



ECR-POS PROJECT

INTEGRATION DOCUMENT

Electronic Fund Transfer at Point of Sale (EFTPOS) Integration

WEB - HTML JAVASCRIPT

<i>Version</i>	1.1.0
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Document Revision History

Date	Document Version	Remarks
November 16, 2020	Version 1.0.0	Initial Documentations of HTML/JAVASCRIPT test application. Added Send Button for check device and transactions.
November 16, 2022	Version 1.1.0	Added Cancel Function

1 Introduction

This document contains the API specifications for interfacing the A90 Android terminal and the Android mobile devices via different client android application.

Detailed transaction flow and message formats are also included.

1.1 Purpose

- Promotes a more secure payment experience.
- Avoid incorrect amount entry.
- Eliminates merchant's "over/under charge" errors

1.2 Benefits

- PCI and PA-DSS compliant
- Secured data transmission between ECR and EFTPOS
- Works with most ECRs
- Ensure the data accuracy since the user will not enter any value manually
- Speeding up the operations done at one time.

2 Environment Structure

MADA APP & CLIENT APP



Figure 1 (Environment Structure)

2.1 Transaction Operation Flow

- (1) Entry of items at ECR
- (2) Select Payment type (assuming it's debit or credit card payment) at ECR
- (3) Use DLL provided by Alhamrani Universal and call request function
- (4) Open RS232/COM port and check the POS availability (DLL will handle this part)
- (5) DLL will validate the request and send to EFTPOS
- (6) Swipe or Insert Card at EFTPOS (Financial Transaction)
- (7) Enter PIN at EFTPOS (Financial Transaction)
- (8) EFTPOS will dial/connect to financial host (Financial Transaction)
- (9) Send Response Message from EFTPOS to DLL.

