## Acronyms

The following acronyms are used in this manual:

Abbreviation	Description
CVM	Cardholder Verification Method
EMV	Europay, MasterCard, Visa
EMV CTTAL1 - LoA	EMV Contactless Terminal Type Approval Level 1 - Letter of Approval
ICC	Integrated Circuit Card
ICS	Implementation Conformance Statement
ICS L2	Implementation Conformance Statement Level 2
ISO	International Standardization Organization
LoA	Letter of Approval
PC	Personal Computer
PCD	Proximity Coupling Device

Abbreviation	Description
PCI	Payment Card Industry
PED	PIN Entry Device
PICC	<i>PayPass</i> Integrated Circuit Card
PIN	Personal Identification Number
RF	Radio Frequency
TDOL	Transaction Certificate Data Objects List
TQM	Terminal Quality Management
TTA	Terminal Type Approval
TTA L1	Terminal Type Approval Level 1
TTA L2	Terminal Type Approval Level 2

## Terminology

This section explains the terms used in this specification.

**Application Requirements** – Set of requirements related to a *PayPass* Application [*PayPass Mag Stripe*] or [*PayPass M/CHIP*].

**Contactless Card Reader** – Product integrating a PCD, to be connected to a Terminal, to allow the Terminal to perform the financial transaction. A Contactless Card Reader may also include other components such as PED, *PayPass* Application, contact interface module, printer.

**Contactless Identifier** – An industry agreed identifier that must be placed in the centre of the landing zone.

**EMV Contactless Terminal Type Approval Level 1 - Letter of Approval** – Acknowledgment by EMVCo that a Proximity Coupling Device demonstrated compliance to [*EMV Contactless Protocol*] at the time of testing.

**Fully Integrated Terminal** – A *PayPass* Product integrating a PCD and the *PayPass* Application and which can process a Payment transaction without needing to be connected to a Contactless Card Reader. It may also include other components and interfaces such as PIN Entry Devices (PED), printer or host communications.

**Implementation Conformance Statement (ICS)** – A form completed by the terminal vendor identifying the product, the mandatory functions, the optional functions supported and (if any) the non-*PayPass* proprietary functions (note that this is different from a Test Assessment).

**Intelligent Contactless Card Reader** – A Contactless Card Reader which also integrates a *PayPass* Application.

**Interoperability** – A set of requirements which allows a cardholder product and a terminal to communicate and exchange data with each other in a predictable and consistent manner globally. For the *PayPass* technology, these requirements are defined in [*EMV Contactless Protocol*] (for Terminal Level 1) and [*PayPass Mag Stripe*] or [*PayPass M/CHIP*] (for Terminal Level 2).

**Landing Zone** – The identified area where a cardholder must ‘tap’ their *PayPass* card or device to achieve a successful read.

**MasterCard *PayPass* Vendor Product - Letter of Approval** – Acknowledgment by MasterCard that a *PayPass* Product demonstrated compliance to *PayPass* requirements at the time of testing. Also known as: *PayPass* Letter of Approval

**Operational Terminal** – Any terminal hardware/software not part of the submitted product that enables terminal functionality, i.e. hardware into which a Submitted Product must be integrated to form a payment/service providing system e.g. vending machine.

***PayPass* Application** – The software module residing on a *PayPass* Product and which implements the [*PayPass Mag Stripe*] or [*PayPass M/CHIP*] requirements.

***PayPass* Integrated Circuit Card (PICC)** – A *PayPass* cardholder product in either card or device (non-card) format into which integrated circuit(s) and coupling means have been placed and in which communication to such integrated circuit(s) is done by inductive coupling in proximity of a PCD.

***PayPass* Letter of Approval (LoA)** – See MasterCard *PayPass* Vendor Product - Letter of Approval.

***PayPass* Product** – A product or combination of products incorporating at least a PCD or a *PayPass* Application. Only *PayPass* products integrating a PCD and a *PayPass* Application and a PED, if available on that *PayPass* product, will be approved by MasterCard.

***PayPass* Product Component** – Component whose assessment is relevant for *PayPass* Product Approval. There are three *PayPass* Product Components: the PCD, the *PayPass* Application and the PIN Entry Device (if any).

***PayPass* Terminal** – A Fully Integrated Terminal or the combination of a Contactless Card Reader and a terminal covering the *PayPass* Application.

***PayPass* Terminal Vendor Testing Process** – See *PayPass* Vendor Testing Process (Terminals)

**PayPass Vendor Testing Process (Terminals)** – Execution of a defined set of tests on Submitted Products, claimed representative for a product, against requirements identified in *[PayPass Mag Stripe]* or *[PayPass M/CHIP]*. The process defined by this document. Also known as *PayPass Terminal Vendor Testing Process*.

**PED Approval Letter** – Acknowledgment by the PCI Security Standards Council that a PIN Entry Device (PED) demonstrated compliance with Payment Card Industry (PCI) security standards as set in *[PIN Entry Device Requirement]* at the time of testing.

**Preliminary Testing** – Tests performed to check the basic interoperability and increase the confidence before undertaking formal testing, Details of this testing are available in Annex A. *PayPass* approved card holder products are used for this testing.

**Proximity Coupling Device (PCD)** – A product component constituted of a combination of hardware and software and which implements *[EMV Contactless Protocol]*. The PCD uses inductive coupling to provide power to the PICC and also controls the data exchange with the PICC, up to and including the transport layer.

**Sample** – A *PayPass* Product picked out of production for testing.

**Submitted Product** – The set of hardware and software that is submitted to the testing process.

**Test** – Any activity that aims at verifying the conformance of a selected product or process to a given requirement under a given set of conditions.

**Test Assessment to Application Requirements** – Acknowledgment by MasterCard that a *PayPass* Application implemented in a specified *PayPass* Product demonstrated compliance with *[PayPass Mag Stripe]* or *[PayPass M/CHIP]* at the time of testing.

**Test Assessment to Interface Requirements** - Acknowledgment by MasterCard that a PCD implemented in a specified *PayPass* product demonstrated compliance with *[PayPass ISO/IEC 14443]* when Terminal Type Approval Level 1 was handled by MasterCard. MasterCard does not issue Test Assessment to Interface Requirements anymore.

**Test Report** – Generic term for a report that documents the results of a set of Tests.

**Test Laboratory** – A facility accredited by MasterCard for performing *PayPass* Terminal testing.

**TQM Label** – Formal recognition from MasterCard that a *PayPass* Product (1) embedding a specific PCD which has been granted the EMV CTTAL1-LoA or

previously a MasterCard Test Assessment to Interface Requirements, (2) designed by the owner of this Test Assessment (3) and produced in specified manufacturing sites, is compliant with the TQM requirements as defined in [PPA/GEN/TO2].

**Transparent Contactless Card Reader** – A Contactless Card Reader that does not integrate the *PayPass* Application..

**Vendor Registration Number** – A unique identification number assigned by MasterCard to a vendor.

## Revisions

The information in this manual supersedes and replaces all previous versions.

Information in this manual is subject to change. Any changes will result in an update to the current version of the document.

Version	History	Impact
1.0	First release, merges separate processes for <i>PayPass</i> –Mag Stripe and <i>PayPass</i> –M/Chip.	n/a
1.1	Introduction of EMV Contactless Level 1 Type Approval Introduction of <i>PayPass</i> Performance measurement Removal of <i>PayPass</i> Compatibility testing.	
1.2	Related publications subsection updates Forms are now available on <a href="http://www.paypass.com">www.paypass.com</a> and no longer part of this publication.	

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# 1

## Introduction

*This chapter provides an overview of the PayPass Vendor Testing Guide (Terminals).*

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1.1 Background .....	1-1
1.2 Who needs to Use this Process? .....	1-1
1.3 Which Products can be Approved Using this Process? .....	1-1
1.4 When is this Process Used?.....	1-3
1.5 How is this Process Used? .....	1-3

## 1.1 Background



**Note**

This document describes the approval process for vendors of *PayPass* Products (Terminals).

**The approval process for *PayPass* Products supporting the EMV Entry Point and the related *PayPass* application kernel(s) is not in scope of this document. This process is described in the *PayPass* Vendor Product Approval Process Guide (Entry Point Terminal Products)**

MasterCard has developed a comprehensive test and validation process for *PayPass* Products. This process enables world-wide Interoperability and quality at acceptable time and cost.

Completing the approval process allows Vendors to demonstrate conformity of their products to *PayPass* requirements and thus acceptance readiness for use in MasterCard acquiring network.

For each product, the approval process does ensure that all *PayPass* Product Components (such as PCD, *PayPass* Application and PED) involved in Contactless payment transaction have received the required approvals.

## 1.2 Who needs to Use this Process?

Vendors who wish to demonstrate compliance with the whole set of MasterCard's published *PayPass* specifications and requirements for *PayPass* Products (Terminals).

## 1.3 Which Products can be Approved Using this Process?

Only *PayPass* Products implementing the full set of relevant product components may receive a MasterCard *PayPass* Vendor Product –Letter of Approval.

- **Which product components are relevant for *PayPass* Product approval?**

The product components relevant for interoperability, MasterCard payment application and security compliance, i.e.:

- ⇒ The Proximity Coupling Device (PCD)
- ⇒ The MasterCard *PayPass* Application
- ⇒ The PIN Entry Device (PED) - only in the situation where a PED is supported.

