Cloud9 PDC SDK Guide

Revision History

Revision	Date	Change description
4.5	05/21/2018	Add BatchQuery, BatchLookup
4.4	04/19/2018	Add Cancel transaction type. Add CheckDuplicate description. Change CCVResultCode to CVVResultCode Add ErrorCode: 182, 202, 203
4.3	04/16/2018	Update signature description.
4.2	04/09/2018	Add EMV transaction sample request.
4.1	04/02/2018	Add signature description.
4.0	03/23/2018	Add VerifyCard in Action Group.
3.9	03/07/2018	Add EMV Custom Control Pin pad.
3.8	03/06/2018	Add description in Data Groups.
3.7	02/24/2018	Remove spaces from Application Label
3.6	02/23/2018	Add EMV response info
3.5	01/29/2018	Add ErrorCode
3.4	01/23/2018	Add ResetMessage. Add RebootDevice.
3.3	01/22/2018	Add ErrorCode 179.
3.2	01/19/2018	Update IOS SDK.
3.1	01/18/2018	Add IOS SDK. Add CreditOnFailure.
3.0	01/03/2018	Add Offline-Register sample. Update Error Code.
2.9	12/26/2017	Update UploadMessage ErrorCode. Update Unregister description.
2.8	12/20/2017	Add UploadMessage description.
2.7	12/19/2017	Add Adjust, UploadMessage, UploadImage, SetImageList
2.6	12/18/2017	Add Reverse description and sample.
2.5	12/08/2017	Add Unregister description and sample. Update ErrorCode
2.4	12/07/2017	Add Pinpad messages API description and sample: AskNumberQuestion, AskSelectionQuestion, ShowMessage. Add DeviceStatus: BUSY. Update ErrorCode.
2.3	12/01/2017	Update SN description.
2.2	11/30/2017	Update ErrorCode, SN description. Add Register error code, Duplicate transaction error code, Register logic description.
2.1	11/29/2017	Update EBT card type. Add Register errorcode.
2.0	11/17/2017	Update Register, GetStatus Description and Sample
1.9	11/10/2017	Add Terminal Register Sample
1.8	11/01/2017	Add Verify, GMPW
1.7	10/23/2017	Add CreateCardToken.
1.6	10/16/2017	Add UpdateCardTokenInfo, DeleteCardToken, ErrorCode.
1.5	09/29/2017	Add CardHolder and ExpDate.
1.4	09/11/2017	Add CardToken parameter.

1.3	08/28/2017	Add Json message sample
1.2	05/04/2015	Modify the Amount that calculated by the lowest denomination value of currency and add a new element, AddtionalInfo, used in the future.
1.1	09/26/2014	Modify Some Groups and add some new Response Information
1.0	07/24/2014	Initial Draft

Table of Contents

1. Overview

Cloud9 Payment Gateway provides a simple method of processing payment transactions for merchants who want to integrate payment processing with their existing applications. The Cloud9 Payment Gateway processes credit card, debit card and Electronic Benefits Transfer (EBT) transactions. Transactions are accepted from various industries including: retail, restaurant, mail order/telephone order, lodging, and E-comm.
This document describes how to write your own application for processing payment transactions or integrate payment processing capabilities into an existing application.

1.1   System Requirements

The Software Development Kit (SDK) does not require any special system requirements for usage. You are free to develop your application using any desired tools on any operating platform.

1.2   Software Development Kit (SDK)

The Software Development Kit, which includes this document, provides the guidance for developing an application that can send card-based payment transactions to the Cloud9 Payment Gateway and receive the response returned by the Cloud9 Payment Gateway. The methods of communicating with the Cloud9 Payment Gateway are through Simple Object Access Protocol (SOAP).
An itemized list of the contents of the SDK includes:
- Cloud9 PDC SDK Guide (this document)
- XML Schema (PosGatewayService.wsdl)
- SoapUI Sample XML Messages

1.3   Audience

This document is for Software Developers that need guidelines and procedures for processing transactions within the Cloud9 Payment Gateway.

1.4   Simple Object Access Protocol (SOAP)

To simplify the message specification, the Heartland Portico Gateway uses the SOAP for its message delivery. SOAP is a protocol for exchanging XML-based messages over a computer network. It provides a method of communication between applications running in different environments.
- A SOAP message is simply an XML document that contains the following elements:
- A required **Envelope** element that identifies the XML document as a SOAP message.
- An optional **Header** element that contains header information.
- A required **Body** element that contains call and response information.
- An optional **Fault** element that provides information about errors that occur during the processing of a message.

All of these elements are declared in the default namespace for the SOAP envelope. For more details, refer to *http://www.w3.org/2001/12/soap-envelope*.
The default namespace for SOAP encoding and data types is:
http://www.w3.org/2001/12/soap-encoding.

1.5   Connectivity

To simplify development, the Cloud9 Payment Gateway provide a midware called PDC to communicate with Payment Gateway. The connectivity method to the Cloud9 Payment Gateway is through the Internet.

1.6   Security

Each type of message uses a secure socket connection to ensure the confidentiality of information passed between the merchant and Cloud9 Payment Exchange. By doing this, credit card information is never accessible to external entities.

2. Transaction Type

2.1   Sale

A **Sale** transaction authorizes a sale purchased. This action decreases the cardholder's limit to buy. It authorizes a transfer of funds from the cardholder's account to merchant's account.

2.2   Auth

An **Auth** transaction places a temporary hold on the customer's account. Approvals on authorizations are used later to transfer funds by Finalize or AddTip.

2.3   Inquiry

An Inquiry transaction is used to query the balance amount of a card.

2.4   Refund

A **Refund** transaction is used to authorize a refund to a customer's credit card account.

2.5   Finalize

A **Finalize** transaction is used to change an Auth transaction to sale transaction.

2.6   AddTip

An **AddTip** transaction is used to add an additional amount to an original transaction, Auth or Sale. If the original transaction is Auth, this operation transfers the Auth to Sale.

2.7   Modify

A **Modify** transaction is used to alter the transaction amount of an original transaction, Auth or Sale.

2.8   Adjust

A **Adjust** transaction is used to alter the transaction amount of an original transaction whether or not it has been settled, Auth or Sale.

2.9   Void

A **Void** transaction is used to cancel an authorized transaction before it has been settled.

2.10   Reverse

A **Reverse** transaction is used to cancel an authorized transaction whether or not it has been settled.

2.11   Cancel

A **Cancel** transaction is used to cancel an authorized transaction which contains same invoice number and total amount.

2.12   Batch

A Batch transaction is used to close the current open batch and settle it. It is supported by terminal capture only .For host capture, merchant don't need submit batch request.

2.13   BatchLookup

A BatchLookup transaction is used to query batch id by batch date.

2.14   BatchQuery

A BatchQuery transaction is used to query transaction list by batch id.

2.15   UpdateCardTokenInfo

A UpdateCardTokenInfo transaction is used to update card token information. It supports update ExpDate, CustomerAddress, CustomerZipCode.

2.16   DeleteCardToken

A DeleteCardToken transaction is used to delete exist card token.

2.17   CreateCardToken

A CreateCardToken transaction is used to create card token.

2.18   Verify

A Verify transaction is used to judge the card is valid.

2.19   Register

A Register transaction is used to associate Pin pad's serial number with GMID/GTID. This transaction only supported in the EMV, QuickChip endpoint.

2.20   Unregister

A Unregister transaction is used to unlink Pin pad's serial number from GMID/GTID and de-activate GMID/GTID. This transaction only supported in the EMV, QuickChip endpoint.

2.21   GetStatus

A GetStatus transaction is used to judge whether Pin pad is available. This transaction only supported in the EMV, QuickChip endpoint

2.22   AskNumberQuestion

A **AskNumberQuestion** transaction is used to get user input on the Pin pad. This transaction only supported in the EMV, QuickChip endpoint

2.23 AskSelectionQuestion

A **AskSelectionQuestion** transaction is used to get user selection results on the Pin pad. This transaction only supported in the EMV, QuickChip endpoint

2.24 ShowMessage

A **ShowMessage** transaction is used to display message on the Pin pad. This transaction only supported in the EMV, QuickChip endpoint

2.25 UploadImage

A **UploadImage** transaction is used to upload image to the Pin pad. This transaction only supported in the EMV, QuickChip endpoint

2.26 SetImageList

A **SetImageList** transaction is used to set up the index of images that need to be displayed on the Pin pad. This transaction only supported in the EMV, QuickChip endpoint

2.27 UploadMessage

A **UploadMessage** transaction is used to permanently replace built-in message in Pin pad. Even if restart the Pin pad. A reboot is required following UploadMessage. This transaction only supported in the EMV, QuickChip endpoint

2.28 ResetMessage

A **ResetMessage** transaction is used to restore built-in message in Pin pad. A reboot is required following **ResetMessage**. This transaction only supported in the EMV, QuickChip endpoint

2.29 RebootDevice

A **RebootDevice** transaction is used to restart Pin pad. This transaction only supported in the EMV, QuickChip endpoint

3. Information Overview

3.1 Amount

The Amount is calculated by the lowest denomination value of currency. For U.S./National applications, the lowest currency value is pennies and a transaction for one dollar is 100 pennies.

3.2 Partial authorization

The AllowsPartialAuth must be "Y" if the terminals support partial authorization. The Partial authorization can't be differentiated by the status field. The terminals must check AuthAmt when partial authorization is enable. If the AuthAmt is less than the amount you submit, the transaction is a partial authorization.