3 Normal Message Sequence

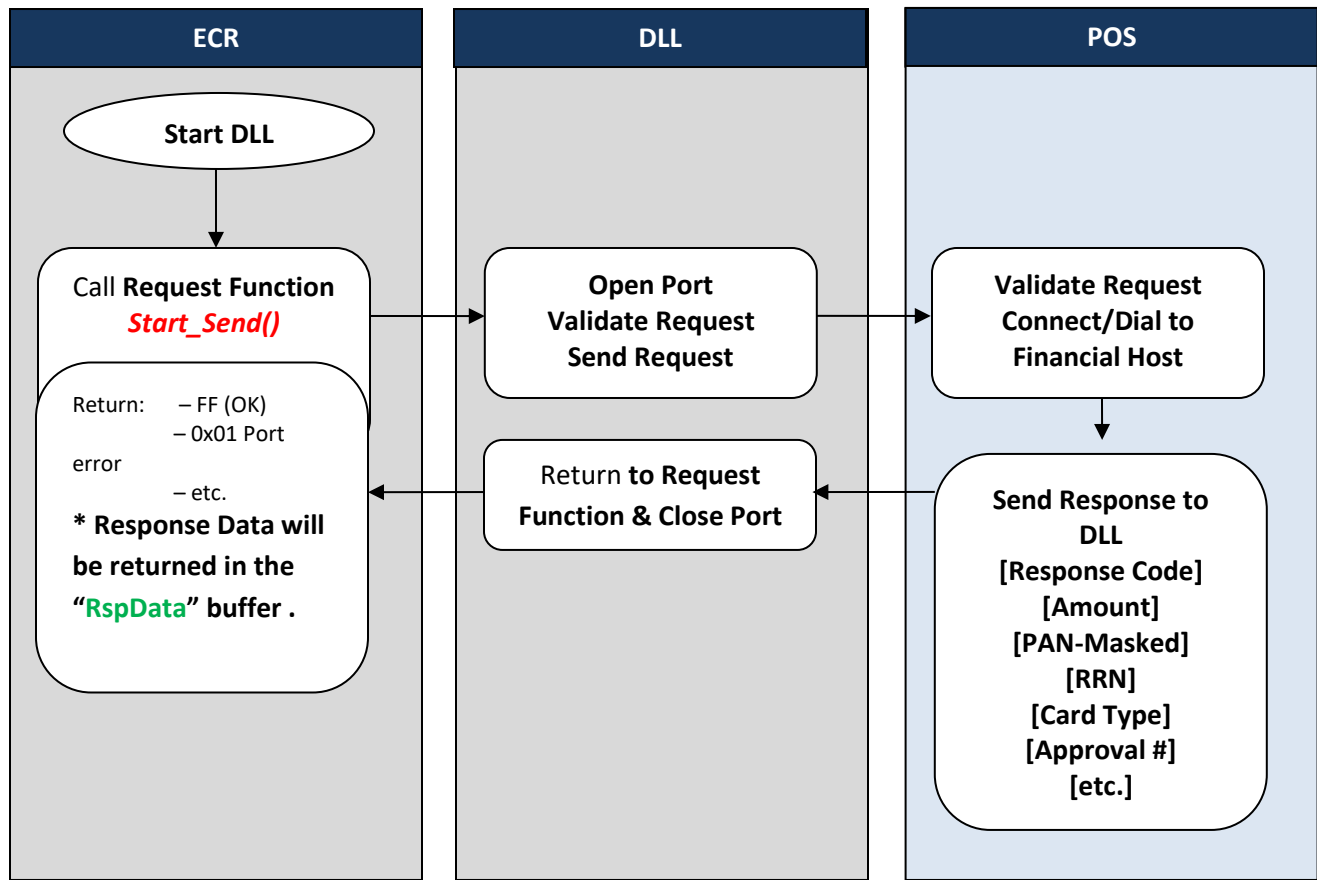


Figure 2 (Normal Message Sequence)

3.1 Request Function

Function to be called to send transaction/query request to POS terminal. Response data will be returned to the output buffer

4 Terminal Type and Available Connection

Terminal Type	POS to SAMA	ECR to POS
Move 2500	GPRS	USB
Move 2500 Hybrid	GPRS	USB, RS232, Serial Port
Move 3500	GPRS	USB
Aisino A90	GPRS	USB

5 Message IDs

Type of request message, it is part of Message Block.

Message ID	Message Type
PUR	Purchase Transaction
REC	Reconciliation

6 Response Codes from POS

6.1 Response Codes from POS

Terminal related responses in the event that the transactions cannot be completed due to COMMs failure or user cancelled prior to establishing connection to the host

CODE	Description	Action
"CAN"	Timeout / Cancelled by User	Decline
"NA"	No Answer	Decline
"UN"	Unknown Message	Decline
"LC"	Lost Communication	Decline
"CE"	Comms Error	Decline
"TO"	Timeout	Decline
"XC"	Transaction Void	Decline
"UC"	User Cancelled	Decline
"NL"	No Line	Decline
"LB"	Line Busy	Decline
"NNA"	Not Available	Decline

6.2 Response Codes from SAMA (SPAN2)

Code	Description	Action
000	Approved	Approve
001	Honour with identification	Approve
003	Approved (VIP)	Approve
007	Approved, update ICC	Approve
060	Approved in Stand- In Processing (STIP) mode by mada switch	Approve

061	Approved in Stand-In Processing (STIP) mode by mada POS	Approve
087	Offline Approved (Chip only)	Approve
089	Unable to go On-line. Off-line approved (Chip only)	Approve
100	Do not honour	Decline
101	Expired card	Decline
102	Suspected fraud (To be used when ARQC validation fails)	Decline
103	Card acceptor contact acquirer	Decline
104	Restricted card	Decline
105	Card acceptor call acquirer's security department	Decline
106	Allowable PIN tries exceeded	Decline
107	Refer to card issuer	Decline
108	Refer to card issuer's special conditions	Decline
109	Invalid merchant	Decline
110	Invalid amount	Decline
111	Invalid card number	Decline
112	PIN data required	Decline
114	No account of type requested	Decline
115	Requested function not supported	Decline
116	Not sufficient funds	Decline
117	Incorrect PIN	Decline
118	No card record	Decline
119	Transaction not permitted to cardholder	Decline
120	Transaction not permitted to terminal	Decline
121	Exceeds withdrawal amount limit	Decline