## Introduction

### Which Products can be Approved Using this Process?

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These components are referred later in this document as *PayPass* Product Components.



**Note** *PayPass* Products may support a magnetic stripe reader. The magnetic stripe interface is out of scope of this process.



**Note** *PayPass* Products may support the Contactless and contact EMV interfaces. These products are known as dual interface products. The contact EMV interface is outside the scope of this approval process.



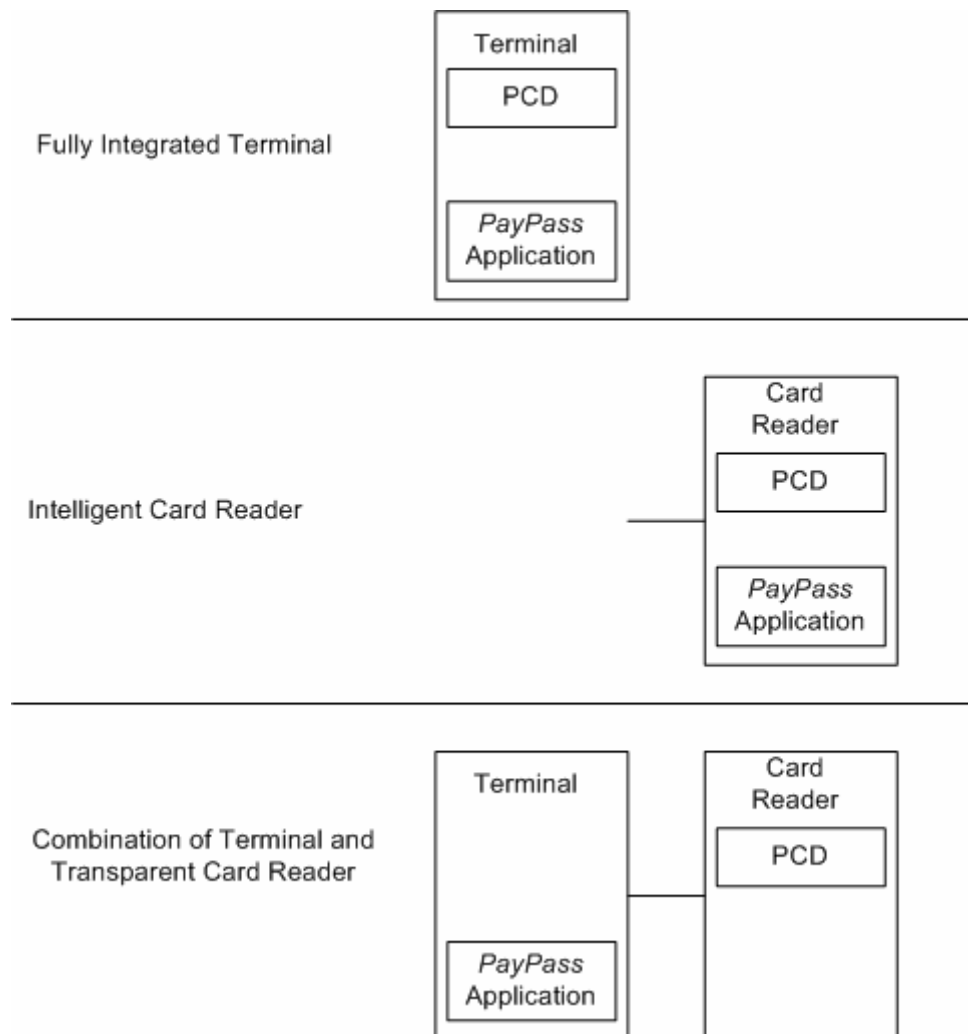
MasterCard recommends vendors to obtain full EMV Level 2 Approval for the contact interface before applying for *PayPass* approval. According to EMVCo rules, it is up to the vendor to determine whether changes on the terminal resulting from *PayPass* approval are minor or major.

Please refer to the EMVCo website ([www.emvco.com](http://www.emvco.com)) for information on EMVCo approvals.

- **Which products can be considered for *PayPass* product Approval?**

The considered products are shown in Figure 1.1.

Figure 1.1— *PayPass* Products considered in *PayPass* Product approval



When the product supports a PIN Entry Device, the PIN Entry Device shall be considered as part of the submitted product.

## 1.4 When is this Process Used?

The process must be used:

- To get a *PayPass* Letter of Approval for a product (new or modified)
- To renew an expiring *PayPass* Letter of Approval

## 1.5 How is this Process Used?

The process is vendor driven. It is a vendor's responsibility to initiate the actions required to achieve approval. MasterCard will react to information received from the vendor as described in this document.

## Introduction

### How is this Process Used?

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To manage the process, it is recommended that vendors appoint a project manager as the point of contact with MasterCard and Test Laboratories.

This process does not cover the terminal integration testing process of the *PayPass* Products with the acquirers. For this, please refer to *[MasterCard PayPass Implementation Requirements]*

The main contact for any questions related to this process is [testing@paypass.com](mailto:testing@paypass.com).

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# 2

## Testing Process

*This chapter describes the Testing Process.*

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2.1 Overview .....	2-1
2.2 Vendor Registration.....	2-3
2.3 Product Development Cycle.....	2-4
2.4 Design Review.....	2-4
2.5 Product Registration and Configuration Assessment .....	2-5
2.6 Test Sub-processes .....	2-5
2.6.1 EMV Contactless Terminal Type Approval Level 1 (CTTA L1) .....	2-5
2.6.2 <i>PayPass</i> Performance .....	2-6
2.6.3 Terminal Type Approval Level 2 (TTA L2) .....	2-6
2.6.4 Combination Testing.....	2-7
2.6.5 User Evaluations.....	2-7
2.6.6 Terminal Quality Management .....	2-8
2.6.7 PED Security Assessment.....	2-8
2.7 Approval Review .....	2-9
2.8 Change Management.....	2-9

## 2.1 Overview

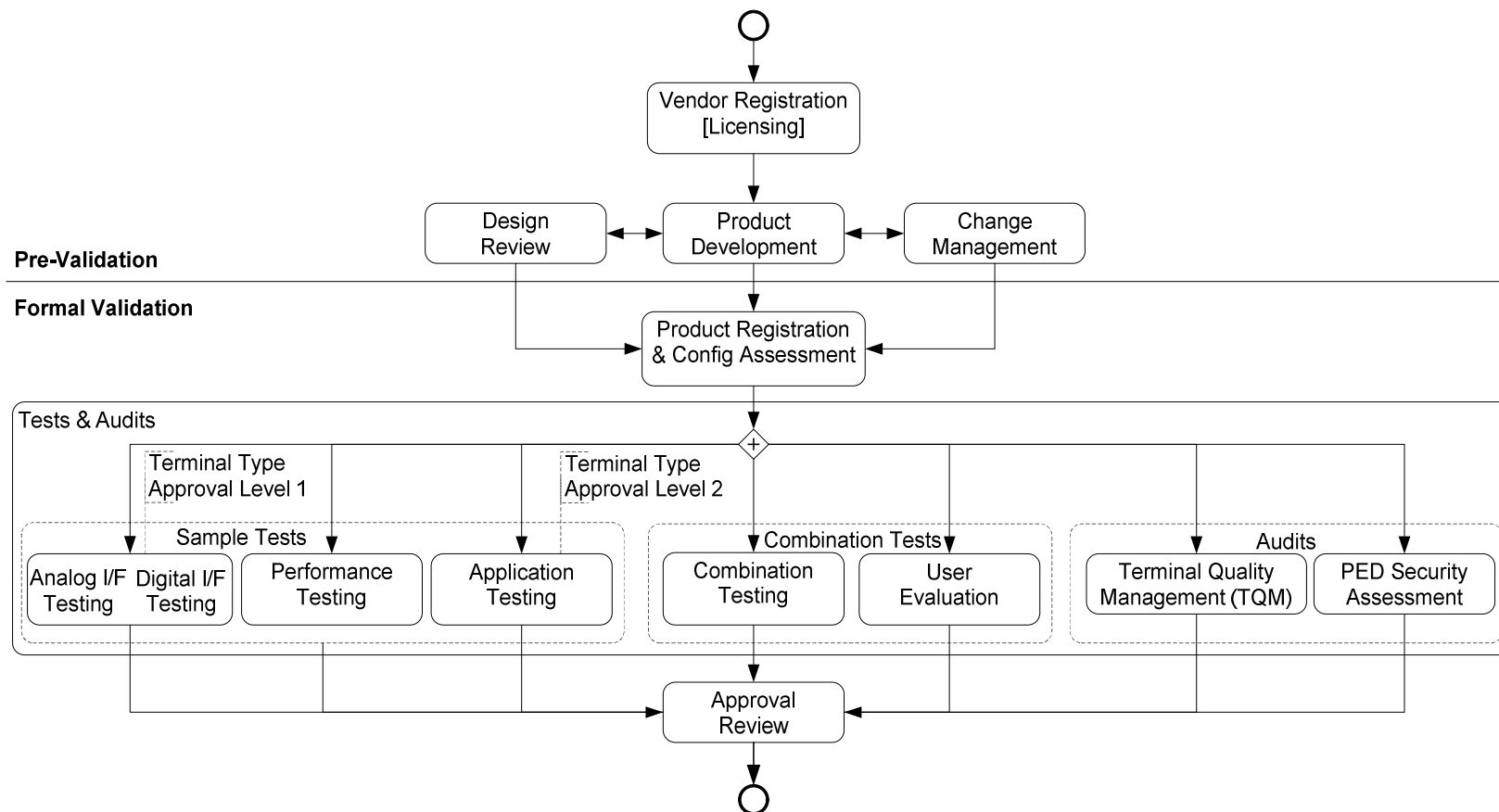
This chapter overviews the *PayPass* approval process for vendors of *PayPass* Products. The following chapters give detailed descriptions of each sub-process.