4. Data Groups

This chapter provides detailed information for data groups of SOAP message. A data group consists of multiple fields.

4.1 Configure Group

NOTE: This subgroup is used for all transactions.

Field Name	Data Type	Usage	Description
GMID	String	Required	Merchant identifier Assigned by Cloud9 Payment Systems Administrator during registration
GTID	String	Required	Merchant's terminal identifier Assigned by Cloud9 Payment Systems Administrator during registration This field is Optional when doing Register.
GMPW	String	Required	Merchant password Only verified for Refund transactions. It can be any value for other transactions.
AllowsPartial Auth	String	Optional	Indicates whether partial authorization is allowed Valid values = Y or N Default is "N"

4.2 Request Amount Group

NOTE: This subgroup is only used for Auth/Sale/Refund/Addtip transactions.

Field Name	Data Type	Usage	Description
MainAmt	Unsigned Int	Optional	Primary charge amount Total digits = 12
TipAmt	Unsigned Int	Optional	Tip amount that is in addition to the main amount.Total digits = 12
IncTaxAmt	Unsigned Int	Optional	Tax amount that is included in the main amount.Total digits = 12
IncCashBack Amt	Unsigned Int	Optional	Cash back amount that is included in the main amount Total digits = 12
TaxIndicator	String	Optional	Additional Information about TaxAmt Valid values = "Ntprvd ","NonTax" and "Prvded" Default is " Prvded"

4.3 Action Group

NOTE: This subgroup is used for all transactions.

Field Name	Data Type	Usage	Description
TransType	String	Required	Transaction Type Valid values include: Auth Sale Finalize Addtip Void Reverse Refund Inquiry Modify Batch UpdateCardTokenInfo(available in JSON request) DeleteCardToken(available in JSON request) CreateCardToken(available in JSON

			request) Verify Register Unregister GetStatus AskNumberQuestion AskSelectionQuestion ShowMessage ResetMessage RebootDevice
IsOffline	String	Optional	Indicates whether is an offline transaction Valid values = Y or N Default is "N"
CreditOnFailure	String	Optional	Indicates whether do force void transaction. Valid values = Y or N Default is "N"
VerifyCard	String	Optional	Indicates whether verify card when doing CreateCardToken. Valid values = Y or N Default is "Y"
CheckDuplicate	String	Optional	Indicates whether to check for duplicate transactions. Duplicate check interval: 1 minute Valid values = Y or N Default is "N" Note: you need supply this field in all the request to enable this feature.

4.4   Request Extend Info. Group

Field Name	Data Type	Usage	Description
InvoiceNum	String	Optional	Invoice Number
OrderNum	String	Optional	Order Number Only used for purchase card
AuthCode	String	Optional	Offline auth code Only used for offline transaction
VoucherNum	String	Optional	Voucher serial number Only used for offline EBT transaction
AddtionalInfo	String	Optional	Reserved for future use. Data is delimited by a FS (0x1c) and is formatted as follows: Key=Value0x1cKey=Value0x1cKey=Value…

4.5   Trace Group

NOTE: This subgroup is used for all transactions.

Field Name	Data Type	Usage	Description
SourceTraceNum	String	Optional	Source Trace number Provided by the merchant and it uniquely identifies a transaction.
GTRC	String	Optional	Gateway trace It is a unique trace number assigned to a transaction by Cloud9 payment and returned in the response message. The POS must submit it back for Void/Addtip/Finalize etc based previous transactions.

4.6   Request Card Info. Group

NOTE: This subgroup is only used when card info is from POS, not PDC.

And the item, NeedSwipCard, must be "N".

Field Name	Data Type	Usage	Description
Medium	String	Optional	Card Type. Must be present when card info is from POS. Valid values include: Credit/ Debit /EBTFood/EBTCash/Prepaid/Gift/ ElectronicCheck
AccountNum	String	Optional	Card number. Maximum length = 22. Must be present when card info is from POS and encrypted. If this field and ExpDate are set in the request, it does not need to provide Track1, Track2, CardToken. And EntryMode needs to be set to Manual.
ExpDate	String	Optional	Card expiration Date MMYY. Must be present when card info is from POS and encrypted.
EntryMode	String	Optional	Entry Mode. Must be present when NeedSwipCard is "N". Valid values include: Swipe/ Manual/ Proximity/ ChipContact/ ChipContactless/ EMVFallback2Swip
CVVNum	String	Optional	Card verification code on the card Maximum length = 6
Track1	String	Optional	full magnetic Track I data read from the card by a card reader. If this field is set in the request, it does not need to provide AccountNum, ExpDate, Track2, CardToken. And EntryMode needs to be set to Swipe.
Track2	String	Optional	full magnetic Track II data read from the card by a card reader. If this field is set in the request, it does not need to provide AccountNum, ExpDate, Track1, CardToken. And EntryMode needs to be set to Swipe.
PinData	PINGrp	Optional	Must be present when Pin is passed
EncryptionData	Encryption DataGrp	Optional	Must be present when account number is encryptrd
CardPresent	String	Optional	Indicates whether is card is present Valid values = Y or N.Default is "Y"
CommercialCard	String	Optional	Indicates whether is card is Commercial Card. Valid values = Y or N. Default is "Y"
CardToken	String	Optional	It can replace AccountNum and ExpDate. Only support in json request. If this field is set in the request, it does not need to provide AccountNum, ExpDate, Track1, Track2. And EntryMode needs to be set to Manual.
RequestCardTok en	String	Optional	Indicates whether server return CardToken Valid values = Y or N. Default is "N". Only support in json request.
CustomerName	String	Optional	Cardholder's name.

CustomerZipCode	String	Optional	Cardholder's billing zip code.
CustomerAddress	String	Optional	Cardholder's billing address.

4.7 Request Terminal Info. Group

Field Name	Data Type	Usage	Description
SN	String	Optional	Pin pad's serial number. Used in Register, Unregister request. Valid values: Full serial number: 14281PP81035776 Last 8 digit of serial number: 81035776
MessageIndex	String	Optional	Index of question display on the pin pad. Used in AskNumberQuestion Valid values: **001**: Please enter your home phone number **002**: Please enter your 10-digit HOME phone number **003**: Please enter your date of birth **004**: Please Enter ZIP Code **010**: Enter Card Number **011**: Enter Expiration Date **012**: Enter CVV or CID from card Used in UploadMessage Valid value： **1001:** replace built-in message "Lane Closed"
MessageText	String	Optional	Text to be displayed on pin pad. Used in AskSelectionQuestion, ShowMessage. UploadMessage Maximum length = 30
ImageData	String	Optional	Base64 encode image
ImageLength	String	Optional	The length of image data
ImageID	String	Optional	The ID index of image. Valid values: 001 002 003 004 005 006 007 008 009 010 012 013
ImageList	String	Optional	The ID list of image that needs to be displayed on the PinPad Valid values: 001 002 003 004 005 006 007 008 009 010 012 013
NeedSignature	String	Optional	Only supported in Local PDC. Indicate whether Local PDC return signature data in response message. Valid value: Y or N. Default valud: Y

4.8 EMV Custom Control Pin pad

EMV Tag	Data Transmitted	Format

EMV42	Issuer Identification Number.	Hex-ASCII
EMV4F	Application Identifier (AID).	Hex-ASCII
EMV50	Application Label.	Hex-ASCII
EMV57	Track 2 Equivalent Data.	Hex-ASCII
EMV5A	Primary Account Number.	Hex-ASCII
EMV71	Issuer script template 1.	Hex-ASCII
EMV72	Issuer script template 2.	Hex-ASCII
EMV82	Application Interchange Profile.	Hex-ASCII
EMV84	Dedicated File (DF) Name.	Hex-ASCII
EMV87	Application Priority Indicator	Hex-ASCII
EMV8A	Authorization Response Code.	Hex-ASCII
EMV8E	Card Holder Verification Method (CVM) List.	Hex-ASCII
EMV91	Issuer Authentication Data.	Hex-ASCII
EMV95	Terminal Verification Results.	Hex-ASCII
EMV9A	Transaction Date.	Hex-ASCII
EMV9B	Transaction Status Information.	Hex-ASCII
EMV9C	Transaction Type.	Hex-ASCII
EMV5F20	Cardholder name.	Hex-ASCII
EMV5F24	Expiry Date.	Hex-ASCII
EMV5F28	Issuer Country Code, 3 digit numeric.	Hex-ASCII
EMV5F2A	Transaction Currency Code.	Hex-ASCII
EMV5F2D	Preferred languages.	Hex-ASCII
EMV5F30	Service Code.	Hex-ASCII
EMV5F34	Application PAN Sequence Number.	Hex-ASCII
EMV5F54	Bank Identifier Code (BIC).	Hex-ASCII
EMV5F55	Issuer Country Code, 2 digit alpha.	Hex-ASCII
EMV5F56	Issuer Country Code, 3 digit alpha.	Hex-ASCII
EMV9F02	Amount, Authorized (Numeric).	Hex-ASCII
EMV9F03	Amount, Other (Numeric).	Hex-ASCII
EMV9F06	Application ID Terminal.	Hex-ASCII
EMV9F07	Application Usage Control.	Hex-ASCII
EMV9F08	Application Version Number (ICC).	Hex-ASCII
EMV9F09	Application Version Number (Terminal).	Hex-ASCII
EMV9F0B	Cardholder Name Extended.	Hex-ASCII
EMV9F0D	Issuer Action Code Default.	Hex-ASCII
EMV9F0E	Issuer Action Code Denial.	Hex-ASCII
EMV9F0F	Issuer Action Code Online.	Hex-ASCII
EMV9F10	Issuer Application Data.	Hex-ASCII
EMV9F11	Issuer Code Table Index.	Hex-ASCII
EMV9F12	Application Preferred Name.	Hex-ASCII
EMV9F14	Lower Consecutive Offline Limit	Hex-ASCII
EMV9F17	PIN Try Count.	Hex-ASCII
EMV9F1A	Terminal Country Code.	Hex-ASCII
EMV9F1B	Terminal Floor Limit.	Hex-ASCII
EMV9F1E	Interface Device (IFD) Serial Number.	Hex-ASCII
EMV9F1F	Track 1 Discretionary Data	Hex-ASCII
EMV9F20	Track 2 Discretionary Data	Hex-ASCII
EMV9F21	Transaction Time.	Hex-ASCII
EMV9F26	Application Cryptogram (AC).	Hex-ASCII
EMV9F27	Cryptogram Information Data (CID).	Hex-ASCII
EMV9F33	Terminal Capabilities.	Hex-ASCII
EMV9F34*	Cardholder Verification method (CVM) Results.	Hex-ASCII
EMV9F35	Terminal Type.	Hex-ASCII

