Quick Guide to Cardholder Activated Terminals (CATs)

Quick Overview Guide to CATs and selecting the "best" one
There are two primary classifications of Point of Sale Terminal Types: Attended and Unattended

Payment Terminals are classified into two major types, depending on situation:
(a) Attended Terminals and (b) Unattended Terminals or Cardholder Activated Terminals (CATs)

A POS Transaction occurring at an attended POS Terminal is a face-to-face Transaction, since a Sales Person or Representative is present at the time of the Transaction.

A POS Transaction occurring at an unattended POS Terminal is a non-face-to-face Transaction, as NO Sales Person or Representative is present at the time of the Transaction. Examples of unattended POS Terminals include ticket dispensing machines, vending machines, automated fuel dispensers, toll booths, and parking meters.

A MasterCard POS Transaction that occurs at an unattended POS Terminal must be identified as a Cardholder-Activated Terminal (CAT) Transaction, as described in Appendix D of the Mastercard Transaction Processing Rules Manual. See overview below:

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The Following is a Helpful Guide to Selecting an Appropriate (CAT)

CAT 6 must be used to identify all electronic commerce transactions and digital secure remote payments (DSRP) – these will be covered separately

The CAT rules apply to Mastercard POS transactions only, as Maestro acceptance requires a PIN to verify the Cardholder identity, exceptions are:

- EMV or Chip based Maestro Contactless < EUR 25 for all contactless Maestro transactions
- EMV or Chip based Maestro Contact transactions at CAT 3 Terminals for limited amounts

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1. **My unattended Terminal:**
   - must have a secure online connection ✔ ✔ – ✔ ✔ ✔ ✔
   - is in a location where no online connection is possible – – ✔ – – –
   - must have a mag stripe reader as backup to CHIP ✔ – – – ✔ ✔
   - Must have a secure PIN Pad ✔ – Optional Optional – ✔ ✔
   - May be a contactless only* terminal, restricted to specific industries ✔ ✔ ✔ – – ✔ ✔

2. **My Terminal should accept:**
   - All Mastercard and Debit Mastercard ✔ ✔ ✔ ✔ ✔ ✔ ✔
   - All Maestro or Maestro under certain restrictions ✔ ✔ ✔ ✔ ✔ ✔

3. **Certain Restrictions:**
   - No Restrictions
   - Maestro w/, CDCVM or Contactless < EUR 25
   - Limited to EUR 50 & Specific Industries only
   - Maestro w/PIN Pad, CDCVM or Contactless < EUR 25
   - Maestro w/PIN Pad, CDCVM or Contactless < EUR 25

* Contactless only is limited to certain industries only
Offline CHIP Authorization possible in Europe Region for < EUR 200
The rules apply to Mastercard and Debit Mastercard POS transactions only, unless indicated and with the following exceptions:

- CAT 6 must be used to identify all electronic commerce transactions and digital secure remote payments (DSRP); these will be covered separately.

### Overview to select a CAT for your needs

#### CAT 1
Automated Dispensing Machines

- **Rule of Thumb**: Generally dispenses something of high-value
- **Acceptable Mastercard Products**: All Mastercard & Maestro Cards
- **Maestro Acceptance Restrictions**: Accepts all Maestro if secure PIN entry possible or CDCVM for Contactless
- **Maximum Amount**: No Maximum Transaction Amount
- **Recommended / Required Terminal Type**: Hybrid only Terminal
- **Needs to be Online or Online Capable for Issuer Authorization**: Must authorize transaction online to issuer or may be authorized offline via CHIP (< EUR 200)
- **Needs Cardholder Verification (i.e. PIN Pad & PIN Entry)**: Needs a secure PIN Entry Device for online or offline PIN
- **No Cardholder Verification Required if**: Contactless CDCVM enabled; or a Contactless Transaction is < CVM Limit
- **MCC or Industry Restrictions, if applicable**: None