Figure 2.1 identifies the individual sub-processes and their relationships.

The process is modular and flexible. It allows the approval of any Complete *PayPass* product configuration including the approval of Intelligent Contactless Card Readers.

## Testing Process Overview

Figure 2.1—Process Overview





**Note**

Obtaining EMV PCD Approval is a prerequisite for *PayPass* Product approval. EMV PCD approval procedures are not in scope of this document because these procedures are already in place at EMVCo. Please visit [www.emvco.com](http://www.emvco.com) for further information.



**Note**

Obtaining MasterCard TQM Label for the PCD is a prerequisite for *PayPass* Product approval. Procedures for obtaining this TQM Label are not in scope of this document. Related MasterCard TQM procedures are already in place. Please contact [tqm@mastercard.com](mailto:tqm@mastercard.com) for further information.



**Note**

Obtaining PED PCI approval is a prerequisite for *PayPass* Product approval. Procedures for obtaining PED PCI-approval are not in scope of this document. These procedures are already in place at PCI Security Standard Council. Please visit [www.pcisecuritystandards.org](http://www.pcisecuritystandards.org) for further details.

## 2.2 Vendor Registration

This is a one-off sub-process for a vendor of *PayPass* Products.

To use *PayPass* brands and receive relevant MasterCard specifications, vendors must obtain a *PayPass* vendor license.

This permits the vendor to supply *PayPass* Products compliant with specifications and brand standards to:

- Other licensed vendors
- MasterCard *PayPass*-Mag Stripe and *PayPass*-M/Chip acquirers
- End users i.e. merchants.

## 2.3 Product Development Cycle

This process represents the vendor's internal development cycle.

Test Laboratories are available for vendors to test *PayPass* Products or *PayPass* Product Components during development using MasterCard supplied tools and simulators – if available. This testing is considered a development aid or debugging exercise. There is no formal requirement from MasterCard for a debugging test session to be performed, although, MasterCard strongly recommends it.

PCI-PED approval and EMVCo Terminal Type Approval Level 1 approval are prerequisites for *PayPass* Product approval. As a consequence MasterCard recommends the vendor to agree relevant contracts and schedules with Test Laboratories and Entities responsible of these sub-processes as early as possible in the development cycle.

## 2.4 Design Review

This sub-process reviews the design of *PayPass* Products during the product development cycle.

Design Review checks:

- The product viability and ease of use
- The product design against the *PayPass* implementation requirements defined in [*MasterCard PayPass Implementation Requirements*]
- The ability of the *PayPass* Product to handle different cardholder *PayPass* product form factors during testing
- Potential issues early-on in the product development cycle

The Design Review is mandatory for a product requiring a *PayPass* Letter of Approval.

## 2.5 Product Registration and Configuration Assessment

A *PayPass* Product embedding *PayPass* Product Components is submitted for approval using a series of forms to register the product capabilities and technologies.

MasterCard will assess the content of the submission to determine which test processes are required.

The result is a Terminal Evaluation Plan which describes the actions the vendor must carry out to obtain *PayPass* approval.

The Terminal Evaluation Plan allows the vendor to start formal testing. The vendor must agree relevant contracts and schedules with Test Laboratories and, as required, with relevant entities supporting TQM, PCI and EMV related audit and EMV Contactless Terminal Level 1 approval processes.

The sub-process is mandatory:

- To register new *PayPass* Products for *PayPass* approval.
- For renewal of an expiring *PayPass* Letter of Approval or Test Assessment to Application Requirements.

## 2.6 Test Sub-processes

### 2.6.1 EMV Contactless Terminal Type Approval Level 1 (CTTA L1)

Tests and validates, if necessary, the conformity of the PCD embedded in the submitted product to *EMV Contactless Protocol*. This may include both Analogue Interface Testing (TTA L1 – analogue) and Digital Interface Testing (TTA L1 – digital) of representative Samples.

This process is handled by EMVCo. It is the vendor's responsibility to obtain the related EMV CTAL1 – LoA for their PCD

Please refer to the EMVCo website ([www.emvco.com](http://www.emvco.com)) for information on EMVCo approvals.

When validated, an EMV CTAL1 - LoA is issued by EMVCo.



#### Note

**The validity of the EMV CTAL1 – LoA is managed by EMVCo. Any issue raised during *PayPass* Product approval which is due to PCD non-compliance will be reported to EMVCo.**



**Note** When PCD changes are introduced as a result of *PayPass* Product approval or product improvement, it is the vendor responsibility to determine whether these changes on the PCD are minor or major changes according to EMVCo rules and to decide to re-submit the modified product to EMVCo PCD Approval. MasterCard will only accept PCD with minor changes if the PCD has been granted a TQM Label  
Please contact [tqm@mastercard.com](mailto:tqm@mastercard.com) for further information on TQM.

## 2.6.2 *PayPass* Performance

This sub-process tests the conformity of the *PayPass* Product to [*PayPass Performance Requirements*] as per the method defined in [*PayPass Performance*].

Performance Testing is required

The output of this sub-process is a *PayPass* Terminal Performance Statement.



**Note** To obtain approval, MasterCard mandates the Performance Testing to be successful. As a consequence, MasterCard strongly recommends *PayPass* Terminal vendors to address performance testing as soon as possible in their product development cycle.

## 2.6.3 Terminal Type Approval Level 2 (TTA L2)

Tests and validates, if necessary, the conformity of the *PayPass* Application in the submitted *PayPass* Product to either:

*pay*pass™  
Mag Stripe

For *PayPass*-Mag Stripe:

- [*PayPass Mag Stripe*].

*pay*pass™  
M/Chip

For *PayPass*-M/Chip:

- [*PayPass M/CHIP*].

TTA L2 consists of *PayPass* Application testing of representative Samples of the product.

The output of the TTA L2 tests is an Application Test Report. MasterCard reviews the report.

When validated, a Test Assessment to Application Requirements is issued.



**Note** The EMV CTTAL1 – LoA for the PCD used in that *PayPass* Product is required before TTA L2 for that *PayPass* Product can commence.



**Note** Prior to the start of Terminal Type Approval Level 2, the Terminal or Card Reader is tested manually against a selection of approved *PayPass* cardholder products. The purpose of this step, referred to as Preliminary Testing, is to check whether there is an acceptable level of interoperability between the Terminal or Card Reader and *PayPass* cardholder products. If interoperability problems occur during the manual testing, the vendor may stop the testing and return to the product development phase to correct any issues (see Annex A for more information).

MasterCard maintains a list of approved *PayPass* cardholder products used for testing. Access to all approved devices for testing is available to vendors in the Test Laboratories during development debugging sessions. Debugging sessions are strongly recommended.

## 2.6.4 Combination Testing

Tests the conformity of the submitted product to *[Combination Testing]*.

This verifies the response of a *PayPass* Product at a series of predefined positions in relation to a set of *PayPass* cardholder devices.

Combination Testing results in a Combination Test Report.

## 2.6.5 User Evaluations

As required, User Evaluations evaluate:

- Cardholder reaction to *PayPass* Products
- The usability of *PayPass* Products by different types of cardholders

This testing assists the vendor with the Approval Review by providing an assessment of a *PayPass* Product from a consumer's point of view.

User Evaluations results in a User Evaluations Test Report.

User Evaluations may be required as a result of:

- Design Review
- Configuration Assessment
- Approval Review

## 2.6.6 Terminal Quality Management

Evaluates the *PayPass* Product and vendor organization's compliance to *[PPA/GEN/T02]*.

The TQM process verifies that the PCD configuration management and quality management of the vendor during the product life cycle are sufficient to ensure that

- Samples submitted to TTA L1 are representative of the future production regarding *[EMV Contactless Protocol]* compliance.
- any minor changes, as qualified by the vendor are correctly handled and *[EMV Contactless Protocol]* compliance continuity be demonstrated.

The TQM process results in a TQM Label for a specific PCD embedded in products designed by a specific vendor and manufactured at specific sites.

The TQM process is managed via a relationship between the vendor and MasterCard (TQM team).

## 2.6.7 PED Security Assessment

Tests and states the conformity to *[PIN Entry Device Requirement]*.

The *[PIN-Entry Device]* process evaluates security aspects of PIN Entry Devices, if required.

This process is managed between the vendor and a Payment Card Industry Security Standards Council (PCI-SSC) recognized Laboratory.

Upon successful validation PCD are listed on the PCI-SSC website and a Letter of Approval issued by the PCI Security Standards Council to the vendor

## 2.7 Approval Review

When all required test processes have been completed, the vendor may apply for a *PayPass* Letter of Approval from MasterCard.