EMV9F36	Application Transaction Counter (ATC).	Hex-ASCII	
EMV9F37	Unpredictable Number.	Hex-ASCII	
EMV9F39	POS Entry Mode.	Hex-ASCII	
EMV9F40	Additional Terminal Capabilities.	Hex-ASCII	
EMV9F41	Transaction Sequence Counter.	Hex-ASCII	
EMV9F42	Application Currency Code	Hex-ASCII	
EMV9F51	Application Currency Code/DRDOL	Hex-ASCII	
EMV9F53	Transaction Category Code (VISA only).	Hex-ASCII	
EMV9F5B	Transaction Category Code (VISA only).	Hex-ASCII	
EMV9F5D	Available Offline Spending Amount (AOSA).	Hex-ASCII	
EMV9F66	Terminal Transaction Qualifiers (TTQ)	Hex-ASCII	
EMV9F67	(Amex spec) - NATC (Track2) / MSD Offset.	Hex-ASCII	
EMV9F6C	Card Transaction Qualifiers (CTQ).	Hex-ASCII	
EMV9F6D	EMV Proprietary tag. See brand specifications for details per brand.	Hex-ASCII	
EMV9F6E	Third Party Data.	Hex-ASCII	
EMV9F71	Protected Data Envelope 2 & Mobile CVM Results	Hex-ASCII	
EMV9F7C	Customer Exclusive Data (CED) & Merchant Custom Data.	Hex-ASCII	
EMVDF03	Terminal Action Code Default.	Hex-ASCII	
EMVDF04	Terminal Action Code Denial.	Hex-ASCII	
EMVDF05	Terminal Action Code Online.	Hex-ASCII	
EMVDF11	Issuer Script Results.	Hex-ASCII	

4.9   Encryption Data Group

Field Name	Data Type	Usage	Description
KeyID	String	Optional	This is an identifier used to retrieve the private key, which is required for decryption.
EncrptTrgt	String	Optional	Indicates the type of data that is being encrypted. Valid Values = Track1 ,Track2 and PAN
EncrptBlock	String	Optional	Contains the track data or card number provided in an encrypted block. Be Present when card data is encrypted.

4.10   PIN Group

Field Name	Data Type	Usage	Description
PinBlock	String	Optional	Contains the Encrypted PIN Block for the Debit or EBT transaction being submitted
KSN	String	Optional	used to create the base PIN encryption key for DUKPT PIN Debit and EBT transactions. Mandatory for PIN Debit and EBT transactions.

4.11   Result Group

Field Name	Data Type	Usage	Description
AuthCode	String	Optional	Auth code is assigned by the association,

Field Name	Data Type	Usage	Description
			issuing bank, or Debit/EBT network.
Status	String	Required	Indicates whether transaction success. Valid values include fail, success, timeout, cancel and invalidData.
~~ResponseCode~~	~~String~~	~~Required~~	~~The host response to a string number to indicate the status of the transaction.~~
~~ResponseText~~	~~String~~	~~Required~~	~~The host response to a message to descript the status of the transaction.~~
ErrorCode	String	Required	The host response to a string number to indicate the status of the transaction.
ErrorText	String	Required	The host response to a message to descript the status of the transaction.
AVSResultCode	String	Optional	If address verification requested, address verification result code returned by the Issuer
CVVResultCode	String	Optional	If card verification was provided in the request, card verification result code provided by the Issuer

4.12 Response Amount Group

Field Name	Data Type	Usage	Description
AuthAmt	Unsigned Int	Optional	Approval amout
BalanceAmt	Unsigned Int	Optional	If supplied from the Issuer, the available balance on the associated prepaid, EBT, or gift card

4.13 Response Card Info.

Field Name	Data Type	Usage	Description
Medium	String	Optional	Card Type. Valid values include: Credit/ Debit /EBTFood/EBT- Cash/Prepaid/Gift
Brand	String	Optional	Card brand Valid values include:Visa/Master/Discover/Amex /JCB/DinersClub
AccountNum	String	Optional	Card number Maximum length = 22
CardToken	String	Optional	Card token Set RequestCardToken in the request, server will return it.
ExpDate	String	Optional	Card expiration Date MMYY.

4.14 Response Terminal Info.

Field Name	Data Type	Usage	Description
SN	String	Optional	Pin pad's serial number. The last 8 digit of full serial number.
DeviceStatus	String	Optional	Pin pad status. Valid values ON/OFF/BUSY

Field Name	Data Type	Usage	Description
SignatureData	String	Optional	Only supported in Local PDC. SignatureData encode:Hex ASCII with 3-Byte ASCII Signature Format

4.15 Response EMV Info.

Please Note that not all cards return these information, depending on the card, we may only return some of them

Field Name	Data Type	Usage	Description
AID	String	Optional	Application Identifier
ARQC	String	Optional	Authorization Request Cryptogram
ApplicationLabel	String	Optional	Application Label
ATC	String	Optional	Application Transaction Counter
TSI	String	Optional	Transaction Status Information
EMV72	String	Optional	Issuer Script Template 2
EMV8A	String	Optional	Authorisation Response Code
EMV91	String	Optional	Issuer Authentication Data

5. XML Message Sample

5.1 Sale

5.1.1 Sale Request

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Amount>
          <MainAmt>500</MainAmt>
          <TipAmt>100</TipAmt>
        </Amount>
        <ExtInfo>
          <InvoiceNum>000004</InvoiceNum>
        </ExtInfo>
        <Action>
          <TransType>Sale</TransType>
          <IsOffline>N</IsOffline>
        </Action>
        <Trace>
          <SourceTraceNum>000004</SourceTraceNum>
        </Trace>
        <NeedSwipCard>Y</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.1.2   Sale Response

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC>9bcf4291f79640caa2bb7fc6e780f5e0</GTRC>
        <Result>
          <AuthCode>40991A</AuthCode>
          <Status>success</Status>
          <ResponseCode>00</ResponseCode>
          <ResponseText>APPROVAL</ResponseText>
        </Result>
        <CardInfo>
          <Medium>Credit</Medium>
          <Brand>Visa</Brand>
          <AccountNum>40**********0016</AccountNum>
        </CardInfo>
        <Amount>
          <AuthAmt>600</AuthAmt>
        </Amount>
        <ExtInfo>
          <EntryMode>Manual</EntryMode>
        </ExtInfo>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.2 Offline-Sale

5.2.1 Offline-Sale Request

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Amount>
          <MainAmt>1000</MainAmt>
          <TipAmt>200</TipAmt>
        </Amount>
        <ExtInfo>
          <InvoiceNum>000005</InvoiceNum>
          <AuthCode>123456</AuthCode>
        </ExtInfo>
        <Action>
          <TransType>Sale</TransType>
          <IsOffline>Y</IsOffline>
        </Action>
        <Trace>
          <SourceTraceNum>000005</SourceTraceNum>
        </Trace>
        <NeedSwipCard>Y</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.2.2 Offline-Sale Response

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC>166c0d1749c04da79f7ab73cc5a99c42</GTRC>
        <Result>
          <AuthCode>123456</AuthCode>
          <Status>success</Status>
          <ResponseCode>0</ResponseCode>
          <ResponseText>Success</ResponseText>
        </Result>
        <CardInfo>
          <Medium>Credit</Medium>
          <Brand>Visa</Brand>
          <AccountNum>40**********0016</AccountNum>
        </CardInfo>
        <Amount>
          <AuthAmt>1200</AuthAmt>
        </Amount>
        <ExtInfo>
          <EntryMode>Manual</EntryMode>
        </ExtInfo>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.3 Sale (Card Info. From POS)

5.3.1 Sale Request

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Amount>
          <MainAmt>1000</MainAmt>
          <TipAmt>100</TipAmt>
        </Amount>
        <Action>
          <TransType>Sale</TransType>
          <IsOffline>N</IsOffline>
        </Action>
        <Trace>
          <SourceTraceNum>000017</SourceTraceNum>
        </Trace>
        <CardInfo>
          <Medium>Credit</Medium>
          <AccountNum>4012002000060016</AccountNum>
          <ExpDate>1225</ExpDate>
          <CVVNum>123</CVVNum>
        </CardInfo>
        <NeedSwipCard>N</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.3.2 Sale Response

