DPS POS Unattended Integration Certification Request and Test Scripts

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98 Anzac Avenue
PO Box 8400
Auckland, 1150
New Zealand
www.paymentexpress.com

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DOCUMENT REVISION INFORMATION

Version	Date	Amended By	Revision Information
0.1	12/06/12	Stuart Parton	Initial Revision
0.2	10/07/12	Stuart Parton	Removal of 2 test cases, minor changes in wording.
0.3		Tristan Worley	Addition of Test case tables
0.4	13/11/14	Tehniat Khalid	Addition of POS details

STAKEHOLDERS

Name	Business	Role

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1 INTRODUCTION

In order for DPS to sign off on a POS self-certification detailed logs must be provided as described for each test case. The ability to provide these logs is seen as an important feature for troubleshooting any future problems that might arise. As such it is a requirement that a POS even when deployed to a production environment have the ability to turn on logging at will. Failure to be able to provide suitable logs for any given test case will result in a failure to achieve certification.

1.1 POS DETAILS

1.1.1 VENDOR DETAILS

POS Vendor:
Technical Contact Name:
Phone Number:
Email:
Job Title:

Trading Name:
Other Contact Name:
Phone Number:
Email:
Job Title:

POS INFORMATION

1.1.2 POS Name and Version

POS Name:
Version Number:

1.1.3 Integration Method

Please state which integration the POS uses (e.g. ActiveX, XML interface): Serial Integration

Please give any details of complications in the integration (e.g. ActiveX wrappers):

Does the POS use DPS' dialogue boxes to display transaction messages?

1.1.4 Printing

Does the POS print the EFTPOS receipts, or does PX EFTPOS print EFTPOS receipts?

If the POS prints the EFTPOS receipts, please explain why:

What printers and printing systems does the POS support?

1.1.5 POS Environment

Will the POS be in an attended, semi-attended, or unattended environment?

If the POS will not be in an attended environment, please give brief details of any correspondence with DPS about this:

1.1.6 Transaction Flow

Fixed price goods
Variable price goods

2 TEST CASE SUMMARY

Test Case	Description	Pass / Fail / Skipped	Comments
1	ENABLE COMMUNICATION		
2	SET CONFIGURATION		
3	SCR RE-INITIALISATION		
4	LOGON MESSAGES FORWARDED TO DPS HOST SUCCESSFULLY		
5	Remote FIRMWARE UPDATE		
6	AUTH APPROVED – VEND SUCCESSFUL		
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13	AUTH REQUESTED: NO RESPONSE FROM HOST		
14	AUTH REQUESTED: NO RESPONSE FROM SCR		
15	COMPLETE REQUESTED: NO RESPONSE FROM SCR		
16	VOID REQUESTED: NO RESPONSE FROM SCR		
17A	AUTH REQUESTED: POS RESTART DURING TRANSACTION, BEFORE VEND		
17B	AUTH REQUESTED: POS RESTART DURING TRANSACTION, AFTER VEND		
18	CORRECT PROMPTS DISPLAYED FOR AN EMV CARD TRANSACTION		
19	CARD INSERTED PRIOR TO TRANSACTION REQUEST		
20	BAD CARD READ (CARD UPSIDE DOWN)		
21	EMV CARD REMOVED EARLY		
22	CARD READ TIMEOUT: NO CARD INSERTED		
23	RECEIPT PRINTING ON DEMAND		
24	RECEIPT PRINTING FOR EACH TRANSACTION		
25	RECEIPT PRINTING UNAVAILABLE		

26	BAD DATA IN THE SERIAL PORT BUFFER		
27	BAD DATA IN THE SERIAL PORT BUFFER		
28	TWO MESSAGES WITHIN A SINGLE READ		
29	READ FROM THE SERIAL PORT CONTAINS ONLY A PARTIAL MESSAGE		
30	UNEXPECTED COMPORT CLOSURE		

3 POS INITIALISATION AND MAINTENANCE

Objective: To ensure the **Point of Sale** (POS) system successfully initialises the SCR200 following each start up, and can manage post-installation maintenance tasks.

3.1.1 ENABLE COMMUNICATION (MANDATORY)

If a POS handles the communication of messages to the DPS host a "MSG~TXEN~XXX~1~" or 'STS~GS1~X~ message should be sent to the SCR after powering it on, before sending any transaction related request(AUTH/COMP/VOID) to the SCR.

In order to test that the POS transmits messages from the SCR200 to the DPS HOST and back, you can force the SCR to request a logon by changing the value of 'Logon Interval' in the Card Acceptor Device Profile in PXMI.

To confirm:

- Following configuration, and after communication to the DPS web endpoint is established, the POS sends the enable *MSG~TXEN* or a 'STS~GS1~X~ command. Refer to POS logs to confirm.
- Pending SCR MSG messages, e.g. logon message, are handled and transmitted to DPS host.

