
POS Application Requirements

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Document Version History

Version	Date	Comment
1.0.0	02-Feb-2013	

1 Scope of Project

The scope of this project is to develop a replica of SAND PS400 Bank POS and Merchant POS Application with all the existing transaction features and functionalities for new SAND PS420. A new application need to introduce **Attendance Services** for one of our project.

1.1 Applications

Name of Application	QCash Bank POS Application
Development Period	01 st May, 2013 to 30 th June, 2013
Description	Bank POS Terminal Application for In-Bound Remittance.
Name of Application	QCash Merchant POS Application
Development Period	01 st May, 2013 to 30 th June, 2013
Description	Merchant Application for POS Terminal
Name of Application	QCash Attendance Application
Development Period	01 st May, 2013 to 30 th June, 2013
Description	Proprietary Application for POS Terminal to collect cardholder's presence at terminal end.

1.2 List of major Transactions of Bank POS

Name of Transaction	Description
Cash Deposit	A transaction for deposit cash on customer card. It may be a non-PIN based transaction.
Cash Advance	A transaction for getting cash from branch/agent teller using customer card. It must a PIN based transaction.
VOID	A reversal transaction for any unsuccessful transaction at terminal end.
Balance Inquiry	A transaction through which customer can able to know his/her card's available balances.
P2P Transfer	A transaction which is used to transfer a desirable amount from one card to another.
PIN Change	A transaction using which customer can able to change his/her card PIN.
Log On	A transaction which will used to get session key from Acquiring HOST to make any PIN based transaction further.
Payment	Using this transaction cardholders can able to pay pre-configured vendor bill

1.3 Transaction Flow:

Initial Screen [Tab Page]

Cash Advance	Cash Deposit
Settlement	Menu

Cash Advance:

- ✓ Enter Password:
- ✓ Swipe/Insert Card OR Enter Card Number
- ✓ Expire Date (MM/YY): [If manually Transaction]
- ✓ Enter CVV: [If manually Transaction]
- ✓ Cash Amount:
- ✓ Enter PIN

Cash Deposit:

- ✓ Enter Password:
- ✓ Swipe/Insert Card OR Enter Card Number
- ✓ Expire Date (MM/YY): [If manually Transaction]
- ✓ Enter CVV: [If manually Transaction]
- ✓ Cash Amount:

Menu:

- ✓ Transactions
 - Cash Advance
 - Cash Deposit
 - Adjust
 - Balance
 - Card To Card Transfer
 - Account To Account Transfer
 - PIN Change
 - LogOn
 - Payment
- ✓ Configuration:

Object Name	Object Properties	Remarks
PABX		
Terminal	✓ STAN	Need to add a new print

	<ul style="list-style-type: none"> ✓ PABX Access Code ✓ PABX Delay ✓ Dial Type ✓ Host Time Out ✓ User Time Out ✓ Tech Password ✓ Tipping ✓ Invoice ✓ Logo ✓ Screen Logo ✓ No Blind Dial ✓ Settle Receipt ✓ Select Account Enable ✓ Decline Receipt ✓ Receipt Prompt ✓ Receipt Line 1 ✓ Receipt Line 2 ✓ Receipt Line 3 ✓ Receipt Line 4 ✓ Agree Line 1 ✓ Agree Line 2 ✓ Agree Line 3 ✓ Agree Line 4 ✓ Company Copy(New) ✓ Beep Enable 	<p>label for Transaction Statement i.e. Company Copy.</p> <p>For different types of Institute it will configure i.e. for Bank- National Bank Copy, BPO-BPO Copy.</p>
Acquirer	<p>Select Acquirer</p> <ul style="list-style-type: none"> ✓ Index Number ✓ Host Name ✓ Primary ✓ Secondary ✓ Settle Primary ✓ Settle Secondary ✓ Carrier Time Out ✓ Retry ✓ NII ✓ Terminal ID ✓ Merchant ID ✓ Batch Number ✓ Next Batch Number ✓ Protocol Type ✓ Sync Mode ✓ Batch ID ✓ APN ✓ Host Access <ul style="list-style-type: none"> ○ TCP/IP Mode 	<p>Host Access will be configured in Two ways</p> <ul style="list-style-type: none"> • IP Address Enabled • Domain Address Enabled. <p>POS Management Team will enable any one of Two options and input Host Access information.</p>

