Visa U.S. Merchant Contactless Chip Deployment Quick Reference Guide

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To support the migration to EMV® contactless for U.S. merchants, Visa has streamlined its U.S. acquirer contactless chip (also known as quick Visa Smart Debit/Credit or qVSDC) Global Level 3 (L3) testing for terminal devices that are already certified for EMV contact chip. For merchants that do not currently accept EMV contact chip, Visa strongly recommends certifying the terminal for both qVSDC and Quick Chip at the same time to reduce development, the number of required test cases, and testing cycles. As a reminder, U.S. merchants that accept contactless must actively enable qVSDC. Support of MSD contactless is strictly prohibited and may result in compliance action against the acquirer. This document describes merchant qVSDC deployment along with optimized and required terminal settings.

Learning and Planning

Regardless of a merchant's current acceptance technology, Visa strongly recommends that merchants adopt qVSDC together with Quick Chip to ensure an optimal POS experience and streamlined testing requirements.

- Merchants new to EMV or that only accept contact EMV should adopt qVSDC and Quick Chip
- Any merchants still accepting MSD contactless must upgrade to EMV Contactless i.e., qVSDC and disable the MSD path per the Visa acceptance rules. Details can be found in the January 2019 EMV Newsletter
- Review relevant Visa resources for learning:
    - Visa EMV Newsletters and other EMV learning resources
    - Quick Chip Implementation Steps For best POS experience and streamlined testing, qVSDC and Quick Chip implementations go hand in hand
    - Visa Minimum U.S. Online Only Terminal Configuration describes Visa's recommended terminal settings that apply both to contact and contactless acceptance
    - Visa Core Rules ID# 0028045 contains information on contactless acceptance requirements
    - Transaction Acceptance Device Guide and U.S. Acquirer Implementation Guide for more technical information

Testing Considerations

Visa's streamlined U.S. acquirer contactless chip L3 self-testing process provides an autonomous, simple, and fast process to migrate to qVSDC:

- For devices that are currently certified for EMV contact chip, Visa does not require formal L3 testing with the Acquirer/Processor when adding qVSDC. Only self-testing is required. See the EMV Newsletter October/November 2018 for required testing steps for your particular starting point. Refer to the Visa U.S. EMV Chip Terminal Testing Requirements for additional details on test and certification.
- Use an EMVCo-Qualified and Visa-Confirmed L3 Test Tool to perform the applicable L3 test cases following the Visa Global L3 Testing approach.

There is no requirement to perform L3 testing for all the payment networks at the same time. Visa's contactless kernel is independent from the other payment networks' kernels. Therefore, replacing Visa's legacy MSD contactless with qVSDC can be completed independently from other brands. Importantly, if the Visa Level 2 (L2) kernel already supports qVSDC, only a re-configuration of the L2 kernel is required, with no additional L2 testing.[1]

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[1] Existing terminals can remain in market beyond the approval expiration as long as there are no changes to the kernel or chip processing logic. This would include existing inventory already in the distribution channel as long as there are no interoperability issues. Review with your kernel provider, as the provider may need to update the kernel. Refer to the Kernel Management Guidelines webcast available at http://www.emv-connection.com/emv-resources/ and the latest version of EMVCo Type Approval Bulletin No. 11 for more details. However, new terminals should be deployed with the updated kernel.

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Contactless Cardholder Verification Methods (CVM) & Terminal Setting Recommendations

U.S. Terminal CVM Configuration Recommendations for Contactless

How a U.S. contactless terminal is configured for CVM (Cardholder Verification Methods) can have an impact on the cardholder experience at the POS. This includes CDCVM (Cardholder Device CVM) where the cardholder is authenticated on the cardholder's own device with a fingerprint, facial recognition, or other method. Unlike EMV contact chip where the card controls CVM priority, in contactless the CVM priority is controlled by the Visa specifications. Therefore, the Terminal Transaction Qualifiers (TTQs) should be optimized to maximize the tap experience for the greatest number of transactions.[2] If there is not a matching CVM, the transaction will be attempted via the contact interface.

The following tables and settings are designed to provide the optimal Tap to Pay experience for most scenarios. Settings are provided for both Quick Chip, that uses a fixed amount (usually zero or one cent), and regular contactless where certain TTQ bits are conditional based on the amount of the transaction. For a transaction that selects the Visa AID, the Visa recommendations for CVM limits and terminal settings will depend on whether the final amount is known at the time the cardholder can tap.