#### CAT 2
Self-Service

- **Rule of Thumb**: Generally dispenses something of low value – speed @ device important
- **Acceptable Mastercard Products**: All Mastercard & restricted Maestro
- **Maestro Acceptance Restrictions**: • Contactless < EUR 25
- **Maximum Amount**: No Maximum Transaction Amount
- **Recommended / Required Terminal Type**: • EMV Contact + Contactless • Contactless only possible
- **Needs to be Online or Online Capable for Issuer Authorization**: Must authorize transaction online to issuer or may be authorized offline via CHIP (< EUR 200)
- **Needs Cardholder Verification (i.e. PIN Pad & PIN Entry)**: NO CVM required
- **No Cardholder Verification Required if**: CDCVM enabled; or a Contactless Transaction < CVM Limit
- **MCC or Industry Restrictions, if applicable**: None

#### CAT 3
Limited Amount Terminals

- **Rule of Thumb**: Is only allowed for certain merchant types and the terminal is OFFLINE
- **Acceptable Mastercard Products**: All Mastercard & restricted Maestro
- **Maestro Acceptance Restrictions**: • Contactless < EUR 25
- **Maximum Amount**: • MCC 4684: EUR 50 • MCC 7523: EUR 50 • MCC 7542: EUR 25 • MCC 5499: EUR 25
- **Recommended / Required Terminal Type**: • EMV Contact + Contactless • Contactless only possible
- **Needs to be Online or Online Capable for Issuer Authorization**: Is OFFLINE only; may be authorized offline via the CHIP
- **Needs Cardholder Verification (i.e. PIN Pad & PIN Entry)**: Optional for offline PIN verification, otherwise no CVM required
- **No Cardholder Verification Required if**: CDCVM enabled; or a Contactless Transaction < CVM Limit
- **MCC or Industry Restrictions, if applicable**: None

#### CAT 4
In-Flight Terminals

- **Rule of Thumb**: Is only allowed for certain merchant types and is "In-Flight"
- **Acceptable Mastercard Products**: All Mastercard & restricted Maestro
- **Maestro Acceptance Restrictions**: • Contactless < EUR 25 • > EUR 25, if Offline PIN possible
- **Maximum Amount**: No Maximum Transaction Amount
- **Recommended / Required Terminal Type**: Hybrid or EMV Contact + Contactless
- **Needs to be Online or Online Capable for Issuer Authorization**: Must authorize transaction online to issuer or may be authorized offline via CHIP (< EUR 200)
- **Needs Cardholder Verification (i.e. PIN Pad & PIN Entry)**: Optional for offline PIN verification, otherwise no CVM required
- **No Cardholder Verification Required if**: CDCVM enabled; or a Contactless Transaction < CVM Limit
- **MCC or Industry Restrictions, if applicable**: None

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4 QUICK GUIDE TO CARDHOLDER ACTIVATED TERMINALS (CATS)
### QUICK GUIDE TO CARDHOLDER ACTIVATED TERMINALS (CATS)

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<tr>
<td>Reserved</td>
<td>Transponder</td>
<td>Reserved</td>
<td>Hybrid</td>
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#### Rule of Thumb
- CAT 6 must be used to identify all electronic commerce transactions and digital secure remote payments (DSRP). These will be covered separately.
- CAT 5: Reserved
- CAT 7: Transponder
- CAT 8: Reserved
- CAT 9: Hybrid

#### Acceptable Mastercard Products
- CAT 5: All Mastercard & restricted Maestro
- CAT 7: All Mastercard and Maestro
- CAT 8: Contactless < EUR 25
- CAT 9: Accepts all Maestro if secure PIN entry possible or CDCVM for Contactless

#### Maximum Amount
- CAT 5: No Maximum Transaction Amount
- CAT 7: No Maximum Transaction Amount
- CAT 8: No Maximum Transaction Amount

#### Recommended / Required Terminal Type
- CAT 5: • EMV Contact or Contactless
- CAT 7: • Hybrid Terminal
- CAT 8: • Contactless only