Log should contain the TXEN request and response

Test Case 1 Correct start up procedure	
Objective	To ensure the SCR is correctly informed of the POSs ability to transmit messages to the DPS host at power on.
Applicability	Applies to all POS' not using the SCR controller
User Action	- Start up the POS with the SCR200 attached (and initiate a transaction if necessary)
Pass Criteria	- Upon start up the POS connects to the reader and sends a MSG~TXEN~XXX~1~ or STS~GS1~1~ message before sending any transaction related request (AUTH/COMP/VOID) to the SCR. -
Results	
Logs	
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3.1.2 SET CONFIGURATION (MANDATORY)

The SCR requires its configuration settings be defined when it first starts up. When powering on a SCR the POS should send a CFG~SETD message as part of its SCR start-up procedure. But this should not be sent before a MSG~TXEN message.

To confirm:

- The POS sends the CFG~SETD command. May have to refer to POS logs.
- A unique device ID and vendor specific vendor id is configured.
- The appropriate currency is requested.

Log should contain the SETD request and response

Test Case 2 **Correct start up procedure – SETD**	
Objective	To ensure the SCR is initiated correctly upon POS start up
Applicability	Applies to all POS' not using the SCR controller
User Action	- Start up the POS with the SCR200 attached
Pass Criteria	- SETD settings are appropriate for POS' capabilities. Please list the POS capabilities, and provide a log of the SETD message sent to the SCR - The SCR responds to the SETD with a reco of '00'
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3.1.3 SCR RE-INITIALISATION (MANDATORY)

In some scenarios it may be feasible for the SCR to have lost power when the POS has not. This test ensures that should the SCR lose power, and therefore require re-initialisation the POS can correctly interpret the response codes provided by the SCR as meaning it needs to be initialised and perform initialisation. It is likely this scenario would be detected at transaction time. As such it should not prevent the POS processing a successful transaction.

To confirm:

- The POS correctly interprets and responds to VZ and VE response codes
- To ensure the SCRs need to be initialised does not prevent the POS completing a transaction. The user should not have to initiate a transaction twice.

Test Case 3 **SCR re-initialisation**	
Objective	To ensure the POS correctly interprets a VZ and VE response codes
Applicability	All POS'
User Action	- Power cycle the SCR (but not the POS) - Initiate a transaction - Insert and remove card when prompted
Pass Criteria	- When the response code to the Auth request is VZ the POS sends a TXEN = 1 message to let reader know the coms to DPS are up, and reattempts the Auth request - When the response to the Auth request is VE the POS sends an appropriate SETD message. And then reattempts the Auth message - The third Auth attempt successfully prompts to insert card. - The end of the transaction is out of scope

	- It would also be acceptable behaviour for the POS to send the TXEN=1 and SETD messages together(after receiving the first VZ reco) before reattempting the Auth.
Results	
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3.1.4 REGULAR LOGON MESSAGES (MANDATORY)

The SCR requires communication to the DPS host to function correctly. A periodic logon message is sent to the host to check if any settings updates are available. A POS must be able to correctly transmit these messages (msg~tx) to the host, and return any response back to the SCR. A logon may also be triggered by altering the DeviceId in the SETD command (TXEN=1 must have been set).

To confirm:

- Every 2 minutes (by default) the SCR200 will request that the POS transmit a logon message to the DPS host. Check POS logs to ensure these regular unsolicited messages are being transmitted.

Test Case 4 Logon messages forwarded to DPS host successfully	
Objective	To ensure while TXEN=1 all hello messages are correctly passed through to the DPS Host
Applicability	All POS' handling host communications
User Action	- The SCRs profile must have its logon interval set to 10 minutes or less(2 mins recommended) - After initial start-up leave POS idle for 20 minute and retrieve logs
Pass Criteria	- Logs show hello msg~tx messages received from SCR are passed through to the DPS host successfully - Host responses are successfully passed back to the SCR in MSG~RX messages - Please provide the host communication interface(s) supported
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3.1.5 FIRMWARE UPDATE (MANDATORY)

Updates to the SCR200 firmware can be "pushed down" from the DPS host at any time so it is important that the POS is capable of handling by passing on the update request when in an idle state. The SCR200 serial interface also has a command (FINS) to force an install of the install when its download has completed. When an update is configured for the SCR it will be notified of its availability at its next logon, the SCR will then proceed to download the update immediately. This requires the SCR is powered on to perform the remote update.

To ensure a POS does not interrupt a firmware download it is recommended (but not mandatory) that a POS checks the 'MsgCount' field in the response to a GS1 request, if it is a non 0 value a message to or from the DPS host is pending and the SCR should not be powered off.