122	Security violation	Decline
123	Exceeds withdrawal frequency limit	Decline
125	Card not effective	Decline
126	Invalid PIN block	Decline
127	PIN length error	Decline
128	PIN key synch error	Decline
129	Suspected counterfeit card	Decline
164	Transaction not permitted for this Merchant Category Code (MCC).	Decline
165	Excessive capture not allowed.	Decline
166	More than one pre-authorization extension is not allowed	Decline
167	Issuer not certified for this transaction or service or Issuer does not support this service	Decline
182	Invalid date (Visa 80)	Decline
183	Cryptographic error found in PIN or CVV (Visa 81)	Decline
184	Incorrect CVV (Visa 82)	Decline
185	Unable to verify PIN (Visa 83)	Decline
187	Original transaction not found based on original transaction data.	Decline
188	Offline declined	Decline
190	Unable to go online Offline declined	Decline
195	Individual transaction amount exceeds limit	Decline
196	Cumulative contactless limit exceeded	Decline
197	The bank account used in the original transaction does not match the bank account being used	Decline

198	The refund, preauthorization void amount or cumulative amount exceeds the original transaction amount	Decline
199	The transaction period exceeds the maximum time limit allowed by the mada business rules	Decline
200	Do not honour	Decline
201	Expired card	Decline
202	Suspected fraud (To be used when ARQC validation fails)	Decline
203	Card acceptor contact acquirer	Decline
204	Restricted card	Decline
205	Card acceptor call acquirer's security department	Decline
206	Allowable PIN tries exceeded	Decline
207	Special conditions	Decline
208	Lost card	Decline
209	Stolen card	Decline
210	Suspected counterfeit card	Decline
300	Successful	Approve
301	Not supported by receiver	Decline
302	Unable to locate record on file	Decline
306	Not successful	Decline
307	Format error	Decline
400	Accepted	Approve
480	Original transaction not found	Decline
481	Original transaction was found but declined	Decline
500	Reconciled, in balance	Approve
501	Reconciled, out of balance	Decline

690	Unable to parse message	Decline
800	Accepted	Approve
888	Unknown error	Decline
893	Signature Error	Decline
902	Invalid transaction	Decline
903	Re-enter transaction	Decline
904	Format error	Decline
906	Cutover in process	Decline
907	Card issuer or switch inoperative	Decline
908	Transaction destination cannot be found for routing	Decline
909	System malfunction	Decline
910	Card issuer signed off	Decline
911	Card issuer timed out	Decline
912	Card issuer unavailable	Decline
913	Duplicate transmission	Decline
914	Not able to trace back to original transaction	Decline
915	Reconciliation cutover or checkpoint error	Decline
916	MAC incorrect (permissible in 1644)	Decline
917	MAC key sync	Decline
918	No communication keys available for use	Decline
919	Encryption key sync error	Decline
920	Security software/hardware error try again	Decline
921	Security software/hardware error no action	Decline
922	Message number out of sequence	Decline
923	Request in progress	Decline

940	Unknown terminal	Decline
942	Invalid Reconciliation Date	Decline

7 ECR-POS DLL Functions

7.1 Call Transaction Request Function

Function to send transaction or inquiry request to POS Terminal.