#### Needs to be Online or Online Capable for Issuer Authorization
- CAT 5: Must authorize transaction online to issuer or offline via CHIP (< EUR 200)
- CAT 7: Must authorize transaction online to issuer or offline via CHIP (< EUR 200)

#### Needs Cardholder Verification (i.e. PIN Pad & PIN Entry)
- CAT 5: Optional for offline PIN verification, otherwise no CVM required
- CAT 7: Needs Cardholder Verification Required if:
- CAT 8: Needs a secure PIN Entry Device for online or offline PIN
- CAT 9: None

#### No Cardholder Verification Required if:
- CAT 5: CDCVM enabled; or a Contactless Transaction < CVM Limit
- CAT 7: Contactless CDCVM enabled; or a Contactless or GPS Transaction is < CVM Limit
- CAT 8: None
- CAT 9: None

#### MCC or Industry Restrictions, if applicable
- CAT 5: None
- CAT 7: None
- CAT 8: None

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* Contactless only is limited to certain industries only
* Offline CHIP Authorization possible in Europe Region for < EUR 200
Authorization Types, their Definitions and Requirements applicable to all Terminal Types

Merchants or Acquirers in the Europe Region must ensure that any authorization request for any amount greater than zero is identified as either a preauthorization or as a final authorization.*

Pre-Authorizations*

In the Europe Region, a transaction should be identified as a Mastercard or Debit Mastercard POS Transaction authorization request or a Card-not-Present Maestro POS Transaction as a preauthorization if:

1. Authorization is requested for an estimated amount that is greater than zero;

OR

2. The Transaction might not be completed for reasons other than technical failure or lack of full Issuer approval; for example:
   a. When the Cardholder will be offered the choice at a later time to complete the Transaction with another payment means (such as when checking out of a hotel or returning a rental car);
   b. When the products ordered by the Cardholder might be later found to be out of stock; or
   c. If the mobile phone number for which the Cardholder has requested a top-up is later found not to exist.

NOTE: All clearing messages corresponding to a preauthorization must be presented within 30 calendar days for a Mastercard or Debit Mastercard and 7 Calendar Days for a Maestro of the authorization approval date

Final Authorizations*

In the Europe Region, any authorization request for an amount greater than zero is identified as a final authorization if:

1. The Transaction may no longer be cancelled after the authorization request is approved in full by the Issuer (excluding non-completion for technical reasons such as telecommunications failure or POS Terminal failure);

AND

2. The authorization being requested is for the final Transaction amount.

NOTE: All clearing messages corresponding to a final authorization for either Mastercard or Maestro must be presented within 7 Calendar Days of the authorization approval date

*See Transaction Processing Rules, Chapter 2.1, 2.5, 2.7 and, Europe Region Sections
Sample Transaction Flows for Pre-Authorizations

If you know the Final Amount, then use a Final Authorization.

Pre-Authorizations are for estimated amounts. Incremental Pre-Authorizations extend or increase the original pre-authorization amount or time frame.

### Pre-Authorizations

1. **A**  
   - Cardholder is provided with an estimated Amount EUR X.XX

2. **B**  
   - Online Pre-Auth Request 0100 message for the Est. Amount

3. **C**  
   - Receive Auth Response 0110  
     - Approval Msg in DE 39
   - **4808: Chargeback Protection Period**
     - Mastercard: 30 Calendar Days to submit First Presentment  
     - Maestro (CNP only): 7 Calendar Days to submit First Presentment

4. **D**  
   - Submit a full or partial reversal (0400) if applicable, then First Presentment as a 1240 message

**NOTE 1:** If no incremental Pre-Auth or First Presentment is submitted within the CPP timeframes, then a NEW Pre-Auth or Final Authorization request is required.