When the firmware download is complete but the new firmware not installed the 'FirmwarePending' value in a GS1 response will be set to 1. The SCR will eventually install the new firmware automatically, but it can be forced to install immediately by sending a FINS command (CFG~FINS~xxx~).

To confirm:

That the firmware updates, and confirm that the update is successful, and does not adversely affect the POS.

- If the POS supports the FINS command it uses it at an appropriate time.

Test Case 5 Remote Updating	
Objective	To ensure a remote update of the SCR200s firmware does not impact on the POSs ability to function normally.
Applicability	All POS
User Action	- Request DPS configure a firmware update for your SCR - Perform a STS~GSX request to confirm the starting FW version - Leave the SCR to download and update automatically - When the FW has been applied perform another STS~ GSX request to verify the update has been applied -
Pass Criteria	- The remote update is successful - If FINS supported it is sent to SCR at an appropriate time
Results	
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4 TRANSACTION SCENARIOS

4.1.1 AUTH APPROVED – VEND SUCCESSFUL (MANDATORY)

In the general approved case the POS device will interpret the successful AUTH result, vend the correct product and quantity and then immediately COMPLETE the transaction for the correct final amount.

To confirm:

- The AUTH amount is a suitable value, for example, the highest value of all the available goods if the amount is not known prior to the initial transaction.
- The AUTH result is interpreted as approved and is clearly and unambiguously displayed to the operator. The immediate vending of goods is an appropriate indicator, or the obvious enablement of item selection functionality, e.g. enabling backlighting of buttons. It is not advisable to display the approved amount however, as this may not reflect the final amount.
    - Once authorised, but prior to vending, it should not generally be possible to perform a second AUTH transaction. If this capability is required then an appropriate strategy must be discussed with DPS during development.
- Goods are vended for the appropriate amount if item selection is predetermined.
- In the case manual selection of goods, it should not be possible to choose a type or quantity of goods for a sum greater than the authorised amount.
- The COMPLETE transaction is immediately sent following the successful vend and not before.
- The COMPLETE is for the correct final amount. In the case that the final vend amount is less than the original AUTH, the amount is the vend amount, and not the authorised amount.

Test Case 6 Successful Transaction

Objective	To ensure successful processing of a transaction from start to finish
Applicability	All POS
User Action	- Initiate a transaction with the POS using the test card 4111111111111111 for any amount - Select a product to vend - Customer requests a receipt if prompted
Pass Criteria	- Card used was 4111111111111111 - Auth request was successful - Vend was successful - Complete is processed successfully - Receipt is printed successfully – Please provide a copy
Results	
Logs	
Notes	

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4.1.2 AUTH APPROVED – VEND PARTIALLY FULFILLED (CONDITIONAL)

As above, if the device supports partial fulfilment of a vend request, for example a vend request for 5 items but only 4 available.

To confirm:

- The COMPLETE amount is for the amount actually vended, and not the vend amount requested.
- The customer should be notified prior to vending that the total order cannot be filled, and presented with the options of cancelling the transaction or proceeding.

Test Case 7 Successful Transaction 2	
Objective	To ensure successful processing of a transaction from start to finish
Applicability	All POS
User Action	- Initiate a transaction with the POS using the test card 4111111111111111 for any amount - Select a product to vend - Customer requests a receipt if prompted
Pass Criteria	- Card used was 4111111111111111 - Auth request was successful - Vend was successful - Complete is processed successfully - Receipt is printed successfully – Please provide a copy
Results	
Logs	
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4.1.3 AUTH DECLINED (MANDATORY)

In the general case where the bank has declined the transaction we want to ensure that the card holder is clearly aware of the fact the transaction declined, and that no vending of goods can occur.

To confirm:

- The AUTH result is interpreted as declined and this is clearly and unambiguously displayed to the operator.
- It is not possible to obtain or select items from the vending device.
- In the case of a bank decline it may not be appropriate to invite the card holder to retry the transaction with the same card; however suggesting they try an alternative card is acceptable.

Test Case 8 Declined Auth	
Objective	To ensure Appropriate POS behaviour when the initial Auth is declined
Applicability	All POS
User Action	- Initiate a transaction and insert the card 4999999999999202 when prompted - If prompted for a receipt select yes.
Pass Criteria	- The card used was 4999999999999202 - The POS correctly interprets the transaction result - No product is vended - A receipt is printed that clearly shows the card was not charged and or the equivalent is displayed on screen.
Results	
Logs	
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4.1.4 AUTH APPROVED – VEND UNSUCCESSFUL (MANDATORY)

One risk to unattended payment devices is the case of technical failure after payment which prevents the card holder from receiving goods. To mitigate this risk the SCR requires cancellation of payment through the use of the VOID transaction type.