This Letter of Approval applies to a *PayPass* Product that supports the requirements described in *[EMV Contactless Protocol]*, *[PayPass Mag Stripe]* or *[PayPass M/CHIP]*, *[PayPass Performance Requirements]*, *[PPA/GEN/T02]* and *[PIN Entry Device Requirements]*, if any.

If MasterCard's decision is:

- **Positive** – a *PayPass* Letter of Approval is issued and the *PayPass* Product is listed on the *PayPass* website. A *PayPass* Letter of Approval may be issued with specified conditions. The vendor must adhere to the conditions for the approval to be valid.
- **Negative** – no *PayPass* Letter of Approval is issued and the *PayPass* Product is not listed on the *PayPass* website. The vendor is informed about this decision.

## 2.8 Change Management

During a *PayPass* Product's lifecycle several sources of change must be managed. These are:

- Changes introduced by MasterCard i.e. amended specifications and related test cases
- Changes carried out by the vendor, such as:
  - Modifications to an approved *PayPass* Product
  - Modifications to a validated *PayPass* Product Component (PCD, *PayPass* Application, PED)
  - Using a validated *PayPass* Product Component in a *PayPass* Product within which it has not been validated
  - Modifications to vendor identification details

Notification of changes must be sent to MasterCard according to the above rules.

---

# 3

## Vendor Registration

*This chapter describes the Vendor Registration process.*

---

3.1 Purpose.....	3-1
3.2 Requirement Level.....	3-1
3.3 Procedure.....	3-1
3.4 Contacts .....	3-1



## 3.1 Purpose

To register the vendor intention to develop *PayPass* Products or *PayPass* Product Components.

The end result is a signed *PayPass* Specification License Agreement. This qualifies the vendor to receive relevant MasterCard specifications for the development of *PayPass* Products.

The *PayPass* Specification License Agreement issue date is included on any *PayPass* Letter of Approval.

A vendor is only required to sign a single *PayPass* Specification License Agreement.

## 3.2 Requirement Level

The process is mandatory.

## 3.3 Procedure

The procedure is:

1. The vendor makes a license request to MasterCard by sending an e-mail to the contact below.
2. MasterCard and the vendor agree and sign a *PayPass* Specification License Agreement.
3. *PayPass* specifications documentation is released to the vendor.

## 3.4 Contacts

The MasterCard contact for Vendor Registration is: [license@paypass.com](mailto:license@paypass.com)

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# 4

## Product Development Cycle

*This chapter describes the Product Development Cycle*

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4.1 Purpose.....	4-1
4.2 Requirement Level.....	4-1
4.3 Procedure.....	4-1
4.4 Contacts .....	4-1



## 4.1 Purpose

The Product Development Cycle represents a vendor's internal development procedures for building a *PayPass* Product.

Vendors may use the services of Test Laboratories to assist with product development and testing.

Use of these services is at the discretion of the vendor. It is strongly recommended that these services are used, as they may increase the efficiency of subsequent formal testing.

Testing during the Product Development Cycle is considered a development aid or de-bugging exercise. It does not form any part of the formal testing requirements.

## 4.2 Requirement Level

The process is vendor specific.

## 4.3 Procedure

Procedures will be vendor specific.

Specification support can be obtained using the contact below.

## 4.4 Contacts

The MasterCard contact for queries regarding *PayPass* specifications during Product Development is: [specifications@paypass.com](mailto:specifications@paypass.com)

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# 5

## Design Review

*This chapter describes the Design Review process*

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5.1 Purpose.....	5-1
5.2 Requirement Level.....	5-1
5.3 Procedure.....	5-1
5.4 Contacts .....	5-2



## 5.1 Purpose

Design Review ensures that a proposed *PayPass* Product meets the *[MasterCard PayPass Implementation Requirements]*.

It is a review of the proposed product design including a review of the layout of antenna, the proposed location of the Landing Zone and contactless identifier, the proposed areas of branding and other unique product features.

It also considers any aspect of the design that will impact its ability to successfully complete the formal testing process, e.g. the suitability of existing test rigs to support a new form factor.

A Design Review Report is generated and sent to the vendor.

## 5.2 Requirement Level

The process is mandatory for *PayPass* Products that require a Letter of Approval to be issued and must be performed before Product Registration.

## 5.3 Procedure

The process is:

1. During the Product Development Cycle, the vendor submits a *PayPass* Terminal / Reader Design Review form (available on [www.paypass.com](http://www.paypass.com)) along with:
  - a. Design Drawings – drawings of the product showing:
    - External design including dimensions.
    - Expected final mounted position or positions of use e.g. wall, counter top, vertical, horizontal, etc.
    - Details of the *PayPass* Landing Zone
    - Layout of *PayPass* read status indicators
    - Layout, size and position of the *PayPass* antenna
    - Layout and purpose of any user controls
    - Position of any other card reading capability e.g. contact chip and magnetic stripe.
  - b. Design Description – written descriptions of the product defining:

- How the terminal/card reader meets *[MasterCard PayPass Implementation Requirements]*.
  - The intended deployment environment(s) if known.
  - The intended operational process: how the *PayPass* Product will be used by the cardholder.
- c. Configuration Description - The intended identification of the *PayPass* components included in the *PayPass* Product, their and the existing compliance proof at the time of design review.
2. MasterCard generates a Design Review Report to the vendor. This indicates areas of design that may not satisfy *PayPass* implementation requirements and highlights potential issues with regard to usage or formal testing.

## **5.4 Contacts**

Requests for Design Review and completed *PayPass* Terminal / Reader Design Review form and supporting documentation shall be sent electronically to: [testing@paypass.com](mailto:testing@paypass.com).

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# 6

## Product Registration and Configuration Assessment

*This chapter describes Product Registration and Configuration Assessment.*

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6.1 Purpose.....	6-1
6.2 Requirement Level.....	6-1
6.3 Procedure.....	6-1
6.4 Contacts .....	6-3



## 6.1 Purpose

Product Registration is designed for registering full *PayPass* Product details:

- For approval of a new or modified *PayPass* Product
- For the renewal of an expiring *PayPass* Letter of Approval

In the case of a renewal, it is a vendor's responsibility to ensure that all supporting documentation has not expired and is still valid and applicable.

Once registered, Configuration Assessment is designed to allow MasterCard to evaluate the submission and identify the formally mandated test sub-processes for registration.

The output of Configuration Assessment is a Terminal Evaluation Plan containing information enabling the vendor to initiate the sub-processes.

## 6.2 Requirement Level

The process is mandatory.

## 6.3 Procedure

The procedure is:

1. The vendor completes:
  - The *PayPass* Product Approval Registration Form (available on [www.paypass.com](http://www.paypass.com))
  - The relevant Implementation Conformance Statement (ICS) applying to its product, i.e. one of the following documents:
    - *PayPass*–Mag Stripe Implementation Conformance Statement – Level 2 Form (For *PayPass*–Mag Stripe). This form is available on [www.paypass.com](http://www.paypass.com)
    - *PayPass*–M/Chip Implementation Conformance Statement – Level 2 Form (For *PayPass*–M/Chip). This form is available on [www.paypass.com](http://www.paypass.com)
  - For the renewal of a Letter of Approval or for the submission of a *PayPass* Product re-using *PayPass* Product Components already validated, the vendor needs to submit the *PayPass* Product Configuration Update Form (available on [www.paypass.com](http://www.paypass.com)) and related attachments.

The logo for pay pass Mag Stripe, with 'pay' in lowercase, 'pass' in bold lowercase, and 'Mag Stripe' below it.

The logo for pay pass M/Chip, with 'pay' in lowercase, 'pass' in bold lowercase, and 'M/Chip' below it.



**Note**

The *PayPass* Product Configuration Update Form allows the vendor to:

- **Compare the submitted *PayPass* Product and its *PayPass* Product Components to previously approved *PayPass* Product or validated *PayPass* Product Components**
- **Provide evidence that the compliance is not impacted by the changes – if any.**

2. The vendor e-mails these documents together with the Design Review report to the contact defined in Section 6.4.
3. MasterCard receives the registration documentation and assigns a Product Registration Number. MasterCard communicates this number to the vendor. This number will be used as a reference for any exchange between the vendor and MasterCard.
4. MasterCard assesses the configuration of the submitted *PayPass* Product and decides if the information submitted by the vendor in the *PayPass* Product Configuration Update Form – if any – is sufficient to assess the configuration of the product. This information consists of:
  - Design review
  - PCD identification and existing validation proof, if any ( EMVCo LoA or previously obtained MasterCard Test Assessment to Interface Requirements, TQM Label)
  - *PayPass* Application and existing validation proof, if any (MasterCard Test Assessment to Application Requirements, changes description and additional test reports if any, ..)
  - PED identification and existing validation proof, if any ( PCI PED approval)

If the information is not sufficient, MasterCard asks for documents review and re-submission

If the information is sufficient, MasterCard decides which test sub-processes and associated formal documents are needed.



**Note**

**Main MasterCard decision-making principles are given in section 9, in order to help the Vendor to anticipate MasterCard decision.**

5. A Terminal Evaluation Plan is completed and returned to the vendor indicating:
  - The previously obtained formal documents that MasterCard agrees to rely on.
  - The test sub-processes that the *PayPass* Product or *PayPass* Product Component must be submitted to.