**NOTE 2:** If the Transaction is cancelled or the Final Amount is less than the original Pre-Authorization estimated Amount, then a Full or Partial Reversal Message is mandatory, except if within 24 hours of submitting the First Presentment OR the Chargeback Protection Period has expired.

### Incremental Pre-Authorization

An incremental pre-authorization "extends" the original pre-authorization Chargeback Protection period for either:

- The originally estimated amount;  
- OR  
  - Incrementally increases the original amount by an incremental amount

**4808: Chargeback Protection Period extension** if submitted within the original timeframes AND for the same original estimated amount or an incremental amount – see below

Submit an incremental pre-authorization Msg 0100 within Timeframes, and submit DE48, SE 63 with values from original 0110 response msg.

- DE63, SF1  
- DE63, SF2  
- DE15

Include an Amount of EUR 0.00 if to extend the Chargeback Protection Period for same original estimated amount EUR X.XX;

**OR**

Include incremental Amount of EUR Y.YY if to extend the Chargeback Protection for the incremental amount above the original amount of EUR X.XX

Submit a full or partial reversal (0400) if applicable, then First Presentment as a 1240 message.
Sample Transaction Flows for Pre-Authorizations

If you know the Final Amount, then use a Final Authorization

CAT 1: Automated Fuel Dispenser

A. Cardholder is provided with an estimated Amount EUR X.XX

B. Online Pre-Auth Request 0100 message for the estimated Amount

C. Receive Auth Response 0110 Approval Msg in DE 39

D. Cardholder completes dispensing fuel, final amount known

E. Submit an Auth Advice Msg 0120 with final amount & critical data elements within:
   - 20 Min for Maestro
   - 60 Min for Mastercard

F. Receive Auth Advice Response 0130 Msg

G. Submit First Presentment as a 1240 message

**See most recent Mastercard Quick Reference Booklet for then actual CVM limits**

Transit: Aggregated Contactless Transit

These transit transactions are limited to MCC 4111, 4131 and 4784 and combine one or more contactless taps performed with one contactless account number and with one transit merchant

A. Cardholder taps for an amount not to exceed the applicable CVM** limit (e.g. < EUR 25)

B. Online Pre-Auth Request 0100 message for an estimated Amount (e.g EUR 25) less than or equal to CVM limit

C. Receive Auth Response 0110 Approval Msg in DE 39

D. Receive Auth Advice Response 0130 Msg

E. The Cardholder makes subsequent taps for additional rides. The combined amount is “aggregated” but not to exceed the approved amount and Chargeback Protection Period

4808: Chargeback Protection Period

Mastercard: 30 Calendar Days to submit First Presentment
Maestro: 7 Calendar Days to submit First Presentment

F. Submit an Auth Advice msg 0120 with final amount & critical data elements within:
   - 20 Min for Maestro
   - 60 Min for Mastercard

E. No
   - Full amount of Pre-Auth reached?

F. Submit First Presentment as a 1240 msg

E. Yes
   - Submit First Presentment as a 1240 msg

**See most recent Maestro Quick Reference Booklet for then actual CVM limits**
Final Authorization Flows for a Final Amount

Final Authorizations are for a final amount. These may also be used for Mastercard Transit Transactions where there is pre-funding or real-time approval.

Pre-Authorizations

A. Cardholder “Selects First” or is provided with an FINAL Amount EUR X.XX

B. Online Final Auth Request 0100 for the Final Amount

C. Receive Auth Response 0110 Approval Msg in DE 39

D. Submit First Presentment as a 1240 message

Transit: Pre-Funded or Real-Time

- Pre-Funded Transit Transactions
  Occurs when a cardholder purchases value redeemable for future travel with a transit merchant. The purchased value is held by the transit merchant in a separate account. The merchant sends a Final Authorization Request 0100 for the full amount of the transaction.

- Real-time Authorized Transit Transactions
  Occurs when the transit operator generates a Final Authorization Request 0100 message each time a cardholder uses their card or device at a transit terminal for the full amount of the transaction.