To confirm:

- The POS device is, within reason, capable of detecting a failure to vend items.
- The device will send an immediate VOID transaction request to the SCR.
- The device will display a message to the card holder indicating that a technical failure has occurred and that the transaction has been reversed. Printing of a VOID receipt is an example of a suitable indicator.
- Recommended: the device should prevent further transactions from occurring until the technical issue is resolved.

Test case 9 Unsuccessful Vend	
Objective	To ensure correct POS behaviour for the case of an unsuccessful vend/action by the POS
Applicability	All POS performing an Auth →Vend/Action →Complete model
User Action	- Initiate a transaction using test card 4111111111111111 - Take such actions that will trigger the vend to fail in an unexpected way. Note a cancel button press is not acceptable for this test case
Pass Criteria	- The initial Auth was successful - The Vend/Action failed

	- After failure to vend/perform action the POS submits a Void request to the SCR - It is made clear to the cardholder the transaction has been reversed and no funds have been removed from their card. - Void is successfully submitted to DPS host
Results	
Logs	
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4.1.5 AUTH APPROVED – NO VEND ATTEMPTED (CONDITIONAL)

In the case that vending is not automatic, rather relying on a manual action from the user, the POS needs to cater for the situation that the card holder makes no selection. This is a balance between giving the card holder sufficient time to make a selection, and handling the situation where that card holder simply walks away without attempting to select an item.

To confirm:

- The POS device enforces a suitable time limit for selection, after which the device will automatically VOID the transaction.
- The user is aware of the time limit on selection, through a countdown or written instructions. This should also cater for the situation that a new user approaches the POS while the selection countdown is occurring.
- During the selection window it should not be possible for a second user to perform a transaction request.
- After the selection time out the POS should return to an idle state which prevents a subsequent (late) Vend request.

Test Case 10 No Product selection	
Objective	To ensure an Auth is voided if a cardholder fails to complete a transaction
Applicability	All POS where product selection occurs after initial Auth
User Action	- Initiate a transaction - Insert and remove test card 4111111111111111 when prompted - When prompted for product selection, make no selection and let the POS timeout
Pass Criteria	- The Auth is successful - On timeout of product selection the POS cancels the transaction and sends a Void to the SCR - The void successfully reaches the DPS host
Results	
Logs	
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4.1.6 AUTH IN PROGRESS – CANCEL REQUESTED (CONDITIONAL)

It is not required to offer the ability to cancel a transaction, and in many vending scenarios there is no need. If however there is a reasonable probably that the card holder may change their mind after authorisation, for example, if the user's desired item is out of stock, a cancel option may be appropriate.

To confirm:

- If a cancellation request occurs during processing of the AUTH transaction a VW result code is returned. The POS interprets this as a successful cancelation and determines that no further action is required.
- The successful cancelation result is reported the card holder through some suitable means.
- Vending of goods does not occur and any item selection indicators such as backlit buttons are disabled.

Test Case 11A **User Cancelled at AUTH in Progress (Before Card is inserted)**	
Objective	To ensure the POS correctly handles an AUTH response in the case of a user cancel button press, where the reco was VW
Applicability	All POS using a SCR200VM
User Action	- Initiate an Auth transaction - Before presenting card, press the cancel button
Pass Criteria	- The SCR response to the AUTH contains the reco VW - The POS correctly interprets the transaction as declined - No product is vended
Results	
Logs	
Notes	

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Test Case 11B **User Cancelled at AUTH in Progress (After Card is inserted)**	
Objective	To ensure the POS correctly handles an AUTH response in the case of a user cancel button press, where the reco was VW
Applicability	All POS using a SCR200 (non VM) where the POS hardware offers a cancel button
User Action	- Initiate an Auth transaction - After presenting card press the cancel button
Pass Criteria	- The POS correctly sends a STS~BTN~xxx~X~ message to the SCR - The SCR response to the AUTH contains the reco VW - The POS correctly interprets the transaction as declined - No product is vended
Results	
Logs	
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4.1.7 AUTH APPROVED – CANCEL REQUESTED (CONDITIONAL)

Test Case 12 **User Cancelled when VEND in Progress**	
Objective	To ensure a POS ignores a cancel button press if vend is in progress and cannot be stopped.

Applicability	All POS supporting VOIDs using SCR200VM
User Action	- Initiate a transaction - After the authorisation is approved select a product to vend - After the vending process begins, but before it can complete press the cancel button
Pass Criteria	- The Auth is approved - The cancel button press is recorded, but the POS does not act on it - The product is vended - No VOID is processed
Results	
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*There is potential for more test cases here to cater for varying Vending machine functionality, if your feel a test case should be added please let us know.