- The formal documents that must be obtained to achieve a *PayPass* Letter of Approval for the submitted Product.
- The information needed by the vendor to initiate the required formal test sub-processes.



**Note**

**Vendors shall not wait for *PayPass* Product registration and configuration assessment to initiate EMVCo CTTA L1, PCI PED Approval or TQM Label process. These processes should have been initiated during the Product development cycle.**

## 6.4 Contacts

The MasterCard contact for product or registration renewal is:  
[testing@paypass.com](mailto:testing@paypass.com)

# 7

## Test Sub-processes

*This chapter describes the Test Sub-processes.*

7.1 EMV Contactless Terminal Type Approval Level 1 (CTTA L1) .....	7-1
7.1.1 Purpose.....	7-1
7.1.2 Requirement Level .....	7-1
7.1.3 Procedure .....	7-2
7.1.4 Contacts .....	7-2
7.2 <i>PayPass</i> Performance .....	7-2
7.2.1 Purpose.....	7-2
7.2.2 Requirement Level .....	7-2
7.2.3 Procedure .....	7-2
7.2.4 Sample Requirements.....	7-3
7.2.5 Contacts .....	7-4
7.3 Terminal Type Approval Level 2 (TTA L2) .....	7-4
7.3.1 Purpose.....	7-4
7.3.2 Requirement Level .....	7-5
7.3.3 Procedure .....	7-5
7.3.4 Sample Requirements.....	7-7
7.3.5 Contacts .....	7-9
7.4 Combination Testing.....	7-9
7.4.1 Purpose.....	7-9
7.4.2 Requirement Level .....	7-9
7.4.3 Procedure .....	7-10
7.4.4 Sample Requirements.....	7-10
7.4.5 Contacts .....	7-10
7.5 User Evaluations.....	7-11
7.5.1 Purpose.....	7-11
7.5.2 Requirement Level .....	7-11
7.5.3 Procedure .....	7-12
7.5.4 Sample Requirements.....	7-12
7.5.5 Contacts .....	7-12
7.6 Terminal Quality Management (TQM) .....	7-12
7.6.1 Purpose.....	7-12
7.6.2 Requirement Level .....	7-13
7.6.3 Procedure .....	7-13

7.6.4 Contacts .....	7-14
7.7 PIN Entry Device (PED) Security Assessment.....	7-15
7.7.1 Purpose.....	7-15
7.7.2 Requirement Level .....	7-15
7.7.3 Procedure .....	7-15
7.7.4 Contacts .....	7-16

## 7.1 EMV Contactless Terminal Type Approval Level 1 (CTTA L1)

### 7.1.1 Purpose

EMV Contactless TTA L1 testing is designed to test and validate the compliance of the analogue and digital interfaces of the Proximity Coupling Device (PCD) to *[EMV Contactless Protocol]*.

**Analogue Interface Testing** relates to the RF hardware and firmware of the PCD.

**Digital Interface Testing** relates to the software responsible for the data exchange between *PayPass* cardholder products and PCD.

When validated, an EMV CTTAL1 - LoA is issued by EMVCo.



Note

The validity of the EMV CTTAL1 – LoA is managed by EMVCo. Any issue raised during *PayPass* approval which is due to PCD non-compliance will be reported to EMVCo.



Note

When PCD changes are introduced as a result of *PayPass* Product approval or Product improvement, it is the vendor responsibility to determine whether these changes on the PCD are minor or major changes according to EMVCo rules and to decide to re-submit the modified product to EMVCo PCD Approval. MasterCard will only accept PCD with minor changes if the PCD has been granted a TQM Label  
Please contact [tqm@mastercard.com](mailto:tqm@mastercard.com) for further information on TQM.

### 7.1.2 Requirement Level

This process is handled by EMVCo. It is the vendor's responsibility to obtain the EMV CTTAL1 – LoA for their PCDs.

The EMV CTTAL1 – LoA for the PCD used in that *PayPass* product is required before TTA L2 for that *PayPass* Product can commence.



Note

If the vendor has already successfully completed TQM, and the PCD being tested meets the necessary TQM requirements, the vendor may be able to avoid EMV Contactless TTA L1. For more information, see the note in section 7.6.3.

### 7.1.3 Procedure

The vendor must follow the EMVCo Type Approval procedures to obtain the provisional Letter of Approval.

### 7.1.4 Contacts

Please refer to the EMVCo website ([www.emvco.com](http://www.emvco.com)) for information on EMVCo approvals.

## 7.2 PayPass Performance

### 7.2.1 Purpose

The purpose of Performance Testing is to demonstrate that the *PayPass* Product responds in a correct and timely manner to a specified range of commands from a *PayPass* Card or Device by checking the conformity of the sample to *[PayPass Performance Requirements]* as per the method defined in *[PayPass Performance]*.

Performance tests are defined in *[PayPass Performance Test Procedure]*.

Performance Testing is based on sample testing at a Testing Laboratory.



**Note**

**EMV Contactless Terminal Type Approval Level 1 or the availability of the Test Assessment to Interface Requirements for the PCD used in the *PayPass* Product is a prerequisite to *PayPass* Performance Testing.**

### 7.2.2 Requirement Level

The process is mandatory.

### 7.2.3 Procedure

The procedure is:

1. The vendor agrees contracts and schedules with a Test Laboratory.
2. The vendor provides the Test Laboratory with:
  - Implementation Conformance Statement – Level 2 with the ‘Sample Terminal Identification’ section completed

- A copy of the Test Assessment to Interface Requirements or EMVCo CTTAL1 – LoA for the PCD used in the *PayPass* Product as specified in the Terminal Evaluation Plan
  - The Samples with a testing environment (as defined in *[PP-TTE]*)
  - Required cables
  - Documentation required to complete Performance testing
3. The Test Laboratory performs the *PayPass* Performance Testing and provides the vendor with a non-modifiable and electronically signed *PayPass* Terminal Performance Statement stating:
    - The results of the Performance Tests
    - The reference to the Implementation Conformance Statement – Level 2 as sent to the Test Laboratory
    - The reference of the Test Assessment to Interface Requirements or EMVCo CTTAL1 – LoA for the PCD
  4. If the results are positive the vendor can submit a complete and unchanged copy of the *PayPass* Terminal Performance Statement to MasterCard for consideration in the Approval Review.
  5. If the results are negative, the vendor shall stop formal testing and re-enter the Product Development Cycle.



**Note**

**In the case where modifications have to be done to the *PayPass* Product or a *PayPass* Product Component – even if other required test sub-processes have already been successfully completed-, the vendor shall describe the changes using the Configuration Update Form (available on [www.paypass.com](http://www.paypass.com)) and re-submit the modified *PayPass* Product to MasterCard for Configuration Assessment.**

**If changes are done to the PCD, re-submission to EMVCo CTTA L1 may be required before re-submission to Configuration Assessment.**

6. MasterCard uses the *PayPass* Terminal Performance Statement as input to Approval Review

## 7.2.4 Sample Requirements

Unless otherwise stated in the Terminal Evaluation Plan, three Samples are provided to the Test Laboratory.

The Samples submitted for Performance testing must:

- Adhere to requirements defined in *[Performance Measurement]* and *[PayPass Mag Stripe]* or *[PayPass M/CHIP]*, as appropriate.

- Support a testing environment as indicated in *[PP TTE]*.
- Include a manual, cables and any necessary PC software as required.
- Provide identification of the terminal Landing Zone including the final position of the Contactless identifier
- Provide means to verify the physical sample configuration against the identification information as declared on the Implementation Conformance Statement – level 2.

The device to be submitted to the Test Laboratory depends on the *PayPass* Product configuration as shown in Table 7.1.

### 7.2.5 Contacts

Information regarding *PayPass* Performance and where to deliver samples can be obtained by sending an e-mail to: [testing@paypass.com](mailto:testing@paypass.com)

## 7.3 Terminal Type Approval Level 2 (TTA L2)

### 7.3.1 Purpose

The objective of TTA L2 is to ensure the MasterCard *PayPass* Application embedded in the Submitted *PayPass* Product is compliant with the requirements defined in:

*pay*pass™  
Mag Stripe

For *PayPass*-Mag Stripe: *[PayPass Mag Stripe]*

*pay*pass™  
M/Chip

For *PayPass*-M/Chip: *[PayPass M/CHIP]*

TTA L2 is divided into two phases:

1. Preliminary Testing as described in Annex A.
2. Formal Application Testing; this step utilizes two different test tools - the MasterCard Easy Test Cards (ETEC) and the EVAL card simulator.
  - Tests performed using ETEC cards: These tests are performed with ETEC cards to enhance interoperability and increase the confidence that the terminal will function according to requirements during network integration.

paypass™  
Mag Stripe

paypass™  
M/Chip

- ETEC subset 6 is used for *PayPass – Mag Stripe* and *PayPass – M/Chip*, see [*PayPass – Mag Stripe TTA L2 ETEC Tests*]
- ETEC subset 7, ETEC subset 8 and Maestro *PayPass* ETEC subset are used for *PayPass – M/Chip* testing, see [*PayPass M/CHIP TTA L2 ETEC Tests*]
- Tests performed using the EVAL card simulator: All tests are described in [*PCP-TCL2*].