	<ol style="list-style-type: none"> 1. Primary IP Address 2. Primary Host Port 3. Secondary IP Address 4. Secondary Host Port <ul style="list-style-type: none"> ○ Domain Mode <ol style="list-style-type: none"> 1. Domain Address <ul style="list-style-type: none"> ✓ Currency ✓ Connection Type ✓ Currency Code ✓ Country Code ✓ Min Purchase Amount ✓ Max Purchase Amount ✓ Cash Back Check 	
Card Table	Select Card <ul style="list-style-type: none"> ✓ Card Number ✓ Low ✓ High ✓ Issuer ID ✓ Acquirer ID 	Low and High need to extend min 12 character.
Issuer	Select Issuer: <ul style="list-style-type: none"> ✓ Index Number ✓ Card Label ✓ Checking Option ✓ Cash Out Option ✓ Option 7 ✓ Default Account ✓ Floor Limit ✓ Floor Limit EMV ✓ EMV PIN Bypass ✓ MagStripe PIN 	
Payment	<ul style="list-style-type: none"> ✓ Bill-Payment Vendor ✓ Pre-Paid Vendor ✓ Mobile Top Up Vendor 	<ul style="list-style-type: none"> • It may need to add a no of vendor as payment vendor at terminal end. • These vendors need to configuration with basic information i.e. Vendor ID, Vendor Account etc, In the Prepaid transaction – Prepaid vendor provider account will be configured. • At transaction time

		<p>there are a no of input fields may require to input billing information i.e. customer registration no or bill account no, bill serial no, phone no, billing month etc.</p> <ul style="list-style-type: none"> For different vendor the text of labels of these input fields may need to change. All fields of Payment information may not require for any of one Payment vendor. So the label and correspond field will be needed to Enable or disable at payment configuration part.
Time/Date		
Clear Reversal		
Password	<ul style="list-style-type: none"> ✓ Maintenance ✓ Operator ✓ Supervisor 	Need Operator wise password change option.
Surcharge	Transaction wise surcharge configuration	
	Cash Advance	<ul style="list-style-type: none"> Surcharge Enable/Disable Amount Flat/Percentage/Amount Range
	Cash Deposit	<ul style="list-style-type: none"> Surcharge Enable/Disable Amount Flat/Percentage/Amount Range
	Card To Card Transfer	<ul style="list-style-type: none"> Surcharge Enable/Disable Amount Flat/Percentage/Amount Range
	Account To Account Transfer	<ul style="list-style-type: none"> Surcharge Enable/Disable Amount Flat/Percentage/Amount Range
	Payment	<ul style="list-style-type: none"> Surcharge Enable/Disable

		<ul style="list-style-type: none"> • Amount • Flat/Percentage/Amount Range 	
Transaction Attribute	Select Issuer		
	Cash Advance	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable 	
	Cash Deposit	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable 	
	Adjust	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable 	
	Balance	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable 	
	Card To Card Transfer	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable 	
	Account To Account Transfer	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable 	
	PIN Change	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable 	
	LogOn	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable 	
	Payment	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable 	

- ✓ Batch
- ✓ Receipt
- ✓ VOID
- ✓ Settlement
- ✓ Logo Download
 - **Need to have provision to add new logo for new Institute.**
- ✓ Report
 - **Transaction Log Report to analyze dispute.**
 - **Operator wise transaction report**

- **Daily Detail Transaction Details and Summary Report**
- ✓ Test
- ✓ Parameter Download
 - **Need to have provision to download terminal configuration parameter from organized text document.**
- ✓ Key Download
- ✓ Power Off

NB: These are the major options in our Application. It may arise other options during development time.