4.1.8 AUTH REQUESTED: TIMEOUT RECEIVED FROM SCR (MANDATORY)

A transaction time out due to a communication failure between the POS device and DPS transaction host is a scenario which can be expected to occur with reasonable frequency, given reliability issues inherit with the common internet connection methods available to unattended devices, such as 3G cellular. The financial integrity issues arising from transaction time outs are catered for internally by the SCR, but we are interested in confirming that the POS behaves appropriately also, and does not inhibit the SCR's attempt to void the timed out transaction.

To confirm:

- If the POS attempts to disconnect and reconnect the communications channel then it first sends a MSG TXEN message to the SCR advising that the POS is no longer in a state to send messages. ('Transmit Enable' parameter of '0')
- Once the POS has determined that communications have been restored, an additional MSG-TXEN message is sent to inform the SCR that it may now attempt to VOID the timed out transaction. ('Transmit Enable' parameter of '1')
- The POS interprets the transaction result as declined, and this result is clearly and unambiguously displayed to the operator.
- In this case it might be appropriate to advise the user to retry.

Test Case 13 Auth Request with Host Timeout	
Objective	To ensure the POS recovers from a network issue and correctly forwards on messages from the SCR to the DPS host.
Applicability	All POS
User Action	- Initiate a transaction but interfere with the POS' ability to communicate the request message to the DPS Host - Restore the POS' ability to communicate with the DPS host
Pass Criteria	- The SCR sends a msg~tx message to POS but the POS does not get a response from DPS host when tries to forward on the request - After 30 seconds the SCR timesout for the request and returns a U9 reco in its Auth response. And attempts to send a void (seen as another msg~tx message). - The Void attempt from the SCR is continually reattempted until the host communication is restored and the SCR received a matching MSG~RX for its message. - If the POS sends a MSG~TXEN~xxx~0~ message the SCR waits until a MSG~TXEN~xxx~1~ message is received before attempting to send any further msg~tx messages. And the POS correctly sends the

	MSG~TXEN~xxx~1~ message as soon as the connection to the DPS host is restored.
Results	
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5 EXCEPTION TRANSACTION SCENARIOS

5.1.1 AUTH REQUESTED: NO RESPONSE FROM SCR (MANDATORY)

Where an AUTH request is sent to the SCR but no AUTH response is received, it will not be apparent whether the transaction was approved or declined. The POS should not assume that the transaction has failed, but instead the POS must take steps to determine the result of the transaction.

To confirm:

- A suitable message is presented to the card holder indicating that the transaction has failed.
- The POS device checks the SCR status by sending a STS-GS1 get status message.
- If successful, the POS sends a TXN-GET1 message to retrieve the result of the transaction.
- If a record of the transaction exists and was approved, then the POS sends a VOID request.
- If the STS-GS1 message fails then the POS disables the card reader as a payment method.

Test Case 14 **SCR doesn't respond – Auth Request**	
Objective	To ensure the POS can correctly detect if the reader becomes unavailable and relay this to a user if necessary
Applicability	All POS not implementing status checking
User Action	- Unplug the SCR from the POS - Initiate a transaction and follow prompts
Pass Criteria	- The POS will send an Auth transaction to the SCR - Upon not receiving any response from the SCR the POS will provide a reader unavailable message to the user and suggest an alternative payment method if available. - Please provide details of interface behaviour
Results	
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5.1.2 COMPLETE REQUESTED: NO RESPONSE FROM SCR (MANDATORY)

Where a COMPLETE request is sent to the SCR but no COMPLETE response is received, it is not apparent whether the transaction was successfully finalised. In this situation the POS should not delay the card holder, or withhold goods, as the transaction can be safely resolved at a later point.

To confirm:

- It is not necessary to display any message to the card holder or perform any action which prevents the card holder completing the transaction and leaving.
- The POS sends a STS-GS1 message to determine if the SCR is still online.
- If a response is received to the status message, the POS re-tries the COMPLETE transaction. The SCR will determine if the COMPLETE was successful and request a message be sent, if appropriate.

Test Case 15 **SCR doesn't respond – Complete request**	
Objective	To ensure correct behaviour of POS if SCR becomes unresponsive when the POS attempts a completion
Applicability	ALL POS
User Action	- Initiate a transaction

	- When the authorisation has been confirmed unplug the SCR and attempt to vend a product - After the vend wait a couple of minutes and plug the SCR back in - Attempt another transaction to completion with a normal use scenario
Pass Criteria	- The Auth is successful - The vend is successful - The initial TXN~COMP message from POS to SCR does not get a response from the SCR. - Either the POS retries the Comp message when the SCR come back online Or - The POS passes a record of the COMP required to its management system so it can be processed manually at a later time. - The POS successfully recovers the SCR after it was unplugged and future transactions are successful
Results	
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5.1.3 VOID REQUESTED: NO RESPONSE FROM SCR (MANDATORY)

Where a VOID request is sent to the SCR but no VOID response is received, it is not apparent whether the transaction was successfully voided. As with a COMPLETE the POS should not assume that the request was successful, instead the POS must retry the VOID until the result is received.