Byte[] CSHARPDLL.CUSTOMDLLNET.StartAUCECRTran (char[] MSGID, char[] ECRno, char[] Rcptno, char[] Amtstr, char[] Addfield1, char[] Addfield2, char[] Addfield3, char[] Addfield4, char[] Addfield5, string ipaddress, int LogFlag)				
Description	This function is use to send request transaction message to POS terminal			
			Max Length	
Input	MSGID	Char[]	Fixed 3	Message ID: PUR (purchase), REC (Reconciliation)
	ECRno	Char[]	Fixed 3	ECR Number
	Rcptno	Char[]	10	ECR Receipt Number
	Amtstr	Char[]	12	Purchase Amount
	Addfield1	Char[]	24	For future use
	Addfield2	Char[]	24	For future use
	Addfield3	Char[]	24	For future use
	Addfield4	Char[]	24	For future use
	Addfield5	Char[]	24	For future use
	Comport	string	Ex. "1" for Comport1	Comport number
LogFlag	Integer	1	1 (enable logs), 0 (disable)	
Return	Byte[]	Returns Response data and Receipt data Refer to RESPONSE DATA Details table and RECEIPT DATA Details table below		

7.2 Check Device Function

Function to check connectivity of the device.

Bool CSHARPDLL.CUSTOMDLLNET.checkDevice (string valueIPorPort)				
Description	This function is used to check connectivity of device			
			Max Length	
Input	valueIPorPort	string		Example. "1" for Comport 1
Return	Boolean	True or False		

Byte[] cSHARPDLL.CUSTOMDLLNET.checkDevice2 (string valueIPorPort)			
Description	This function is used to check connectivity of device and return the Terminal ID		
			Max Length
Input	valueIPorPort	string	Example. "1" for Comport 1
Return	Byte[]	TID Value	

8 Field Descriptions

8.1 Response Field Description

FIELDNAME	Description
Total length of response message	Total number of bytes expected in the Response Message
ECR number	Cash Register number echoed from the request.
ECR_Receipt_No	ECR Invoice number echoed from the request.
Trans. Amount	Purchase or refund amount
Response Code	Transaction Response. See section 6.
Card Number	Primary Account Number. Truncated as 1 st 6 and last 4 digits of the card number in compliance with the PCI standard.
Card Expiry Date	Expiry of the card.
Card Type	Type of card used. i.e. SPAN(mada), Visa, MASTERCARD, MAESTRO or AMEX
Approval No	Authorization code sent by the financial authorization server
Trans Date	Date of transaction (MMDD)
Trans TIME	Time of transaction (HHMMSS)
Trans No (RRN)	Retrieval Reference Number. Basically, this is the invoice number of the financial transaction.
Terminal ID	Terminal ID of the EFTPOS financial terminal
RSP Message	RSPMessage is the receipt data to be printed on the transaction receipt Contains subfields separated by FS (0x1C). Refer to Receipt details data for the exact description of this field. See Sample Receipts.

9 Appendix (Sample code snippet)

HTML/JAVASCRIPT Implementation of TEST APP

- TestApp.html (Please refer to the **index.html** file for complete reference)

jquery.signalR-2.4.1.min.js & jquery.min.js is required

```
// building object request
var param_txn = {
  msg_id : "PUR",
  ecr_no : "123",
  ecr_receipt_no : "1234567890",
  amount :amount,
  field1 : "",
  field2 : "",
  field3 : "",
  field4 : "",
  field5 : "",
  port_no_or_ip_address : ip_port
}

// PURCHASE
// use "transaction" key word for transactions such as PURCHASE
chat.server.send("transaction", JSON.stringify(param_txn));

// CHECK DEVICE
// use "check" key word for transactions such as PURCHASE
chat.server.send("check", JSON.stringify(param_txn));

// CANCEL CURRENT TRANSACTION
// use "cancel" key word for transactions such as PURCHASE
chat.server.send("cancel", JSON.stringify(param_txn));

//SAMPLE RESPONSE
response:
{"ecr_no":"123","ecr_receipt_no":"1234567890","amount":"000000000100","pan":"455036*
****7585
","rrn":"160953002797","tid":"5593333300033333","response_code":"000","auth_code":"724169","car
d_type":"
MADA","transaction_date":"1116","transaction_time":"095335","card_expiry_date":"1012","is_connect
ed":true}
```