1.4 List of Transactions of Merchant POS

Name of Transaction	Description
Sale	Basic transaction of Merchant POS Application on behalf of purchasing goods by cardholder without PIN and TIPS.
Sale (PIN Based)	Same transaction of above with PIN.
Sale (with Tips)	Same transaction of above with TIPS.
VOID	A reversal transaction for any unsuccessful transaction at terminal end.
Refund	Merchant will able to make this transaction when customer intends to return purchased good to merchant. This transaction will have contains some basic information of base transaction.
Pre-Auth	A purchase transaction which transaction amount will on hold at Issuing host until Pre-Auth Completion transaction is not initiating from terminal.
Pre-Auth Completion <ol style="list-style-type: none"> Online Pre-Auth Completion Offline Pre-Auth Completion 	<p>Merchant can able to make Online Pre-Auth Completion transaction and Offline Pre-Auth Completion as per configuration.</p> <p>If merchant want to ensure Pre-Auth amount at Pre-Auth Completion time then Online Pre-Auth Completion transaction will be initiate from terminal.</p> <p>If merchant want to settle Pre-Auth amount at settlement time then Merchant will initiate an Offline TIP adjustment transaction from terminal. At settlement time these transactions will send as advice transaction from terminal to HOST.</p>
TIP Adjust <ol style="list-style-type: none"> Online TIP Adjustment Offline TIP Adjustment 	<p>Merchant can able to make Online TIP Adjustment transaction and Offline TIP Adjustment as per configuration.</p> <p>If merchant want to ensure TIP amount at TIP Adjustment time then Online TIP Adjustment transaction will be initiate from terminal.</p>

	If merchant want to settle TIP Adjustment transaction at settlement time then Merchant will initiate an Offline TIP adjustment transaction from terminal. At settlement time these transactions will send as advice transaction from terminal to HOST.
Log On	A transaction which will used to get session key from Acquiring HOST to make any PIN based transaction further.

Initial Screen [Tab page]

Sale	Menu
Reprint	Settlement

1.5 Transaction Flow:

- ✓ Swipe/Insert Card OR Enter Card Number
- ✓ Expire Date (MM/YY): [If manually Transaction]
- ✓ Enter CVV: [If manually Transaction]
- ✓ Cash Amount:
- ✓ Enter PIN(Configured)

*** "Cash Back" option should be there also. If "Cash Back" is enabled then it will ask if the Customer want to do "Cash Back" transaction Cash Back

Menu:

- ✓ Transactions
 - Sale
 - Void
 - Refund
 - Pre Auth
 1. Pre Auth
 2. Pre Auth Complete Online or Offline
 - Tip
 - Tip Adjust Online or Offline
 - Payment
 1. Bill Payment
 2. Prepaid
 3. Mobile Top Up
 - LogOn
 - Settlement

✓ Configuration:

Object Name	Object Properties	Description
PABX		
Terminal	<ul style="list-style-type: none"> ✓ STAN ✓ PABX Access Code ✓ PABX Delay ✓ Dial Type ✓ Host Time Out ✓ User Time Out ✓ Tech Password ✓ Tipping ✓ Invoice ✓ Logo ✓ Screen Logo ✓ No Blind Dial ✓ Settle Receipt ✓ Select Account Enable ✓ Decline Receipt ✓ Receipt Prompt ✓ Receipt Line 1 ✓ Receipt Line 2 ✓ Receipt Line 3 ✓ Receipt Line 4 ✓ Agree Line 1 ✓ Agree Line 2 ✓ Agree Line 3 ✓ Agree Line 4 ✓ Company Copy(New) ✓ Beep Enable 	<p>Need to add a new print label for Transaction Statement i.e. Company Copy.</p> <p>For different types of Institute it will configure i.e. for Bank- EBL Copy, Merchant- X Merchant Copy.</p>
Acquirer	<p>Select Acquirer</p> <ul style="list-style-type: none"> ✓ Index Number ✓ Host Name ✓ Primary ✓ Secondary ✓ Settle Primary ✓ Settle Secondary ✓ Carrier Time Out ✓ Retry ✓ NII ✓ Terminal ID ✓ Merchant ID ✓ Batch Number 	<p>Host Access will be configured in Two ways</p> <ul style="list-style-type: none"> • IP Address Enabled • Domain Address Enabled. <p>POS Management Team will enable any one of Two options and input Host Access information.</p>