To confirm:

- It is not necessary to display any message to the card holder or perform any action which prevents the card holder completing the transaction and leaving.
- The POS sends a STS-GS1 message to determine if the SCR is still online.
- If a response to the status message is received, the POS retries the VOID request.

Test Case 16 SCR doesn't respond – Void Request	
Objective	To ensure correct behaviour of POS is SCR becomes unresponsive when the POS attempts a VOID
Applicability	All POS supporting Voids
User Action	- Initiate a transaction - When the authorisation has been confirmed but a product selection not made unplug the SCR and press the cancel button - Wait a couple of minutes and plug the SCR back in - Process another transaction to completion with a normal usage scenario
Pass Criteria	- The Auth is approved - No product is vended - The POS attempts to resend the Void to the SCR once coms are re-established, and this is successful - The follow up transaction attempt was successful
Results	
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5.1.4 AUTH REQUESTED: POS RESTART DURING TRANSACTION (MANDATORY)

It may be possible in an exceptional case for the POS to restart while a transaction is in progress, for example due to a software exception/crash, or a power fluctuation. The POS will generally restart and recover in this situation and as part of that recovery the POS is expected to check for the presence of unresolved transactions, and take steps to resolve them.

To confirm:

- Following a POS crash, the POS will determine whether it has an in progress transaction, and if so, call the TXN-GET1 message to retrieve the transaction state.
- Where the transaction state is authorised, and goods have been vended then the POS should COMPLETE the transaction.
- Where the transaction state is authorised, and goods have not been vended (or this information cannot be determined) then the POS should VOID the AUTH transaction.
- If the transaction is voided then an appropriate message should be displayed to the card holder indicating the transaction was Voided.

Test Case 17A **Power failure after Auth, before Vend**	
Objective	To ensure a POS correctly recovers from a power failure that occurred once an AUTH request is sent to the SCR, but before Vending the product
Applicability	All POS
User Action	- Initiate an Auth transaction - When prompted to insert a card, insert card. Remove card when prompted. - Trigger a power failure, just before the ticket is printed. - POS restarts
Pass Criteria	- Logs show the Auth approved message from the SCR to the POS. - POS must detect that a product has not been vended for the transaction and must request a Void to the SCR - A declined result is clearly shown to user - The POS becomes ready for a new transaction to be initiated
Results	
Logs	
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Test Case 17B **Power failure after Vend, before Complete**	
Objective	To ensure correct behaviour of a POS when a power failure occurs after a successful Auth and Vend, but before a Completion is sent.
Applicability	All POS'
User Action	- Initiate a transaction - Insert and remove test card 4111111111111111 when prompted - After the Auth has processed, and Product is vended, trigger a power failure. - Restart the POS
Pass Criteria	- The logging shows an txn~auth result was sent to the POS with a successful reco (00) - POS Vends the product.

	- The power failure occurred before the POS could request a 'TXN~COMP - The POS restarted successfully, and initiated the SCR. - The POS recognises there was a transaction in progress when power failure occurred. Recognising that Vend was successful the POS sends a COMP to the SCR to COMPLETE the Auth.
Results	
Logs	
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6 CARD READ SCENARIOS

Objective: It is important for the POS to follow the SCR display instructions with regards to card holder instructions, as a variety of different instruction sets can be required depending on the card used, and the card holder's initial action.

6.1.1 CORRECT PROMPTS DISPLAYED FOR AN EMV CARD TRANSACTION (MANDATORY)

Even if a POS goes live without EMV support initially, it is important to future-proof the POS such that it is capable of reporting the correct instructions for an EMV card.

To confirm:

- The POS displays 'Insert Card' or similar, but does not encourage an immediate insert and removal of the card.
- Following the AUTH result, the card holder is advised to remove the card before vending occurs.

Test case 18 Card Read EMV	
Objective	To ensure the Cardholder is not prompted to remove an EMV card until prompted to by SCR
Applicability	All POS intending to support EMV transactions that also have their own display
User Action	- Initiate a transaction and follow prompts - Wen prompted to insert a EMV capable chip card - Remove card when prompted
Pass Criteria	- The POS displays the dsp~pdsp messages received from the SCR verbatim - The POS does not display any other prompts to remove the card except those passed from the SCR
Results	
Logs	
Notes	

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6.1.2 CARD INSERTED PRIOR TO TRANSACTION REQUEST (MANDATORY)

If a card is detected to be inserted before the transaction request it should be assumed that a previous user of the system has left their card in the reader and the transaction should not take place.

To confirm:

- The POS interprets from the AUTH transaction response that a card is already present and displays a suitable explanation to the user of the system.