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC>80239ffb1b75480fbae17db6f73aaa41</GTRC>
        <Result>
          <AuthCode>41001A</AuthCode>
          <Status>success</Status>
          <ResponseCode>00</ResponseCode>
          <ResponseText>APPROVAL</ResponseText>
        </Result>
        <CardInfo>
          <Medium>Credit</Medium>
          <Brand>Visa</Brand>
          <AccountNum>40**********0016</AccountNum>
        </CardInfo>
        <Amount>
          <AuthAmt>1100</AuthAmt>
        </Amount>
        <ExtInfo>
          <EntryMode>Manual</EntryMode>
        </ExtInfo>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.4 Auth

5.4.1 Auth Request

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Amount>
          <MainAmt>500</MainAmt>
        </Amount>
        <Action>
          <TransType>Auth</TransType>
          <IsOffline>N</IsOffline>
        </Action>
        <Trace>
          <SourceTraceNum>000002</SourceTraceNum>
        </Trace>
        <NeedSwipCard>Y</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.4.2 Auth Response

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC>890c3415aa224b0b80a3ff95e7b315d8</GTRC>
        <Result>
          <AuthCode>40990A</AuthCode>
          <Status>success</Status>
          <ResponseCode>00</ResponseCode>
          <ResponseText>APPROVAL</ResponseText>
        </Result>
        <CardInfo>
          <Medium>Credit</Medium>
          <Brand>Visa</Brand>
          <AccountNum>40**********0016</AccountNum>
        </CardInfo>
        <Amount>
          <AuthAmt>500</AuthAmt>
        </Amount>
        <ExtInfo>
          <EntryMode>Manual</EntryMode>
        </ExtInfo>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.5 Inquiry

5.5.1 Inquiry Request

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Action>
          <TransType>Inquiry</TransType>
          <IsOffline>N</IsOffline>
        </Action>
        <Trace>
          <SourceTraceNum>000001</SourceTraceNum>
        </Trace>
        <NeedSwipCard>Y</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.5.2 Inquiry Response

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC>0d396c13514e48a4ba0baca203ffe4a4</GTRC>
        <Result>
          <AuthCode>SIM002</AuthCode>
          <Status>success</Status>
          <ResponseCode>00</ResponseCode>
          <ResponseText>APPROVAL</ResponseText>
        </Result>
        <CardInfo>
          <Medium>EBTCash</Medium>
          <AccountNum>40**********0016</AccountNum>
        </CardInfo>
        <Amount>
          <BalanceAmt>1100</BalanceAmt>
        </Amount>
        <ExtInfo>
          <EntryMode>Swipe</EntryMode>
        </ExtInfo>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.6 Refund

5.6.1 Refund Request

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Amount>
          <MainAmt>1000</MainAmt>
        </Amount>
        <Action>
          <TransType>Refund</TransType>
          <IsOffline>N</IsOffline>
        </Action>
        <ExtInfo>
          <OrderNum>000005</OrderNum>
        </ExtInfo>
        <Trace>
          <SourceTraceNum>000033</SourceTraceNum>
        </Trace>
        <NeedSwipCard>Y</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.6.2   Refund Response

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC>1e637663560a4baf8a2e417a0f541504</GTRC>
        <Result>
          <Status>success</Status>
          <ResponseCode>0</ResponseCode>
          <ResponseText>Success</ResponseText>
        </Result>
        <CardInfo>
          <Medium>Credit</Medium>
          <Brand>Visa</Brand>
          <AccountNum>40**********0016</AccountNum>
        </CardInfo>
        <Amount>
          <AuthAmt>1000</AuthAmt>
        </Amount>
        <ExtInfo>
          <EntryMode>Manual</EntryMode>
        </ExtInfo>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.7 Finalize

5.7.1 Finalize Request

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Action>
          <TransType>Finalize</TransType>
          <IsOffline>N</IsOffline>
        </Action>
        <Trace>
          <SourceTraceNum>000008</SourceTraceNum>
          <GTRC>c407c49517b5478abc6aeb8100e41294</GTRC>
        </Trace>
        <NeedSwipCard>Y</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.7.2 Finalize Response

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC>c407c49517b5478abc6aeb8100e41294</GTRC>
        <Result>
          <AuthCode>40992A</AuthCode>
          <Status>success</Status>
          <ResponseCode>0</ResponseCode>
          <ResponseText>Success</ResponseText>
        </Result>
        <Amount>
          <AuthAmt>1500</AuthAmt>
        </Amount>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.8 AddTip

5.8.1 AddTip Request

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Amount>
          <TipAmt>300</TipAmt>
        </Amount>
        <Action>
          <TransType>AddTip</TransType>
          <IsOffline>N</IsOffline>
        </Action>
        <Trace>
          <SourceTraceNum>000010</SourceTraceNum>
          <GTRC>ba3edccabf914c6684f4d9e4d71df0bf</GTRC>
        </Trace>
        <NeedSwipCard>Y</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.8.2 AddTip Response

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC>ba3edccabf914c6684f4d9e4d71df0bf</GTRC>
        <Result>
          <AuthCode>40994A</AuthCode>
          <Status>success</Status>
          <ResponseCode>0</ResponseCode>
          <ResponseText>Success</ResponseText>
        </Result>
        <Amount>
          <AuthAmt>1500</AuthAmt>
        </Amount>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.9 Void

5.9.1 Void Request

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Action>
          <TransType>Void</TransType>
          <IsOffline>N</IsOffline>
        </Action>
        <Trace>
          <SourceTraceNum>000014</SourceTraceNum>
          <GTRC>abb12a0bee0f4923b6e627a6cb72b774</GTRC>
        </Trace>
        <NeedSwipCard>Y</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.9.2 Void Response

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC>abb12a0bee0f4923b6e627a6cb72b774</GTRC>
        <Result>
          <AuthCode>40998A</AuthCode>
          <Status>success</Status>
          <ResponseCode>0</ResponseCode>
          <ResponseText>Success</ResponseText>
        </Result>
        <Amount>
          <AuthAmt>1600</AuthAmt>
        </Amount>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.10 Modify

5.10.1 Modify Request

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Amount>
          <MainAmt>1500</MainAmt>
          <TipAmt>300</TipAmt>
        </Amount>
        <Action>
          <TransType>Modify</TransType>
          <IsOffline>N</IsOffline>
        </Action>
        <Trace>
          <SourceTraceNum>000012</SourceTraceNum>
          <GTRC>3b507866bdf746c0807bd89536e60bda</GTRC>
        </Trace>
        <NeedSwipCard>Y</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.10.2 Modify Response

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC>3b507866bdf746c0807bd89536e60bda</GTRC>
        <Result>
          <AuthCode>40995A</AuthCode>
          <Status>success</Status>
          <ResponseCode>0</ResponseCode>
          <ResponseText>Success</ResponseText>
        </Result>
        <Amount>
          <AuthAmt>1100</AuthAmt>
        </Amount>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.11 Batch

5.11.1 Batch Request

```xml
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:sof="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <sof:Request>
      <Request>
        <Config>
          <GMID>03</GMID>
          <GTID>03</GTID>
          <GMPW>03</GMPW>
          <AllowsPartialAuth>N</AllowsPartialAuth>
        </Config>
        <Action>
          <TransType>Batch</TransType>
          <IsOffline>N</IsOffline>
        </Action>
        <Trace>
          <SourceTraceNum>000015</SourceTraceNum>
        </Trace>
        <NeedSwipCard>Y</NeedSwipCard>
      </Request>
    </sof:Request>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

5.11.2 Batch Response

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:ns1="http://www.911software.com/">
  <SOAP-ENV:Header/>
  <SOAP-ENV:Body>
    <ns1:Response>
      <Response>
        <GTRC/>
        <Result>
          <Status>success</Status>
          <ResponseCode>0</ResponseCode>
          <ResponseText>Success</ResponseText>
        </Result>
        <Amount>
          <AuthAmt>0</AuthAmt>
        </Amount>
      </Response>
    </ns1:Response>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

6. JSON Message Sample

6.1 Sale

6.1.1 Sale Request

```json
{
    "GMID": "05",
    "GTID": "05",
    "GMPW": "123",
    "AllowsPartialAuth": "N",
    "MainAmt": "500",
    "TipAmt": "100",
    "InvoiceNum": "000004",
    "TransType": "Sale",
    "IsOffline": "N",
    "SourceTraceNum": "000004",
    "Medium": "Credit",
    "NeedSwipCard": "Y"
}
```

6.1.2 Sale Response

```json
{
    "AccountNum": "401200******0016",
    "AuthAmt": "600",
    "AuthCode": "37979A",
    "Brand": "Visa",
    "EntryMode": "Swipe",
    "GMID": "1001395732",
    "GMPW": "123",
    "GTID": "GT1001395735",
    "GTRC": "c98bbe85ff8942f5b787e33e7b1b54a3",
    "Medium": "Credit",
    "ResponseCode": "00",
    "ResponseText": "APPROVAL",
    "Status": "success"
}
```

6.2 Offline-Sale

6.2.1 Offline-Sale Request