	<ul style="list-style-type: none"> ✓ Next Batch Number ✓ Protocol Type ✓ Sync Mode ✓ Batch ID ✓ APN ✓ Host Access <ul style="list-style-type: none"> ○ TCP/IP Mode <ol style="list-style-type: none"> 1. Primary IP Address 2. Primary Host Port 3. Secondary IP Address 4. Secondary Host Port ○ Domain Mode <ol style="list-style-type: none"> 1. Domain Address ✓ Currency ✓ Connection Type ✓ Currency Code ✓ Country Code ✓ Min Purchase Amount ✓ Max Purchase Amount ✓ Cash Back Check 	
Card Table	Select Card <ul style="list-style-type: none"> ✓ Card Number ✓ Low ✓ High ✓ Issuer ID ✓ Acquirer ID 	Low and High need to extend min 12 character.
Issuer	Select Issuer: <ul style="list-style-type: none"> ✓ Index Number ✓ Card Label ✓ Checking Option ✓ Cash Out Option ✓ Option 7 ✓ Default Account ✓ Floor Limit ✓ Floor Limit EMV ✓ EMV PIN Bypass ✓ MagStripe PIN 	
Payment	<ul style="list-style-type: none"> ✓ Bill-Payment Vendor ✓ Pre-Paid Vendor ✓ Mobile Top Up Vendor 	<ul style="list-style-type: none"> • It may need to add a no of vendor as payment vendor at terminal end.

		<ul style="list-style-type: none"> These vendors need to configuration with basic information i.e. Vendor ID, Vendor Account etc, In the Prepaid transaction – Prepaid vendor provider account will be configured. At transaction time there are a no of input fields may require to input billing information i.e. customer registration no or bill account no, bill serial no, phone no, billing month etc. For different vendor the text of labels of these input fields may need to change. All fields of Payment information may not require for any of one Payment vendor. So the label and correspond field will be needed to Enable or disable at payment configuration part.
Time/Date		
Clear Reversal		
Password	<ul style="list-style-type: none"> ✓ Maintenance ✓ Operator ✓ Supervisor 	Need Operator wise password change option.
Surcharge	Transaction wise surcharge configuration	
	Sale	<ul style="list-style-type: none"> Surcharge Enable/Disable Amount Flat/Percentage/Amount Range
	Payment	<ul style="list-style-type: none"> Surcharge Enable/Disable Amount Flat/Percentage/Amount Range

Transaction Attribute	Select Issuer	
	Sale	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
	Sale (with Tips)	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
	Void	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
	Refund	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
	Pre-Auth	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
	Online Pre-Auth Completion	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
	Offline Pre-Auth Completion	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
	Online TIP Adjustment	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
	Offline TIP Adjustment	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
	Settlement	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
	LogOn	<ul style="list-style-type: none"> • Enable/Disable
	Payment	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable
Invoice Print	Print Customer Signature Part	<ul style="list-style-type: none"> • Enable/Disable
	Print Sur-Charge Amount	<ul style="list-style-type: none"> • Enable/Disable
	Print Acquirer Top Logo	<ul style="list-style-type: none"> • Enable/Disable
	Print Acquirer Name Bottom	<ul style="list-style-type: none"> • Enable/Disable
	Payment	<ul style="list-style-type: none"> • Enable/Disable • PIN Enable/Disable • Manual Entry Enable/Disable

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 - **Daily Detail Transaction Details and Summary Report**
- ✓ Test
- ✓ Parameter Download:
 - **Need to have provision to download terminal configuration parameter from organized text document.**
- ✓ Key Download
- ✓ Power Off

NB: These are the major options in our Application. It may arise other options during development time.