Transactions That Select the Visa AID

	Amount not Known at Time of Tap[3] (Quick Chip)	Final Amount Known at Time of Tap
CVM Limit	High ATV: Set CVM Limit to zero Low ATV: Set CVM Limit to maximum amount	Set CVM Limit to $200.00 or a higher amount
Mobile Transactions	CDCVM applies above CVM Limit[4]	CDCVM applies above CVM Limit[4]
Signature preferring cards	Optionally capture signature	Optionally capture signature if above CVM Limit
Online PIN preferring cards[5]	Capture PIN while scanning goods	Capture PIN if above CVM Limit
Offline PIN preferring cards	Some foreign cards may require insertion	Card may require insertion if above CVM Limit

Notes on CVM Limit in the table above:
1. Setting the CVM Limit to zero for High Average Ticket Value (ATV) environments will avoid potential declines from foreign issuers by forcing a dip on Offline PIN cards or prompting for Online PIN.
2. Setting the CVM Limit to maximum amount will allow Tap to Pay to proceed on foreign cards but may result in a decline on these cards on high final amounts. If average ticket values are generally low (e.g., less than $200.00), this will not be a problem. Foreign cardholders are accustomed to inserting cards for high value transactions.
3. If the final amount is known at time of tap, set the CVM Limit to an amount higher than $200.00. Do not set a limit lower than $200.00. Visa Rules protect from counterfeit or lost / stolen disputes on EMV contactless transactions where full chip data is provided in the authorization message.

Transactions That Select the Common AID

For a transaction that selects the Common AID, Visa does not make specific recommendations related to CVM limits. The merchant has the option to set the CVM Limit to zero and always prompt for PIN, as long as a PIN opt out mechanism is available. The merchant may alternatively set the CVM Limit to the maximum value to minimize transaction times and avoid contact with the PIN pad. Note that Visa does NOT require a CVM limit to be set in the U.S. To avoid prompting for CVM, set the CVM Limit to the maximum amount, e.g., $9999.00, or disable it in the software. If the merchant chooses to set the CVM Limit for business reasons such as PIN steering, then follow the guidance in the table below:

	Amount not Known at Time of Tap[3] (Quick Chip)	Amount Known at Time of Tap
CVM Limit	CVM Limit as per business requirements	Optionally set a CVM limit per merchant business needs
Mobile Transactions	Capture PIN while scanning goods	Capture PIN if over CVM Limit
Online PIN preferring cards	Capture PIN while scanning goods	Capture PIN if over CVM Limit
Offline PIN preferring cards	N/A	N/A

Terminal Transaction Qualifiers (TTQ) and other Terminal Settings

The correct TTQ are critical for the optimal contactless experience. Deviations from the recommended TTQ settings should be performed in consultation with the Visa U.S. product office. Following are the recommended settings to ensure that cardholders have the smoothest experience possible at the POS:

- For the Visa AID, the Terminal Transaction Qualifiers (TTQs, tag '9F 66') recommended settings are '32 80 40 00', which corresponds to the following: [6][7]

    - support qVSDC

    - NOT support MSD

    - support EMV Contact chip[8]

    - optionally support Online PIN (in which case, the TTQs should be '36 80 40 00') [8]

    - support Signature

    - NOT support ODA for online authorization[8]

    - support CDCVM

    - NOT support Offline PIN

- Common AID should have the same settings for the Visa AID but Online PIN support is required for PIN steering merchants, together with an appropriate CVM limit above which PIN steering is desired. Note a PIN opt out mechanism is required for both contact and contactless transactions.

Additional notes:

- qVSDC and Quick Chip both allow "pre-tap"/ "pre-dip" which allows the cardholder to tap or insert at any time at the POS.

    – In unattended environments such as AFD, signature should be indicated as supported, even though it will not be captured.

- On Offline PIN preferring cards, typically from chip and PIN markets, a CVM Limit may force a contact chip transaction if the issuer has set up the card in this manner.

- When supporting Interlink or Plus AIDs, these must be configured with Reader CVM Required Limit = $0 to ensure Online PIN is always captured for these transactions.

- Visa does not permit a Contactless Transaction Limit (amount above which a transaction cannot be made over the contactless interface) which must therefore be disabled. Contactless transaction limits must not be confused with CVM limits.

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[2] For unattended terminals with higher value transactions, to prevent unnecessary declines, merchants should set the CVM limit to zero and TTQs to support Signature, Offline and Online PIN. Additionally, although signature is unusual at UATs and will not be prompted or captured, unattended terminals should indicate support for signature to improve interoperability and maximize contactless acceptance on U.S. credit cards. Offline PIN preferring cards (generally from Europe and CEMEA) will be prompted to insert and provide PIN. This is common practice in those markets, so the cardholders will know how to proceed.

[3] Also known as "pre-tap"/ "pre-dip" or "Quick Chip".

[4] Some mobile wallets force CDCVM for all transactions.

[5] Only a very small number of Visa cards are Online PIN preferring on the Visa AID. U.S. Common AID is Online PIN preferring.

[6] Set Floor Limit to zero to always go online. This will cause the bit "Online Cryptogram Required" to be set. Alternatively, the "Online Cryptogram Required"-bit may be set explicitly as a configuration option. Zero floor limit does not preclude deferred authorization integrations.

[7] There are specific TTQ settings for Tap to Phone. Refer to the *Visa Ready Tap to Phone Solution Requirements* for details.

[8] Transit turnstiles are out of scope for this document. For transit specific settings, see *Visa Urban Mobility Terminal Requirements and Implementation Guide* for more details.

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