```
{
    "GMID": "05",
    "GTID": "05",
    "GMPW": "123",
    "AllowsPartialAuth": "N",
    "MainAmt": "1000",
    "TipAmt": "200",
    "InvoiceNum": "000005",
    "AuthCode": "123456",
    "TransType": "Sale",
    "IsOffline": "Y",
    "SourceTraceNum": "000005",
    "Medium": "Credit",
    "NeedSwipCard": "Y"
}
```

6.2.2 Offline-Sale Response

```
{
    "AccountNum": "401200******0016",
    "AuthAmt": "1200",
    "AuthCode": "123456",
    "Brand": "Visa",
    "EntryMode": "Swipe",
    "GMID": "1001395732",
    "GMPW": "123",
    "GTID": "GT1001395735",
    "GTRC": "21d3bc44239a498db5f2b8604c015e80",
    "Medium": "Credit",
    "ResponseCode": "0",
    "ResponseText": "Success",
    "Status": "success"
}
```

6.3 Sale (Card Info. From POS)

6.3.1 Sale Request with AccountNum

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "03",
        "TransType": "Sale",
        "Medium": "Credit",
        "AccountNum": "4788250000028291",
        "ExpDate": "1222",
        "MainAmt": "1001",
        "TipAmt": "212",
        "IncTaxAmt": "153",
        "EntryMode": "Manual",
        "NeedSwipeCard": "N"
}
```

6.3.2 Sale Response with AccountNum

```
{
        "AccountNum": "478825******8291",
        "AuthAmt": "1213",
        "AuthCode": "TAS110",
        "Brand": "Visa",
        "ErrorCode": "000",
        "ErrorText": "APPROVAL TAS110 ",
        "ExpDate": "1222",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "05",
        "GTRC": "1b9d6a04dab84eda9aacc051c1e10ac6",
        "Medium": "Credit",
        "ResponseCode": "00",
        "ResponseText": "APPROVAL TAS110 ",
        "Status": "success"
}
```

6.3.3 Sale Request with TrackData

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "03",
        "TransType": "Sale",
        "Medium": "Credit",
        "Track2": ";4788250000028291=22121015432112345678?",
        "MainAmt": "1001",
        "TipAmt": "212",
        "IncTaxAmt": "153",
        "EntryMode": "Swipe",
        "NeedSwipeCard": "N"
}
```

6.3.4 Sale Response with TrackData

```
{
        "AccountNum": "478825******8291",
        "AuthAmt": "1213",
        "AuthCode": "TAS116",
        "Brand": "Visa",
        "ErrorCode": "000",
        "ErrorText": "APPROVAL TAS116 ",
        "ExpDate": "1222",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "05",
        "GTRC": "bff1000f88a0415cbd9ae0c2239ed97d",
        "Medium": "Credit",
        "ResponseCode": "00",
        "ResponseText": "APPROVAL TAS116 ",
        "Status": "success"
}
```

6.4 Sale (Card Token)

6.4.1 Sale Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "03",
        "TransType": "Sale",
        "Medium": "Credit",
        "CardToken": "51904a0c96c14887a4044170229ee5c3",
        "MainAmt": "1001",
        "TipAmt": "212",
        "IncTaxAmt": "153",
        "EntryMode": "Manual",
        "NeedSwipeCard": "N"
}
```

6.4.2 Sale Response

```
{
        "AccountNum": "401200******5439",
        "AuthAmt": "1213",
        "AuthCode": "TAS119",
        "Brand": "Visa",
        "CardToken": "51904a0c96c14887a4044170229ee5c3",
        "ErrorCode": "000",
        "ErrorText": "EXACT MATCH    ",
        "ExpDate": "1220",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "05",
        "GTRC": "3bd7701791494201b325d6cd594b8df3",
        "Medium": "Credit",
        "ResponseCode": "00",
        "ResponseText": "EXACT MATCH    ",
        "Status": "success"
}
```

6.5 Auth

6.5.1 Auth Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "123",
        "AllowsPartialAuth": "N",
        "MainAmt": "500",
        "TransType": "Auth",
        "IsOffline": "N",
        "SourceTraceNum": "000002",
        "NeedSwipCard": "Y"
}
```

6.5.2 Auth Response

```
{
        "AccountNum": "401200******0016",
        "AuthAmt": "500",
        "AuthCode": "37986A",
        "Brand": "Visa",
        "EntryMode": "Swipe",
        "GMID": "1001395732",
        "GMPW": "123",
        "GTID": "GT1001395735",
        "GTRC": "f83cd5bb63a54f0abefd9f2bb4bd8312",
        "Medium": "Credit",
        "ResponseCode": "00",
        "ResponseText": "APPROVAL",
        "Status": "success"
}
```

6.6 Inquiry

6.6.1 Inquiry Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "123",
        "AllowsPartialAuth": "N",
        "TransType": "Inquiry",
        "IsOffline": "N",
        "SourceTraceNum": "000001",
        "NeedSwipCard": "Y"
}
```

6.6.2 Inquiry Response

```
{
        "AccountNum": "401200******0016",
        "AuthAmt": "0",
        "AuthCode": "BALINQ",
        "EntryMode": "Swipe",
        "GMID": "1001396276",
        "GMPW": "123",
        "GTID": "GT1001396279",
        "GTRC": "85197eef8b654fb9bb09c8922848221f",
        "Medium": "Debit",
        "ResponseCode": "00",
        "ResponseText": "000000443322   ",
        "Status": "success"
}
```

6.7   Refund

6.7.1   Refund Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "123",
        "AllowsPartialAuth": "N",
        "MainAmt": "1000",
        "TransType": "Refund",
        "IsOffline": "N",
        "OrderNum": "000005",
        "SourceTraceNum": "000033",
        "NeedSwipCard": "Y"
}
```

6.7.2 Refund Response

```
{
        "AccountNum": "401200******0016",
        "AuthAmt": "1000",
        "AuthCode": "273348",
        "Brand": "Visa",
        "EntryMode": "Swipe",
        "GMID": "1001395732",
        "GMPW": "123",
        "GTID": "GT1001395735",
        "GTRC": "3ee1df6b787c452aa5a96db0a50f0567",
        "Medium": "Credit",
        "ResponseCode": "0",
        "ResponseText": "Success",
        "Status": "success"
}
```

6.8 Finalize

6.8.1 Finalize Request

```
{
        "GMID": "05",
        "GTID": "GT1001395979",
        "GMPW": "03",
        "GTRC": "3087c11f59144d84995d681cfb838f77",
        "TransType": "Finalize"
}
```

6.8.2 Finalize Response

```
{
        "AccountNum": "478825******8291",
        "AuthAmt": "0",
        "Brand": "Visa",
        "ErrorCode": "000",
        "ErrorText": "SUCCESS",
        "ExpDate": "1222",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "GT1001395979",
        "GTRC": "3087c11f59144d84995d681cfb838f77",
        "Medium": "Credit",
        "ResponseCode": "00",
        "ResponseText": "SUCCESS",
        "Status": "success"
}
```

6.9   AddTip

6.9.1   AddTip Request

```
{
        "GMID": "05",
        "GTID": "GT1001395979",
        "GMPW": "03",
        "GTRC": "4205a50aef084913bc67e8a3dcda8641",
        "TransType": "AddTip",
        "TipAmt": "232"
}
```

6.9.2 AddTip Response

```
{
        "AccountNum": "478825******8291",
        "AuthAmt": "1213",
        "Brand": "Visa",
        "ErrorCode": "000",
        "ErrorText": "SUCCESS",
        "ExpDate": "1222",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "GT1001395979",
        "GTRC": "4205a50aef084913bc67e8a3dcda8641",
        "Medium": "Credit",
        "ResponseCode": "00",
        "ResponseText": "SUCCESS",
        "Status": "success"
}
```

6.10 Void

6.10.1 Void Request

```
{
        "GMID": "05",
        "GTID": "GT1001395979",
        "GMPW": "03",
        "GTRC": "27f12974e0f242aaaa73a7651c33d21f",
        "TransType": "Void"
}
```

6.10.2 Void Response

```
{
        "AccountNum": "478825******8291",
        "AuthAmt": "0",
        "AuthCode": "TAS139",
        "Brand": "Visa",
        "ErrorCode": "000",
        "ErrorText": "APPROVAL TAS139 ",
        "ExpDate": "1222",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "GT1001395979",
        "GTRC": "27f12974e0f242aaaa73a7651c33d21f",
        "Medium": "Credit",
        "ResponseCode": "00",
        "ResponseText": "APPROVAL TAS139 ",
        "Status": "success"
}
```

6.11 Modify

6.11.1 Modify Request

```
{
        "GMID": "05",
        "GTID": "GT1001395979",
        "GMPW": "03",
        "GTRC": "e11dde4de55542e9822df7951c6a5bd0",
        "TransType": "Modify",
        "MainAmt": "1501",
        "TipAmt": "232",
        "IncTaxAmt": "193"
}
```

6.11.2 Modify Response

```
{
        "AccountNum": "478825******8291",
        "AuthAmt": "0",
        "Brand": "Visa",
        "ErrorCode": "000",
        "ErrorText": "SUCCESS",
        "ExpDate": "1222",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "GT1001395979",
        "GTRC": "e11dde4de55542e9822df7951c6a5bd0",
        "Medium": "Credit",
        "ResponseCode": "00",
        "ResponseText": "SUCCESS",
        "Status": "success"
}
```

6.12 Batch

6.12.1 Batch Request

```
{
        "GMID": "05",
        "GTID": "GT1001395979",
        "GMPW": "03",
        "TransType": "Batch"
}
```

6.12.2 Batch Response