Test Case 19 Early Card Insertion	
Objective	To ensure a POS can handle a card insertion while idle
Applicability	All POS
User Action	- When the POS and SCR is idle insert a card - Remove card when prompted and follow instructions to vend a product
Pass Criteria	When the card is inserted the SCR will send a l1~cdi~xxx~1~ message the POS will either 1. Ignore the cdi message (not recommended) 2. Inform the user that a card is already present in the reader. Display an appropriate message to the user. Prompt the user to remove the inserted card and insert the user's card if the already inserted card does not belong to the user.

Results	
Logs	
Notes	

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6.1.3 BAD CARD READ (CARD UPSIDE DOWN) (MANDATORY)

This test ensures that the POS handles the case of a bad card read response appropriately.

To confirm:

- The POS interprets from the AUTH transaction response that a bad card read occurred, and a suitable informational message is displayed to the user.
- This outcome is treated as a failed transaction.

Test Case 20 Bad Card Read	
Objective	To ensure a POS interprets a bad card read (reco V6) in an appropriate manner
Applicability	To all POS
User Action	- Initiate a transaction and when prompted insert the payment card around the wrong way
Pass Criteria	- The SCRs response to the Auth contained the reco V6 - The POS recognised the transaction was not successful, and vended no product - It is recommended the POS prompt the cardholder to insert card again.
Results	
Logs	
Notes	

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6.1.4 EMV CARD REMOVED EARLY (MANDATORY)

This test ensures that the POS handles the case where an EMV card is removed before the transaction is finalised.

To confirm:

The POS interprets from the AUTH transaction response that the EMV card was removed early, and a suitable informational message is displayed to the user.

This outcome is treated as a failed transaction.

Test Case 21	
Objective	To ensure a POS interprets an early removal of a chip card appropriately
Applicability	To all POS supporting EMV
User Action	Initiate a transaction and when prompted insert a chip card Remove the chip card prior to the Auth being approved
Pass Criteria	The SCRs response to the Auth contained the reco V6

	The POS recognised the transaction was not successful, and vended no product It is recommended the POS prompt the cardholder to insert card again.
Results	
Logs	
Notes	

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6.1.5 CARD READ TIMEOUT: NO CARD INSERTED (MANDATORY)

This test ensures that the POS handles the case where the card holder does not attempt to swipe a card.

To confirm:

- This outcome is treated as a failed transaction.

Test Case 22 Card Read Timeout	
Objective	To ensure the POS correctly interprets a card read timeout
Applicability	All POS that initiate an Auth prior to a card insertion
User Action	- Initiate a transaction but do not enter a card when prompted
Pass Criteria	- The POS sends an Auth request to the SCR - The SCR provides a response to the Auth with a reco of VB - No product is vended - The POS returns to idle or begins a new Auth and prompts cardholder to enter card again
Results	
Logs	
Notes	

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7 RECEIPT PRINTING

Objective: Receipt printing is recommended rather than required functionality, it is good practice to offer a receipt on demand as in certain business types a receipt is expected for card payment.

7.1.1 RECEIPT PRINTING ON DEMAND (CONDITIONAL)

The recommended approach, in this case the POS device allows the card holder to optionally request a receipt following the COMPLETE transaction (and through use of the TXN-GETR request)
To confirm:

- The receipt details printed match the contents of the data returned by the TXN-GETR command.
- Immediately after the transaction is completed the solution prompts the card holder to request a receipt.
- The solution directs the card holder's attention to the method for requesting a receipt.
- The solution allows at least 5 seconds for the card holder to make a decision.
- RECOMMENDED: Declined and voided transactions automatically generate receipts.
- The receipt when printed is correctly formatted and details are printed on the correct lines

Test Case 23 Receipt Printing on Demand	
Objective	To ensure receipts are printed correctly when supported
Applicability	All POS supporting receipt printing
User Action	- Perform a transaction to completion - Select the option to print a receipt
Pass Criteria	- Product is vended and a successful COMP transaction is processed - A receipt is printed successfully and contains all the required info from the getr response - The receipt data is correctly formatted with 30 characters per line
Results	
Logs	
Notes	Please provide the receipt or a scan of the receipt printed

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7.1.2 RECEIPT PRINTING FOR EACH TRANSACTION (CONDITIONAL)

This scenario is not ideal, unless there is a high probability that receipts will be requested by users.

To confirm:

- The receipt details printed match the contents of the data returned by the TXN-GETR command.
- Immediately after the transaction is completed the solution prompts the card holder to request a receipt.
- The solution should provide some feedback indicating that receipt printing in under way, or a reminder to retrieve the receipt after payment.
- The receipt retrieval area is easily identifiable.
- The receipt is reclaimed by the solution if not claimed within a pre-defined timeout.
  Or
- An enclosed disposal area is available.