Debugging test sessions are strongly recommended. To this effect, ETEC test cards and EVAL card simulator can be ordered as defined in Section 7.3.5 .

If successful, the formal output is the Test Assessment to Application Requirements.



**Note**

**Terminal Type Approval Level 2 can only be started once EMV Contactless Terminal Type Approval Level 1 and *PayPass* Performance have been successfully completed.**

## 7.3.2 Requirement Level

MasterCard decides during the Configuration Assessment whether the TTA L2 process is mandatory.

The *PayPass* product must have a valid EMVCo CTTAL1 LoA and a valid Test Assessment to Application Requirements, in order to be eligible for approval.

## 7.3.3 Procedure

The procedure is:

1. The vendor agrees contracts and schedules with a Test Laboratory.
2. The vendor provides the Test Laboratory with:
  - *PayPass* Mag Stripe or *PayPass* M/Chip Implementation Conformance Statement – Level 2 with the ‘Sample Product Identification’ section completed
  - A copy of the EMV CTTAL1 – LoA or previously granted Test Assessment to Interface Requirements for the PCD used in the *PayPass* Product as specified in the Terminal Evaluation Plan
  - The Samples with a testing environment (as defined in [*PP TIE*])
  - Cables
  - Documentation required to complete TTA L2

3. The Test Laboratory performs Preliminary Testing.
  - If the Preliminary Testing is successful, the Test Laboratory continues with the next step.
  - If the result of this testing is not successful, the vendor is informed by the Test Laboratory before TTA L2 commences. The vendor then decides to:
    - Not start formal testing and return to the Product Development Cycle phase
    - or
    - Continue with formal testing as described in the next steps.
4. The Test Laboratory performs the Application Testing and provides the vendor with a TTA L2 - Application Test Report in a non-modifiable and electronically signed format, including:
  - The results of Preliminary Testing
  - The results of the TTA L2 Application Tests
  - The Implementation Conformance Statement – Level 2 as sent to the Test Laboratory



**Note**

**In the case where modifications have to be done to the *PayPass* Product or a *PayPass* Product Component – even if other required formal test sub-processes have already been successfully completed-, the Vendor shall describe the changes in a Configuration Update Form (available on [www.paypass.com](http://www.paypass.com)) and re-submit the modified *PayPass* Product to MasterCard for Configuration Assessment.**  
**If changes are done to the PCD, re-submission to EMVCo CTTA L1 may be required before re-submission to Configuration Assessment.**

5. If the results are positive the vendor applies for a Test Assessment to Application Requirements by submitting the following to MasterCard for assessment:
  - Test Assessment to Application Requirements Request Form (available on [www.paypass.com](http://www.paypass.com))
  - A copy of the EMV CTTAL1 – LoA or previously granted Test Assessment to Interface Requirements for the relevant PCD as specified in the Terminal Evaluation Plan
  - A complete and unchanged copy of the TTA L2 - Application Test Report
6. MasterCard makes an assessment of the submitted documents:
  - If the assessment is positive, MasterCard issues a Test Assessment to Application Requirements.

- If the assessment is negative, MasterCard informs the vendor of the outcome.

### 7.3.4 Sample Requirements

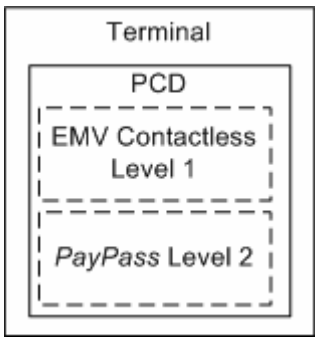
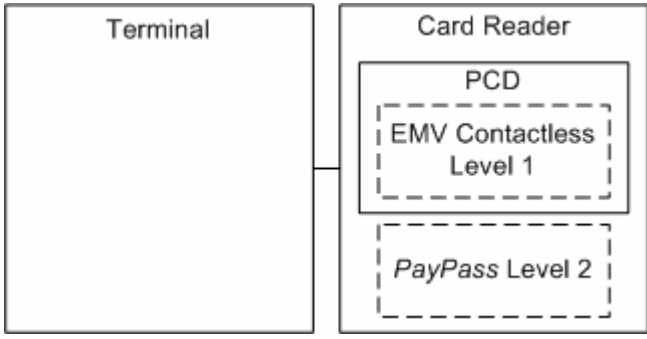
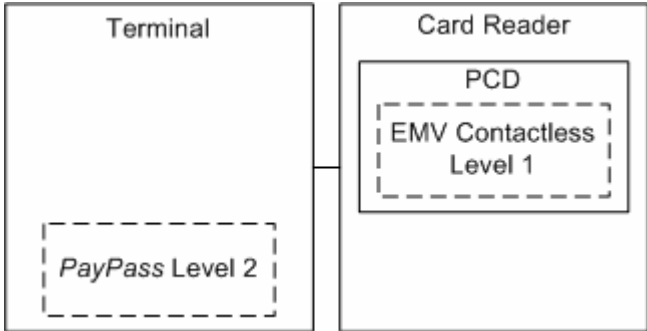
If not stated otherwise in the Terminal Evaluation Plan, three Samples are provided to the Test Laboratory. If the vendor wants to have tests run in parallel, five Samples should be provided.

The Samples submitted for TTA L2 must:

- Adhere to requirements defined in *[PayPass Mag Stripe]* or *[PayPass M/CHIP]*, as appropriate.
- Support a testing environment as indicated in *[PP-TTE]*.
- Include a manual, cables and any necessary PC software (where required).
- Provide identification of the terminal Landing Zone including the final position of the contactless identifier
- Provide means to verify the physical sample configuration against the identification information as declared on the Implementation Conformance Statement – level 2.

The device to be submitted to the Test Laboratory depends on the *PayPass* Product configuration as shown in Table 7.1

**Table 7.1—PayPass Product Configurations and TTA L2 Testing**

Terminal Configuration in which <i>PayPass</i> Product will be used	<i>PayPass</i> Product to be submitted to Test Laboratory for TTA L2 testing	
<p>a. <b>Fully Integrated Terminal</b></p> <p>PCD is fully embedded within the terminal covering all Level 1 and Level 2 requirements for <i>PayPass</i>.</p>		Terminal
<p>b. <b>Terminal and Intelligent Contactless Card Reader</b></p> <p>PCD is embedded in a stand-alone card reader connected to the terminal with the card reader covering all Level 1 and Level 2 requirements for <i>PayPass</i>.</p>		Card Reader (please see note below)
<p>c. <b>Terminal and Transparent Contactless Card Reader</b></p> <p>PCD is embedded in a stand-alone card reader connected to the terminal with the card reader only covering Level 1 for <i>PayPass</i> and the terminal part covers the Level 2 requirements.</p>		Combination of the Card Reader and the terminal



**Note**

**If the stand-alone Intelligent Contactless Card Reader uses any other components to operate the card reader, these must be submitted for testing as part of the testing environment supplied by the Vendor. However, TTA L2 testing and approval, applies only to the card reader.**

### 7.3.5 Contacts

TTA L2 samples will be sent directly to the contracted Test Laboratory.

Please send your application for a Test Assessment to Application Requirements to: [testing@paypass.com](mailto:testing@paypass.com)

MasterCard ETEC test cards for TTA L2 testing and EVAL card simulator can be obtained by contacting: [test\\_tools@fime.com](mailto:test_tools@fime.com)

## 7.4 Combination Testing

### 7.4.1 Purpose

Combination Testing shows whether a transaction takes place when a series of *PayPass* cardholder products are presented in a series of parameterized positions at the submitted *PayPass* Product.

A *PayPass* Product must be able to conduct *PayPass*-Mag Stripe and/or *PayPass*-M/Chip initiated transactions, as appropriate, as described in *[Combination Testing]*.

### 7.4.2 Requirement Level

When required by MasterCard.

Combination Testing is not required for every product, but may be requested:

- As a result of potential issues identified in the Design Review e.g. antennas
- On the Terminal Evaluation Plan
- Where formal Sample testing highlights difficulties in conducting *PayPass* transactions effectively
- To support the Test Assessment to Application Requirements review process.
- To support the Approval Review sub-process

A debugging test session is strongly recommended.

### 7.4.3 Procedure

The procedure is:

1. The Test Laboratory performs the test with the samples provided for TTA L2 and returns the Combination Test Report to MasterCard. Approved cardholder devices are used to perform the tests.
2. When modifications are judged necessary by MasterCard, MasterCard informs the vendor of the results.



**Note**

**In the case where modifications have to be done to the *PayPass* Product or a *PayPass* Product Component – even if other required test sub-processes have already been successfully completed-, the vendor shall describe the changes in a Configuration Update Form (available on [www.paypass.com](http://www.paypass.com)) and re-submit the modified *PayPass* Product to MasterCard for Product Registration and Configuration Assessment. If changes are done to the PCD, re-submission to EMVCo CTTA L1 may be needed before re-submission to Product Registration and Configuration Assessment.**

3. MasterCard uses the report as input to Test Assessment to Application Requirements review and the Approval Review.

### 7.4.4 Sample Requirements

The Samples provided for TTA L2 are used for Combination Testing (see section 7.3.4).