```
{
        "AuthAmt": "0",

        "ErrorCode": "0GB",

        "ErrorText": "TSYS:success\n",

        "GMID": "05",

        "GMPW": "03",

        "GTID": "GT1001395979",

        "ResponseCode": "GB",

        "ResponseText": "TSYS:success\n",

        "Status": "success"
}
```

6.13 Request Card Token

6.13.1 CardToken Request

```
{
        "GMID": "05",

        "GTID": "GT1001395979",

        "GMPW": "03",

        "TransType": "Sale",

        "Medium": "Credit",

        "AccountNum": "4788250000028291",

        "ExpDate": "1222",

        "MainAmt": "1001",

        "TipAmt": "212",

        "IncTaxAmt": "153",

        "EntryMode": "Manual",

        "RequestCardToken": "Y",

        "NeedSwipeCard": "N"
}
```

6.13.2 CardToken Response

```
{
        "AccountNum": "478825******8291",
        "AuthAmt": "1213",
        "AuthCode": "TAS156",
        "Brand": "Visa",
        "CardToken": "f57ce96996f042488c38698fa0af3cb0",
        "ErrorCode": "000",
        "ErrorText": "APPROVAL TAS156 ",
        "ExpDate": "1222",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "GT1001395979",
        "GTRC": "9010451d187e4ea1985ef59474713bb4",
        "Medium": "Credit",
        "ResponseCode": "00",
        "ResponseText": "APPROVAL TAS156 ",
        "Status": "success"
}
```

6.14 Update Card Token

6.14.1 Update CardToken Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "123",
        "TransType": "UpdateCardTokenInfo",
        "CardToken": "e814324e9d0d4ccabd3d0e8f142fc21c",
        "ExpDate": "1219",
        "CustomerAddress": "8320",
        "CustomerZipCode": "74254"
}
```

6.14.2 Update CardToken Response

```
{
        "EntryModel": "Unknow",
        "ErrorCode": "100",
        "ErrorText": "No Error",
        "Medium": "UnknowCard",
        "ResponseCode": "00",
        "ResponseText": "No Error",
        "Status": "success"
}
```

6.15 Delete Card Token

6.15.1 Delete CardToken Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "123",
        "TransType": "DeleteCardToken",
        "CardToken": "f2885df4d232403b8f47885da95b80ae"
}
```

6.15.2 Delete CardToken Response

```
{
        "EntryModel": "Unknow",
        "ErrorCode": "100",
        "ErrorText": "No Error",
        "Medium": "UnknowCard",
        "ResponseCode": "00",
        "ResponseText": "No Error",
        "Status": "success"
}
```

6.16 Create Card Token

6.16.1 Create CardToken Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "03",
        "TransType": "CreateCardToken",
        "Medium": "Credit",
        "AccountNum": "4012000098765439",
        "ExpDate": "1220",
        "CustomerZipCode": "85284",
        "CustomerAddress": "8320",
        "NeedSwipeCard": "N"
}
```

6.16.2 Create CardToken Response

```
{
        "AccountNum": "401200******5439",
        "AuthAmt": "0",
        "AuthCode": "PREATH",
        "Brand": "Visa",
        "CardToken": "51904a0c96c14887a4044170229ee5c3",
        "ErrorCode": "085",
        "ErrorText": "EXACT MATCH    ",
        "ExpDate": "1220",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "GT1001395979",
        "GTRC": "5238624e07424e1e86f3291ec4bf9958",
        "Medium": "Credit",
        "ResponseCode": "85",
        "ResponseText": "EXACT MATCH    ",
        "Status": "success"
}
```

6.17 Verify

6.17.1 Verify Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "03",
        "TransType": "Verify",
        "Medium": "Credit",
        "AccountNum": "4012000098765439",
        "ExpDate": "1220",
        "CVVNum": "999",
        "CustomerAddress": "8320",
        "CustomerZipCode": "85284",
        "EntryMode": "Manual",
        "NeedSwipeCard": "N"
}
```

6.17.2 Verify Response

```
{
        "AccountNum": "401200******5439",
        "AuthAmt": "0",
        "AuthCode": "PREATH",
        "Brand": "Visa",
        "ErrorCode": "085",
        "ErrorText": "EXACT MATCH     ",
        "ExpDate": "1220",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "GT1001395979",
        "GTRC": "93b246020b96460c8af0efa0eb0021da",
        "Medium": "Credit",
        "ResponseCode": "85",
        "ResponseText": "EXACT MATCH     ",
        "Status": "success"
}
```

6.18 Register

If the serial number has been registered by other GMID/GTID, it will return error.

6.18.1 Register Request with GTID

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "123",
        "TransType": "Register"
        "SN": "15297PP12345678"
}
```

6.18.2 Register Response with GTID

```
{
        "ErrorCode": "100",
        "ErrorText": "No Error",
        "GMID": "05",
        "GMPW": "123",
        "GTID": "05",
        "ResponseCode": "00",
        "ResponseText": "No Error",
        "SN": "12345678",
        "Status": "success",
        "TransType": "Register"
}
```

1. **If the serial number has been registered by other GMID, it will return error.**
2. **If the serial number has been registered by other GTID corresponding to this GMID, it will return the corresponding GTID.**

6.18.3 Register Request without GTID

```
{
        "GMID": "05",
        "GMPW": "123",
        "TransType": "Register"
        "SN": "15297PP12345678"

}
```

6.18.4 Register Response without GTID

```
{
        "ErrorCode": "100",
        "ErrorText": "No Error",
        "GMID": "05",
        "GMPW": "123",
        "GTID": "05",
        "ResponseCode": "00",
        "ResponseText": "No Error",
        "SN": "12345678",
        "Status": "success",
        "TransType": "Register"
}
```

6.19 Offline-Register

6.19.1 Offline-Register Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "123",
        "TransType": "Register",
        "IsOffline": "Y",
        "SN": "15297PP12345678"

}
```

6.19.2 Offline-Register Response

```
{
        "ErrorCode": "100",
        "ErrorText": "No Error",
        "GMID": "05",
        "GMPW": "123",
        "GTID": "05",
        "ResponseCode": "00",
        "ResponseText": "No Error",
        "SN": "12345678",
        "Status": "success",
        "TransType": "Register"
}
```

6.20 Unregister

6.20.1 Unregister Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "03",
        "SN": "12345678",
        "TransType": "Unregister"
}
```

6.20.2 Unregister Response

```
{
        "ErrorCode": "100",
        "ErrorText": "No Error",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "05",
        "ResponseCode": "00",
        "ResponseText": "No Error",
        "SN": "12345678",
        "Status": "success"
}
```

6.21 GetStatus

6.21.1 GetStatus Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "123",
        "TransType": "GetStatus"
}
```

6.21.2 GetStatus Response

```
{
        "DeviceStatus": "ON",
        "ErrorCode": "100",
        "ErrorText": "No Error",
        "GMID": "05",
        "GMPW": "123",
        "GTID": "05",
        "ResponseCode": "00",
        "ResponseText": "No Error",
        "SN": "12345678",
        "Status": "success",
        "TransType": "GetStatus"
}
```

6.22 AskNumberQuestion

6.22.1 AskNumberQuestion Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "03",
        "MessageIndex": "010",
        "TransType": "AskNumberQuestion",
        "NeedSwipeCard": "Y"
}
```

6.22.2 AskNumberQuestion Response

```
{
        "ErrorCode": "100",
        "ErrorText": "5454545454545454",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "05",
        "ResponseCode": "00",
        "ResponseText": "5454",
        "Status": "success"
}
```

6.23 AskSelectionQuestion

6.23.1 AskSelectionQuestion Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "03",
        "MessageText": "Are you sure?",
        "TransType": "AskSelectionQuestion",
        "NeedSwipeCard": "Y"
}
```

6.23.2 AskSelectionQuestion Response

```
{
        "ErrorCode": "100",
        "ErrorText": "Y",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "05",
        "ResponseCode": "00",
        "ResponseText": "Y",
        "Status": "success"
}
```

6.24 ShowMessage

6.24.1 ShowMessage Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "03",
        "MessageText": "Happy Birthday!",
        "TransType": "ShowMessage",
        "NeedSwipeCard": "Y"
}
```

6.24.2 ShowMessage Response

```
{
        "ErrorCode": "100",
        "ErrorText": "Complete",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "05",
        "ResponseCode": "00",
        "ResponseText": "Complete",
        "Status": "success"
}
```

6.25 Reverse

6.25.1 Reverse Request

```
{
        "GMID": "05",
        "GTID": "05",
        "GMPW": "03",
        "GTRC": "27f12974e0f242aaaa73a7651c33d21f",
        "TransType": "Reverse"
}
```

6.25.2 Reverse Response

```
{
        "AccountNum": "478825******8291",
        "AuthAmt": "5001",
        "AuthCode": "273348",
        "Brand": "Visa",
        "ErrorCode": "000",
        "ErrorText": "SUCCESS",
        "ExpDate": "1222",
        "GMID": "05",
        "GMPW": "03",
        "GTID": "05",
        "GTRC": "57b331fb6ebb4a859c49c8e919ee7858",
        "Medium": "Credit",
        "ResponseCode": "00",
        "ResponseText": "SUCCESS",
        "Status": "success"
}
```

6.26 UploadImage

6.26.1 UploadImage Request

```
{
     "GMID": "05",
     "GTID": "05",
     "GMPW": "03",
     "TransType": "UploadImage",
     "ImageID": "001",
     "NeedSwipeCard": "Y",
     "ImageData": "ABC",
     "ImageLength":"3"
}
```