Test Case 24 Automatic Receipt Printing	
Objective	To ensure receipts are printed correctly when supported
Applicability	All POS supporting receipt printing
User Action	- Perform a transaction to completion
Pass Criteria	- Product is vended and a successful COMP transaction is processed - A receipt is printed successfully and contains all the required info from the getr response

	- The receipt data is correctly formatted with 30 characters per line
Results	
Logs	
Notes	

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7.1.3 RECEIPT PRINTING UNAVAILABLE (CONDITIONAL)

In an environment where a receipt is expected it is recommended that in addition to printing a receipt on demand, the POS should be capable of detecting that the printer is unavailable before the transaction occurs, and giving the card holder the option to proceed without receipt.

To confirm:

- Recommended: The POS device detects a printer malfunction prior to requesting the AUTH transaction.
- Recommended: An option is presented to the user advising that receipts are not available and allowing them to continue or cancel the transaction.

Test case 25 Receipt Printing Unavailable	
Objective	To Ensure a Cardholder is notified if the receipt printing is unavailable
Applicability	All POS supporting receipt printing
User Action	- Ensure Printer is out of paper (or otherwise unavailable) - Initiate a transaction
Pass Criteria	- The POS identifies the receipt printer is unavailable - The POS provided a prompt to the user notifying the receipt printer is unavailable - The end of the transaction is out of scope
Results	
Logs	
Notes	

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8 SERIAL PORT EXCEPTIONS

Objective: There are a number of exceptions in serial port communication which can affect operation of the POS. These scenarios can be difficult to test for, so an assurance from the developer that these situations are catered for is a more realistic goal.

8.1.1 BAD DATA IN THE SERIAL PORT BUFFER (MANDATORY)

Noise on the serial port line or garbage in the serial port buffer can result in the reading of a bad message which may not conform to a known message type. It is important that the POS can handle this situation without exception.

To confirm:

- Ensure that the POS can handle this situation without exception.

Test case 26 Noise on comport	
Objective	To ensure POS can handle and recover from comport reads that have some bad characters due to noise on the port. Case of bad characters at beginning of buffer
Applicability	All POS
User Action	- Select test case 3 on the SCR Emulator app - Initiate a transaction
Pass Criteria	- The POS does not crash - A later transaction attempt is successful
Results	
Logs	
Notes	

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Test case 27 Noise on comport 2	
Objective	To ensure POS can handle comport reads that have some bad characters due to noise on the port. Case of bad characters at end of buffer
Applicability	All POS
User Action	- Select test case 4 on the SCR Emulator app - Initiate a transaction
Pass Criteria	- The POS does not crash - The POS can process the message successfully - The leftover 'bad' part of the message is either dropped of ends up at the beginning of the next message as read by POS. This scenario is handled by previous test 'Noise on comport'
Results	
Logs	
Notes	

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8.1.2 TWO MESSAGES WITHIN A SINGLE READ (MANDATORY)

It is possible for two newline delimited messages to be contained within a single serial port read. An example of where this might occur is where response message is followed immediately by an unsolicited message. It is important the POS does not fail to read the second message.

To confirm:

- Ensure the POS is capable of acting on both messages in this situation.

Test Case 28 Concatenated messages	
Objective	To ensure the POS can parse messages when multiple messages are received in the same buffer read
Applicability	All POS
User Action	- Select test case 1 on the SCR emulator - Initiate an Auth with the POS
Pass Criteria	- The Logs show multiple messages received by POS in one port buffer read. - The LOGS indicate the POS was able to split the messages an interpret each - The POS recognises the result of the transaction
Results	
Logs	
Notes	

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8.1.3 READ FROM THE SERIAL PORT CONTAINS ONLY A PARTIAL MESSAGE (MANDATORY)

It is common for a serial read to contain only part of a message, so the POS must be capable of concatenating many sub-messages in order to build the complete new-line delimited message.

To confirm:

- Ensure the POS is capable of building a complete message from many sub-parts.

Test Case 29 Split message	
Objective	To ensure the POS can correctly handle receiving one message in 2 separate parts
Applicability	All POS
User Action	- Select test case 2 on the SCR emulator - Initiate a transaction
Pass Criteria	- The logs show it took 2 port buffer reads to retrieve a single message - POS was able to interpret the message correctly
Results	
Logs	
Notes	

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8.1.4 UNEXPECTED COMPORT CLOSURE (MANDATORY)

It is possible for comport connections to drop. A POS should be able to detect and recover from an unexpected comport disconnection.

Test case 30 Unexpected comport closure	
Objective	To ensure the POS can recover from an unexpected comport closure
Applicability	All POS
User Action	- Select test case 5 on the SCR Emulator app

	- Initiate a transaction
Pass Criteria	- The SCR app closes the comport connection - The POS attempts to reconnect to the comport - The POS does not crash.
Results	
Logs	
Notes	

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