### 7.4.5 Contacts

Samples will remain at or be sent directly to the agreed Test Laboratory.

For further general information relating to Combination Testing, please contact: [testing@paypass.com](mailto:testing@paypass.com)

## 7.5 User Evaluations

### 7.5.1 Purpose

User Evaluations record the users' interaction with and reaction to the submitted *PayPass* Product in a customer environment. It checks:

- The reactions of representative users of *PayPass* Products
- The *PayPass* Products reaction to different users: male, female, left-handed, right-handed, etc.

User Evaluations capture:

- The first user reaction to using a *PayPass* Product i.e. is it obvious what *PayPass* is and how to use it, was a successful transaction achieved at the first attempt?
- The initial approach to attempting a payment transaction i.e. did the user understand what to do?
- The number of attempts taken before the user understood how to use the *PayPass* Product successfully, i.e. how quickly did they learn what to do from any instructions provided?
- If a successful transaction was consistently achieved across a range of cardholder products.
- If the *PayPass* Product was suitable for all users or more suitable to a particular user group
- The reaction to the *PayPass* Product not working i.e. is the experience of using *PayPass* 'user friendly'?

### 7.5.2 Requirement Level

When required by MasterCard.

User Evaluations are not required for every product, but may be requested:

- As a result of potential issues identified in the Design Review e.g. antennas
- On the Terminal Evaluation Plan
- Where formal sample testing highlights difficulties in conducting *PayPass* transactions effectively
- To support the Approval Review sub-process

### 7.5.3 Procedure

The procedure is:

1. The vendor provides Samples to the contact detailed below.
2. MasterCard performs the tests and generates a User Evaluation Test Report.
3. When modifications are judged necessary by MasterCard, MasterCard informs the vendor of the results.



#### Note

**In the case where modifications have to be done to the *PayPass* Product or a *PayPass* Product Component – even if other required test sub-processes have been successfully completed-, the vendor shall describe the changes in a Configuration Update Form (available on [www.paypass.com](http://www.paypass.com)) and re-submit the modified *PayPass* Product to MasterCard for Product Registration and Configuration Assessment. If changes are done to the PCD, re-submission to EMVCo CTTA L1 may be needed before re-submission to Product Registration and Configuration Assessment.**

4. The result captured on the User Evaluation Test Report may be used by MasterCard as input to the Approval Review.

### 7.5.4 Sample Requirements

The Sample requirements are established at the time the testing is agreed and scheduled.

### 7.5.5 Contacts

Information regarding User Evaluations and where to deliver Samples can be obtained by sending an e-mail to: [testing@paypass.com](mailto:testing@paypass.com)

## 7.6 Terminal Quality Management (TQM)

### 7.6.1 Purpose

Terminal Quality Management (TQM) is a product and organizational assessment process focusing on the PCD configuration management and quality management as implemented by the vendor.

The TQM process ensures that the vendor's configuration management system complies with *[PPA/GEN/T02]* and that Samples received for EMV Contactless TTA L1, or previously MasterCard PayPass TTA L1, testing are:

- **Representative:** The Samples are valid examples of the product which has been designed.
- **Repeatable:** The Samples are valid examples of the product which is to be delivered in production volumes in the future.
- **Reliable:** Evolutions of the tested *PayPass* Product remain compliant with *[EMV Contactless Protocol]*.

The vendor needs to implement processes to:

- Manage the configuration of the *PayPass* Products embedding the PCD by:
  - Identifying the configuration of the PCD within their *PayPass* Product configurations
  - Controlling the configuration changes done during the PCD and product life cycle regarding their impact on *[EMV Contactless Protocol]* compliance
  - Keeping the traceability of the changes
  - Verifying and auditing the configuration of the *PayPass* Products deployed in the field
- Plan and improve the configuration management

The result of a TQM process is a TQM Label granted to the PCD.

## 7.6.2 Requirement Level

The process is mandatory.

## 7.6.3 Procedure

TQM requires a separate registration and agreement with MasterCard. TQM documentation is then released.



- Note** A vendor that has successfully:
- Received a Test Assessment to Interface Requirements or EMVCo CTTA L1 Letter of Approval for the PCD used
  - Implemented TQM for this PCD

Is considered a trusted party by MasterCard.

As a consequence, all derivations from the initially validated PCD, handled according to the TQM requirements, do **not** need to be re-submitted to EMV CTTA L1 approval for *PayPass* Approval. Please refer to the TQM documentation (see [PPA/GEN/T02]) for a complete description of the TQM requirements to be met.

Please note that Vendor remains responsible to determine whether those changes on the PCD are minor or major changes according to EMVCo rules and to decide to re-submit the modified product to EMVCo CTTA L1.

## 7.6.4 Contacts

For more information on the *PayPass* TQM process and to obtain the necessary forms contact: [tqm@mastercard.com](mailto:tqm@mastercard.com) with the following e-mail subject: '*PayPass* information request'

The Action Plan Review/Escalation Form must be sent to [testing@paypass.com](mailto:testing@paypass.com).

## 7.7 PIN Entry Device (PED) Security Assessment

### 7.7.1 Purpose

PED security assessment ensures that the PED complies with Payment Card Industry Security Standard Council (PCI-SSC) security standards set in *[PIN Entry Device Requirement]*. This assessment addresses physical and logical security and the protection of PIN and resident keys in the *PayPass* Product. Security evaluation of the final PED complements the technical and functional evaluation of the *PayPass* Product.

PED testing as described in *[PIN-Entry Device]* is performed in a PCI-SSC recognized laboratory. The list of all PCI recognized security evaluation laboratories is published on <https://www.pcisecuritystandards.org/pin/>

Upon successful validation PCD are listed on the PCI-SSC website and a Letter of Approval is issued by PCI-SSC to the vendor

### 7.7.2 Requirement Level

MasterCard requires that PED used in *PayPass* Products are listed in the approved PIN Entry Device list available on the PCI-SSC website and this approval is not expired.

### 7.7.3 Procedure

This process is managed between the vendor and a PCI-SSC recognized Laboratory.

Vendors shall refer to the PCI-SSC documentation available on [www.pcisecuritystandards.org/pin/](http://www.pcisecuritystandards.org/pin/) for additional details

## 7.7.4 Contacts

For more information about PED Security Assessment and the testing process, please contact: [ped@mastercard.com](mailto:ped@mastercard.com) or

MasterCard encourages vendors to check for additional details on <https://www.pcisecuritystandards.org/pin/> web page where all the relevant documentation is available.

Alternatively vendors may contact MasterCard at the following address:

**MasterCard Product & Terminal Security**  
Jeremy King ([Jeremy\\_King@MasterCard.com](mailto:Jeremy_King@MasterCard.com))  
St Andrew House, The Links, Kelvin  
House, Birchwood Warrington  
Cheshire  
UK-WA1 TPB  
United Kingdom

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# 8

## Approval Review

*This chapter describes the Approval Review.*

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8.1 Purpose.....	8-1
8.2 Requirement Level.....	8-1
8.3 Procedure.....	8-2
8.4 Contacts .....	8-2



## 8.1 Purpose

Approval Review is the assessment of an application for a *PayPass* Letter of Approval (LoA) for a *PayPass* Product supporting the requirements of the *PayPass* specifications.



**Note** A “MasterCard *PayPass* Vendor Product - Letter of Approval” is only granted to the final assembled product when it has completed all required testing. Only *PayPass* Products integrating a PCD, a *PayPass* Application and a PED, if available on that *PayPass* product, will be approved by MasterCard

To request a *PayPass* Letter of Approval, the vendor must submit a file including:

- the *PayPass* Product Approval Request Form (available on [www.paypass.com](http://www.paypass.com))
- the EMV Contactless TTA L1 Letter of Approval or the Test Assessment to Interface Requirements corresponding to the PCD used with that *PayPass* Product
- the Test Assessment to Application Requirements
- the *PayPass* Performance Statement
- the TQM Label for the PCD (specific PCD, specific manufacturing site)
- the PED PCI-SSC Letter of Approval (if applicable)
- the Design Review Report

MasterCard reserves the right to request further testing to inform the Approval Review decision if necessary.

## 8.2 Requirement Level

The process is mandatory.

## 8.3 Procedure

The procedure is:

1. Vendor submits the set of prerequisite documents (see section 8.1).
2. MasterCard assesses the request and will either:
  - a. Issue a MasterCard *PayPass* Vendor Product – Letter of Approval to the vendor and list the device on the approved *PayPass* products website.
  - b. Not approve the product and inform the vendor.

The *PayPass* Letter of Approval applies to (see also Table 7-1 in chapter 7):

- **The Fully Integrated Terminal** i.e. configurations which have the PCD and the *PayPass* Application fully embedded within the terminal
- **The standalone Intelligent Contactless Card Reader** i.e. configurations with a Contactless Card Reader that integrates both PCD and *PayPass* Application.
- **The combination of the Transparent Contactless Card Reader and the terminal** i.e. configurations with the Contactless Card Reader that integrates the PCD and the terminal which integrates the *PayPass* Application.