6.26.2 UploadImage Response

```
{
     "ErrorCode": "100",
     "ErrorText": "Complete",
     "GMID": "05",
     "GMPW": "03",
     "GTID": "05",
     "ResponseCode": "00",
     "ResponseText": "Complete",
     "Status": "success"
}
```

6.27 SetImageList

6.27.1 SetImageList Request

```
{
     "GMID": "05",
     "GTID": "05",
     "GMPW": "03",
     "TransType": "SetImageList",
     "ImageList": "001, 002,003,004,005,006,007,008,009,010,011,012,013",
     "NeedSwipeCard": "Y"
}
```

6.27.2 SetImageList Response

```
{
    "ErrorCode": "100",
    "ErrorText": "Complete",
    "GMID": "05",
    "GMPW": "03",
    "GTID": "05",
    "ResponseCode": "00",
    "ResponseText": "Complete",
    "Status": "success"
}
```

6.28 UploadMessage

6.28.1 UploadMessage Request

```
{
    "GMID": "05",
    "GTID": "05",
    "GMPW": "03",
    "MessageText": "Happy Birthday!!!",
    "MessageIndex":"1001",
    "TransType": "UploadMessage"
}
```

6.28.2 UploadMessage Response

```
{
    "ErrorCode": "100",
    "ErrorText": "Complete",
    "GMID": "05",
    "GMPW": "03",
    "GTID": "05",
    "ResponseCode": "00",
    "ResponseText": "Complete",
    "Status": "success"
}
```

6.29 ResetMessage

6.29.1 ResetMessage Request

```
{
    "GMID": "05",
    "GTID": "05",
    "GMPW": "03",
    "TransType": "ResetMessage"
}
```

6.29.2 ResetMessage Response

```
{
    "ErrorCode": "100",
    "ErrorText": "Complete",
    "GMID": "05",
    "GMPW": "03",
    "GTID": "05",
    "ResponseCode": "00",
    "ResponseText": "Complete",
    "Status": "success"
}
```

6.30 RebootDevice

6.30.1 RebootDevice Request

```
{
    "GMID": "05",
    "GTID": "05",
    "GMPW": "03",
    "TransType": "RebootDevice"
}
```

6.30.2 RebootDevice Response

```
{
    "ErrorCode": "100",
    "ErrorText": "Complete",
    "GMID": "05",
    "GMPW": "03",
    "GTID": "05",
    "ResponseCode": "00",
    "ResponseText": "Complete",
    "Status": "success"
}
```

6.31 Adjust

6.31.1 Adjust Request

```
{
    "GMID": "05",
    "GTID": "05",
    "GMPW": "03",
    "GTRC": "570c438f242d4a49aec25d679574eb24",
    "TransType": "Adjust",
    "MainAmt": "6736",
    "RequestCardToken": "Y"
}
```

6.31.2 Adjust Response

```
{
    "AccountNum": "478825******8291",
    "AuthAmt": "1735",
    "AuthCode": "TAS021",
    "Brand": "Visa",
    "ErrorCode": "000",
    "ErrorText": "APPROVAL TAS021 ",
    "ExpDate": "0222",
    "GMID": "05",
    "GMPW": "03",
    "GTID": "05",
    "GTRC": "410e7dd378aa4abd89c80fc5f2b4a58f",
    "Medium": "Credit",
    "ResponseCode": "00",
    "ResponseText": "APPROVAL TAS021 ",
    "Status": "success"
}
```

6.32 Cancel

6.32.1 Cancel Request

```
{
    "GMID": "05",
    "GTID": "05",
    "InvoiceNum": "ABCD",
    "MainAmt": "1200",
    "TransType": "Cancel"
}
```

6.32.2 Cancel Response

```
{
    "1000": "000000000393861",
    "AVSResultCode": "0",
    "AccountNum": "478825******8291",
    "AuthAmt": "5213",
    "AuthCode": "TAS908",
    "Brand": "Visa",
    "CardToken": "43b9daa1279148b593a011ae4e396dd9",
    "EntryMode": "Manual",
    "ErrorCode": "000",
    "ErrorText": "APPROVAL TAS908 ",
    "ExpDate": "1222",
    "GTRC": "85903d7caf764f48a87e6d9a11ec2ae2",
    "Medium": "Credit",
    "NewGTRC": "27475b3375704574a6365f697a4186b2",
    "ResponseCode": "00",
    "ResponseText": "APPROVAL TAS908 ",
    "Status": "success"
}
```

6.33 Sale with EMV Data

6.33.1 Sale Request

```
{
  "EMV4F": "A0000000041010",
  "EMV50": "4d415354455243415244",
  "EMV57": "5413330089020045D2512201019460027F",
  "EMV5A": "5413330089020045",
  "EMV5F20": "4d54495030382d32204d434420313341",
  "EMV5F24": "251231",
  "EMV5F28": "0124",
  "EMV5F2A": "0840",
  "EMV5F2D": "656e64656672",
  "EMV5F30": "0201",
  "EMV5F34": "03",
  "EMV82": "5800",
  "EMV84": "A0000000041010",
  "EMV8A": "5931",
  "EMV8E": "000000000000000000410342031E031F00",
  "EMV95": "0200000000",
  "EMV9A": "180308",
  "EMV9B": "E800",
  "EMV9C": "00",
  "EMV9F02": "000000000100",
  "EMV9F03": "000000000000",
  "EMV9F06": "A0000000041010",
  "EMV9F07": "FF00",
  "EMV9F08": "0002",
  "EMV9F09": "0002",
  "EMV9F0D": "FC50A00000",
  "EMV9F0E": "0000000000",
  "EMV9F0F": "F870A49800",
  "EMV9F10": "0210A00000000000DAC000000000000000FF",
  "EMV9F11": "01",
  "EMV9F12": "4D617374657243617264",
  "EMV9F17": "02",
  "EMV9F1A": "0840",
  "EMV9F1B": "00002710",
  "EMV9F1E": "5054303131333731",
  "EMV9F20": "019460027F",
  "EMV9F21": "040928",
  "EMV9F26": "069BE98E8C0AFC69",
  "EMV9F27": "40",
  "EMV9F33": "E0F8C8",
  "EMV9F34": "410302",
  "EMV9F35": "22",
  "EMV9F36": "0001",
  "EMV9F37": "94D5D64A",
  "EMV9F39": "05",
  "EMV9F40": "F800F0A001",
  "EMV9F41": "00000017",
  "EMV9F42": "0124",
  "EMV9F53": "52",
  "EMVDF03": "FC50A8A000",
  "EMVDF04": "0000000000",
  "EMVDF05": "FC50A8F800",
  "EntryModel": "ChipContact",
  "GMID": "1001395976",
  "GMPW": "TSYS03",
  "GTID": "GT1001395979",
  "MainAmt": "100",
  "Medium": "Credit",
  "Track2": "5413330089020045=2512201019460027",
  "TransType": "Sale",
  "NeedSwipeCard": "N"
}
```

6.33.2 Sale Response

```
{
    "1000": "1212MCC111470  ",
    "AVSResultCode": "0",
    "AccountNum": "541333******0045",
    "AuthAmt": "100",
    "AuthCode": "VTLMC1",
    "Brand": "Master",
    "EMV1004": "1",
    "EMV72": "9F18040001860580CA9F3600",
    "EMV8A": "00",
    "EMV91": "0102030405060708",
    "EntryMode": "ChipContact",
    "ErrorCode": "000",
    "ErrorText": "APPROVAL VTLMC1 ",
    "ExpDate": "1225",
    "GTRC": "4fd839ff70494ea9bc9b5b001b368116",
    "Medium": "Credit",
    "NewGTRC": "4fd839ff70494ea9bc9b5b001b368116",
    "ResponseCode": "00",
    "ResponseText": "APPROVAL VTLMC1 ",
    "Status": "success"
}
```

6.34 BatchLookup

6.34.1 BatchLookup Request

```
{
    "TransType": "BatchLookup",
    "GMID": "05",
    "BatchDate": "20180521"
}
```

6.34.2 BatchLookup Response

```
{
    "GMID": "05",
    "BatchIDList": "95dc62ed861041478a02adba250bcb69",
    "Status": "success",
    "ResponseCode": "00",
    "ResponseText": "success",
    "ErrorCode": "000",
    "ErrorText": "success",
    "xMsg_DstUName": "PgcSvcBch",
    "xMsg_DstTrcNum": "151278",
    "xMsg_Action": "xMsgAct_Reply"
}
```

6.35 BatchQuery

6.35.1 BatchQuery Request

```
{
    "GMID": "05",
    "GTID": "05",
    "TransType": "BatchQuery",
    "BatchID": "59c70d89bbf44d51b0c09609734afab1",
    "StartIndex": "0",
    "ResponseLimit": "2"
}
```