1.6 List of Transactions of Attendance POS

Name of Transaction	Description
Balance Inquiry (Non-PIN Based)	A non-PIN based Balance Inquiry transaction to get cardholders presence.
Balance Inquiry (PIN Based)	A PIN based Balance Inquiry transaction to get cardholders presence.
Log On	A transaction which will used to get session key from Acquiring HOST to make any PIN based transaction further.

1.7 Transaction Flow:

Initial Screen [Tab Page]

Attendance	Menu
Void	Function

Attendance:

- ✓ Enter Password:
- ✓ Swipe/Insert Card
- ✓ Enter PIN

Menu:

- ✓ Transactions
 - Attendance
 - PIN Change
 - LogOn
- ✓ Configuration:

Object Name	Object Properties	Description
PABX		
Terminal	<ul style="list-style-type: none"> ✓ STAN ✓ PABX Access Code ✓ PABX Delay ✓ Dial Type ✓ Host Time Out ✓ User Time Out ✓ Tech Password ✓ Tipping ✓ Invoice ✓ Logo ✓ Screen Logo ✓ No Blind Dial ✓ Settle Receipt ✓ Select Account Enable ✓ Decline Receipt ✓ Receipt Prompt ✓ Receipt Line 1 ✓ Receipt Line 2 ✓ Receipt Line 3 ✓ Receipt Line 4 ✓ Agree Line 1 ✓ Agree Line 2 ✓ Agree Line 3 ✓ Agree Line 4 ✓ Company Copy(New) ✓ Beep Enable 	<p>Need to add a new print label for Transaction Statement i.e. Company Copy.</p> <p>For different types of Institute it will configure i.e. for Project- EGPP Copy</p>
Acquirer	Select Acquirer <ul style="list-style-type: none"> ✓ Index Number ✓ Host Name ✓ Primary ✓ Secondary ✓ Settle Primary 	<p>Host Access will be configured in Two ways</p> <ul style="list-style-type: none"> • IP Address Enabled • Domain

	<ul style="list-style-type: none"> ✓ Settle Secondary ✓ Carrier Time Out ✓ Retry ✓ NII ✓ Terminal ID ✓ Merchant ID ✓ Batch Number ✓ Next Batch Number ✓ Protocol Type ✓ Sync Mode ✓ Batch ID ✓ APN ✓ Host Access <ul style="list-style-type: none"> ○ TCP/IP Mode <ol style="list-style-type: none"> 1. Primary IP Address 2. Primary Host Port 3. Secondary IP Address 4. Secondary Host Port ○ Domain Mode <ol style="list-style-type: none"> 1. Domain Address ✓ Currency ✓ Connection Type ✓ Currency Code ✓ Country Code 	Address Enabled. POS Management Team will enable any one of Two options and input Host Access information.
Card Table	Select Card <ul style="list-style-type: none"> ✓ Card Number ✓ Low ✓ High ✓ Issuer ID ✓ Acquirer ID 	Low and High need to extend min 12 character.
Issuer	Select Issuer: <ul style="list-style-type: none"> ✓ Index Number ✓ Card Label ✓ Checking Option ✓ Option 7 ✓ Default Account ✓ Floor Limit ✓ Floor Limit EMV ✓ EMV PIN Bypass ✓ MagStripe PIN 	
Time/Date		
Clear Reversal		

Password	<ul style="list-style-type: none"> ✓ Maintenance ✓ Operator ✓ Supervisor 	Need Operator wise password change option.
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- ✓ Parameter Download
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- ✓ Key Download
- ✓ Power Off

NB: These are the major options in our Application. It may arise other options during development time.

2 Host System & Protocol Overview

Protocol Overview	
Transaction Authorization Host	TW-Online
Transaction Message Protocol	TITP
Network Communication Protocol	TCP/IP (Client-Server)