## 8.4 Contacts

The approval documentation must be submitted to: [testing@paypass.com](mailto:testing@paypass.com)

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# 9

## Change Management

*This chapter describes the Change Management.*

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9.1 Purpose.....	9-1
9.2 Changes Raised by MasterCard.....	9-1
9.3 Changes Raised by the Vendor.....	9-1
9.3.1 Changes to the <i>PayPass</i> Product .....	9-1
9.3.2 Changes in the PCD .....	9-2
9.3.3 Changes in the <i>PayPass</i> Application .....	9-3
9.3.4 Re-using a Validated PCD.....	9-3
9.3.5 Re-using a Validated <i>PayPass</i> Application.....	9-4
9.3.6 Changes of Identification Details of the Vendor .....	9-4



## 9.1 Purpose

*PayPass* Products or *PayPass* Product Components configuration and implementation will be subject to change during their lifecycle. Change needs to be managed when:

- MasterCard changes a specification and its related test cases
- A Vendor
  - Changes a *PayPass* Product
  - Changes a *PayPass* Product Component (i.e. a PCD or a *PayPass* Application)
  - Re-uses already validated *PayPass* Product Components in a new *PayPass* Product
  - Changes vendor identification details

## 9.2 Changes Raised by MasterCard

To reflect changes to *PayPass* specifications, MasterCard reserves the right to change this process or associated specifications and test procedures.

When change occurs, MasterCard will:

- Inform all participants of the change
- Set the date for change activation
- Set the date for deactivation of the existing process, specification or test procedure.

There may be a time period during which the old and new versions run in parallel. However, MasterCard is not under any obligation to permit this.

## 9.3 Changes Raised by the Vendor

Vendors must declare changes to approved *PayPass* Products or *PayPass* Product Components.

### 9.3.1 Changes to the *PayPass* Product

This refers to any change to one of the below mentioned characteristics evaluated during the Vendor Testing Process:

- *PayPass* Product design evaluated during the design review

- Proximity Coupling Device evaluated during EMV CTTA L1 and TQM sub-processes
- *PayPass* Application evaluated during TTA L2 sub-process
- PIN Entry Device evaluated during PED Security Assessment

All the above changes lead to the creation of a new *PayPass* Product that needs to be submitted to MasterCard for approval.

Managing changes in the PCD and in the *PayPass* Application are detailed in Section 9.3.2 and Section 9.3.3.

### 9.3.2 Changes in the PCD

The identification of PCD changes are governed through the concept of major and minor changes as defined in *[EMVCo CTTAL1 Administrative Process]*.

- PCD major changes

PCD major changes require new PCD EMVCo approval

- PCD minor changes

The processes surrounding the change control, configuration management and identification of PCD minor changes are fully defined in the TQM process.

MasterCard understands that vendors may require some time to be TQM compliant and changes can be made before the PCD is granted a TQM Label. Therefore, two situations are considered depending on the TQM status, where:

1. The original PCD has been granted a TQM Label which is still valid: No new EMV CTTAL1 – LoA has to be requested for the changed configuration.



**Note**

**In this situation, and where the PCD change is the only change done to the *PayPass* Product, the modified product does not require approval from MasterCard.**

The changes are covered by the TQM Label and have to be described in the Terminal Identification Description questionnaire as explained in *[PPA/GEN/T01]*. The changes must only be declared to MasterCard at the time of TQM Label renewal. However, the up-to-date Terminal Identification Description questionnaire can be requested at any time.

2. The original PCD has not yet been granted a TQM Label:

A new EMV CTTAL1 – LoA is requested by MasterCard for the changed configuration.

If a *PayPass* Product vendor is using a transparent card reader from another vendor, that other vendor is responsible for the PCD change management and providing the vendor with the required information.

### 9.3.3 Changes in the *PayPass* Application

The modified *PayPass* Application (e.g. change in supported CVM, offline only or on-line terminal capability) is considered as a new *PayPass* Application for which a new Test Assessment to Application Requirements has to be requested from MasterCard.

The modified application must be submitted to MasterCard's Vendor Testing Process with supporting details (design documents, test logs, etc.) using the Test Assessment to Application Requirements Request Form (available on [www.paypass.com](http://www.paypass.com)).

The tests required may be reduced significantly if the supporting details demonstrate that the changes are minor and appropriate tests have successfully been executed by the vendor. This will be stated in the Terminal Evaluation Plan as a result of Configuration Assessment.



**Note** For dual interface terminals, modifications to the application kernel may also impact the EMV contact approval. It is up to the vendor's discretion to determine whether or not the terminal has to be resubmitted for EMV Terminal Type Approval – Level 2. Please refer to [www.emvco.com](http://www.emvco.com) for more information on this subject.

### 9.3.4 Re-using a Validated PCD

This section refers to

- The approval of a *PayPass* product embedding a PCD which received the EMV CCTAL1 - LoA but which was tested in another product than the submitted *PayPass* product or
- The approval of a *PayPass* product in which a PCD was tested for EMV CTTA L1, but to which changes have been done.

The *PayPass* product approval policy for reusing an already approved PCD in a new or modified *PayPass* Product is governed through the concept of major and minor changes defined in *[EMVCo CTTAL1 Administrative Process]*.

- Major changes

If the change to the *PayPass* product is identified as being major, then EMVCo approval of the PCD in that modified *PayPass* product environment is required.

- Minor changes

There are two situations depending on the TQM status for that PCD:

1. The PCD has been granted a TQM Label which is still valid:  
If so, no additional *PayPass* Product approval will be requested. The changes are covered by the TQM Label and have to be described in the Terminal Identification Description questionnaire as explained in [PPA/GENT01]. The changes must only be declared to MasterCard at the time of TQM Label renewal. However, the up-to-date Terminal Identification Description questionnaire can be requested at any time.
2. The PCD has not yet been granted a TQM Label:  
A new EMVCo approval of the PCD in that modified *PayPass* product environment is required.

### **9.3.5 Re-using a Validated *PayPass* Application**

In this case, the vendor needs to request a new Test Assessment to Application Requirements to MasterCard.

The new implementation can be submitted to MasterCard's Vendor Testing Process with supporting details (design documents, software architecture, test logs, etc.) using the Test Assessment to Application Requirements Request Form (available on [www.paypass.com](http://www.paypass.com)).

The tests required may be reduced significantly if the supporting details demonstrate the independence of the *PayPass* Application towards its environment – including the Proximity Coupling Device-. This will be stated in the Terminal Evaluation Plan as a result of Configuration Assessment.

### **9.3.6 Changes of Identification Details of the Vendor**

The vendor must declare changes to items stated on the *PayPass* Letter of Approval such as:

- Company name and ownership,
- Address,
- *PayPass* product/ *PayPass* product component identification details.

Any changes to the name or address of the company acting as a producer of an approved PCD type for the terminal vendor shall be communicated to MasterCard.

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# A

## Preliminary Testing

*This is Annex A of the PayPass Vendor Testing Guide (Terminals).*

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A.1 Introduction .....	A-1
A.2 Requirement.....	A-1
A.3 Procedure.....	A-1
A.4 Sample Requirements .....	A-2
A.5 Contacts.....	A-2



## A.1 Introduction

The purpose of this testing is to ensure an acceptable level of interoperability between *PayPass* products before formal testing commences. The testing indicates a level of interoperability between the *PayPass* Product under test and a selection of approved *PayPass* cardholder products.

## A.2 Requirement

This testing is mandatory as part of Terminal Type Approval Level 2 (TTA L2, see Section 7.3 in chapter 7).

The testing is available to vendors during any debugging sessions that are requested at Test Laboratories.

## A.3 Procedure

The procedure is:

1. The vendor provides samples to the Test Laboratory.
2. The Test Laboratory performs the tests. The *PayPass* Product under test is used manually in combination with a selection of industry approved cardholder products at:
  - 0cm ( $x=0, y=0, z=0, \theta=0$ )
  - 1cm ( $x=0, y=0, z=1, \theta=0$ )
  - 2cm ( $x=0, y=0, z=2, \theta=0$ )
  - 3cm ( $x=0, y=0, z=3, \theta=0$ )
  - 4cm ( $x=0, y=0, z=4, \theta=0$ )
3. The Test Laboratory checks if a consistently successful transaction can be achieved. A successful read is indicated visually by the terminal or card reader (4 LEDs) or by use of the Device Test Environment developed for TTAL2 as documented in *[PP-TTE]*.

Any tests that consistently fail at 0, 1, or 2 cm must be investigated and considered a serious problem.

Failed tests at 3 or 4 cm are considered in conjunction with the formal testing results.

4. If the test results indicate a serious problem, the Test Laboratory informs the vendor before formal TTA L2 testing commences. The vendor then:

- Does not start formal testing and returns to the Product Development Cycle phase
  - Continues with formal testing
5. The test results are included in the TTA L2 test report. MasterCard takes the results into consideration when assessing the test report for issuance of a Test Assessment.

## **A.4 Sample Requirements**

Samples will be taken from those supplied for TTA L2 testing.

## **A.5 Contacts**

The contact point for any questions related to Preliminary Testing is:  
[testing@paypass.com](mailto:testing@paypass.com)



**Note**

**The information in this annex was valid at the time of publication. MasterCard reserves the right to amend this information and release new versions or updates without prior notification.**

**It is the vendor's responsibility to check for new versions or updates at [www.paypass.com](http://www.paypass.com) before commencing the vendor testing process and submitting products for formal testing.**