6.35.2 BatchQuery Response

```
{
    "GMID": "05",
    "GTID": "05",
    "BatchID": "59c70d89bbf44d51b0c09609734afab1",
    "TransactionList": [{
        "GTRC": "d7fe714cd7944ed0a764242be43af4f6",
        "TransactionNum": "1212MCC111992  ",
        "Brand": "Master",
        "Medium": "Credit",
        "AccountNum": "545454******5454",
        "ExpDate": "**/**",
        "TransType": "Sale",
        "AuthCode": "VTLMC1",
        "AuthTS": "1526904912",
        "FinalizeTS": "1526904912",
        "IncTaxAmt": "0",
        "IncCashBackAmt": "0",
        "TipAmt": "0",
        "AuthAmt": "100",
        "TotalAmt": "100",
        "MainAmt": "100",
        "BaseAmt": "100"
    }, {
        "GTRC": "7c59ca4a57a74d7ebf059ab4e8fd6e8e",
        "TransactionNum": "1212MCC111993  ",
        "Brand": "Master",
        "Medium": "Credit",
        "AccountNum": "545454******5454",
        "ExpDate": "**/**",
        "TransType": "Sale",
        "AuthCode": "VTLMC1",
        "AuthTS": "1526904918",
        "FinalizeTS": "1526904918",
        "IncTaxAmt": "0",
        "IncCashBackAmt": "0",
        "TipAmt": "0",
        "AuthAmt": "100",
        "TotalAmt": "100",
        "MainAmt": "100",
        "BaseAmt": "100"
    }
    ],
    "MoreTransactions": "N",
    "StartIndex": "0",
    "EndIndex": "1",
    "Status": "success",
    "ResponseCode": "00",
    "ResponseText": "success",
    "ErrorCode": "000",
    "ErrorText": "success",
    "xMsg_DstUName": "PgcSvcBch",
    "xMsg_DstTrcNum": "151285",
    "xMsg_Action": "xMsgAct_Reply"
}
```

7. IOS SDK

7.1   initWithDelegate

Parameter	Type	Description
delegate	IPDCManagerNotify	The address of the delegate object that responds to the IPDCManagerNotify protocol

7.2   postTransactionToUrl

Parameter	Type	Description
url	String	URL which transaction send to, currently only supports the https protocol
request	String	Transaction request, JSON format
withTimeout	Integer	Transaction timeout. Unit: second, usually set it as 120

7.3   setProperties

Parameter	Type	Description	
properties	NSDictionary*	Keys	
		enableRushMode	Default value is false
		uploadUrl	URL which transaction send to. Default value is null.
		checkInterval	Time interval that check if uploadUrl is online. Unit: second. Default value is 60
		failedThreshold	Maximum number of consecutive failed transactions. Default value is 3
		When failedThreshold reaches the maximum value, and enableRushMode is true, SDK will enter rush mode.	

8. Appendices

8.1   Cloud9 server

Test Server Configuration		
Multiplexer	testlink.c9pg.com:12000	Used to make pinpad connection
Cloud PDC	https://testlink.c9pg.com:11911/EMV	Used to send transaction request, it supports using pinpad to do the standard EMV transaction.

	https://testlink.c9pg.com:11911/QuickChip	Used to send transaction request, it supports using pinpad to do the QuickChip transaction
REST API	https://testlink.c9pg.com:11911/restApi	Used to send transaction request, it don't support pinpad.
Production Server Configuration		
Multiplexer	link.c9pg.com:12000	Used to make pinpad connection
Cloud PDC	https://link.c9pg.com:11911/EMV	Used to send transaction request, it supports using pinpad to do the standard EMV transaction.
	https://link.c9pg.com:11911/QuickChip	Used to send transaction request, it supports using pinpad to do the QuickChip transaction
REST API	https://link.c9pg.com:11911/restApi	Used to send transaction request, it don't support pinpad.

8.2 Status Code

success	Transaction success
fail	Transaction fail
cancel	Transaction cancel
timeout	Transaction time out, please re-try later
invalidData	The element is wrong

8.3 Error Code

100	No Error
101	Invalid GMID
102	Invalid GTID
103	Invalid GMPW
104	Invalid GTRC
105	Invalid Card Token
106	Invalid Database
107	Processor does not support the card type
108	Processor module not loaded
109	Invalid amount
110	Void amount exceeds original authorized amount
111	Offline transaction can only be used for Credit Card Sale / EBT Food Stamp Sale
112	Credit / EBT Food Stamp card with cashback is not allowed
113	Addtip must be based on Auth/Sale transactions
114	Finalize must be based on Auth transactions
115	Original transaction has already been voided
116	Offline transaction must supply AuthCode
117	Engine process timed out
118	Proxy process timed out
119	PDC process timed out
120	Processor process timed out
128	EntryMode empty
133	Card number invalid
134	Card date expired
137	AVS Verification Failed.
138	CVV Verification Failed.

139	ZIP Verification Failed.
140	Missing PIN.
141	Missing KSN
142	Card data is incomplete
143	EntryMode not support this card type
144	EntryMode not support this transaction type
145	Store&Forward mode not support this transaction type
146	Duplicate transaction.
149	PinPad busy, please wait for the current transaction to finish and try again.
150	Failed to connect to pin pad. Check cable/configuration
151	User/Operator canceled
152	Pin Pad Timeout
154	Failed to read card data. Timed out or user canceled.
156	PinPad invalid serial number. Provide error SN in Unregister.
157	PinPadSerialNumberRegistrationFailed. Internal error: failed to generate unique GTID. Try again.
158	PinPadSerialNumberRegistrationFailed, Pin pad already registered with another GMID/GTID.
162	No Terminal Serial Number registered for TID.
175	Invalid Message Index
176	Invalid Message Length
177	Invalid Image ID
178	Invalid Image Data
179	The type of terminal not support this function
181	Invalid Transaction. Reverse refund transaction has been settled.
182	Invalid InvoiceNum. InvoiceNum is empty or not supplied in Cancel resquest.
202	No record found. Can't find the duplicate transaction record
203	Multiple records found. Found multiple transactions have the same information when doing Cancel.(TotalAmt, InvoiceNum)
999	Undefined error
0NB	No Finalized Transactions to Batch
0GB	Good Batch
0DB	Duplicate Batch
0RB	Rejected Batch
000	Approved and completed
001	Refer to issuer
002	Refer to issuer-Special condition
003	Invalid Merchant ID
004	Pick up card (no fraud)
005	Do not honor
006	General error
007	Pick up card, special condition (fraud account)
008	Honor Mastercard with ID
010	Partial approval for the authorized amount returned in Group III version 022
011	VIP approval
012	Invalid transaction
013	Invalid amount
014	Invalid card number
015	No such issuer
019	Re-enter transaction
021	Unable to back out transaction

028	File is temporarily unavailable
034	Mastercard use only, Transaction Cancelled; Fraud Concern (Used in reversal requests only)
039	No credit account
041	Lost card, pick up (fraud account)
043	Stolen card, pick up (fraud account)
051	Insufficient funds
052	No checking account
053	No savings account
054	Expired card
055	Incorrect PIN
057	Transaction not permitted-Card
058	Transaction not permitted-Terminal
059	Transaction not permitted-Merchant
061	Exceeds withdrawal limit
062	Invalid service code, restricted
063	Security violation
065	Activity limit exceeded
075	PIN tried exceeded
076	Unable to locate, no match
077	Inconsistant data, reversed, or repeat
078	No account
079	Already reversed at switch
080	No Financial impact (used in reversal responses to declined originals).
081	Cryptographic error
082	CVV data is not correct
083	Cannot verify PIN
085	No reason to decline
086	Cannot verify PIN
091	Issuer or switch is unavailable
092	Destination not found
093	Violation, cannot complete
094	Unable to locate, no match
096	System malfunction
0A1	POS device authentication successful
0A2	POS device authentication not successful
0A3	POS device deactivation successful
0B1	Surcharge amount not permitted on debit cards or EBT food stamps
0B2	Surcharge amount not supported by debit network issuer
0CV	Card Type Verification Error
0D3	Transaction failure due to missing or invalid 3D-Secure cryptogram
0E1	Encryption is not configured
0E2	Terminal is not authenticated
0E3	Data could not be decrypted
0EA	Verification error
0EB	Verification error
0EC	Verification error
0HV	Hierarchy Verification Error
0K0	Token request was processed
0K1	Tokenization is not configured
0K2	Terminal is not authenticated
0K3	Data could not be de-tokenized

0M0	Mastercard: Canada region-issued Domestic Debit Transaction not allowed
0N3	Cash back service not available
0N4	Exceeds issuer withdrawal limit
0N7	CVV2 Value supplied is invalid
0R0	Customer requested stop of specific recurring payment
0R1	Customer requested stop of all recurring payments from specific merchant
0T0	First check is OK and has been converted
0T1	Check is OK but cannot be converted This is a declined transaction
0T2	Invalid ABA number, not an ACH participant
0T3	Amount greater than the limit
0T4	Unpaid items, failed negative file check
0T5	Duplicate check number
0T6	MICR error
0T7	Too many checks (over merchant or bank limit)
0V1	Daily threshold exceeded

8.4   Signature (Only support Local PDC)

a) Configuration
   Configuration File: C9PG\PDC\conf\com.jijesoft.gateway.pinpadNameList.ini
   [DeviceSupportELECSignature]
   iPP320=false
   iSC250=true
b) Signature Path
   C9PG\PDC\signature
c) Signature Name
   TimeStamp_GTRC.sig
d) Signature Format
   Hex ASCII with 3-Byte ASCII Signature Format. (Refer to DIV350779-Telium-Retail-Base-Application-RBA-Developers-Guide-Rev-16.pdf, Page 856)

8.5   Glossary

EBT	Electronic Benefits Transfer
PIN	Personal Identification Number
POS	Point-Of-Sale
SDK	Software Development Kit
XML	Extensible Markup Language
SOAP	Simple Object Access Protocol
JSON	JavaScript Object Notation