

WIZARPOS Payment App Integration Protocol

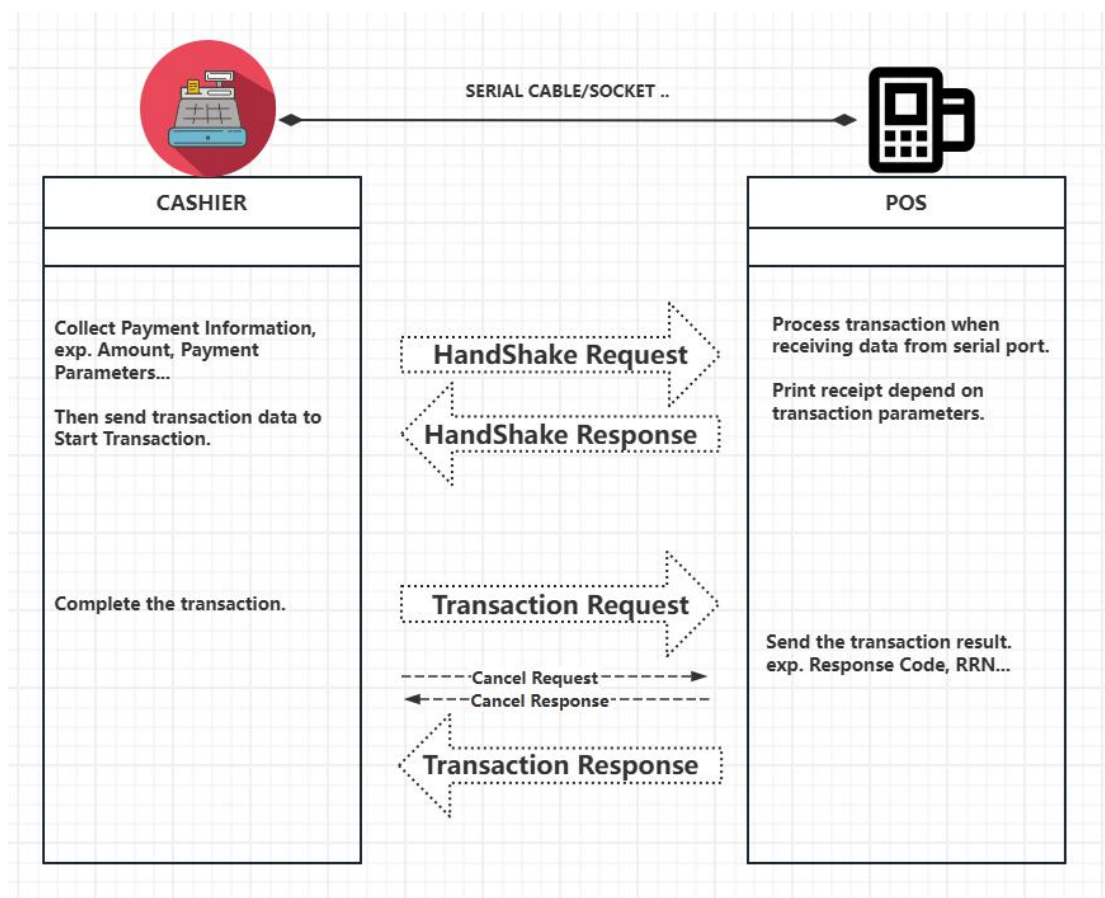
V2.0.8

wizarPOS

1. Introduction

This document describes data exchange protocol between Cashier and WIZARPOS terminal. The Cashier is caller to perform transactions and Terminal will listen to Cashier and execute financial transaction.

2. Transaction Flow



1. Cashier shall send Handshake Request at first to confirm connection is ready.
2. After Handshake, Cashier shall perform transaction and send Transaction Request which contains payment data.
3. POS execute transaction and response the result.

3. Communication Configuration

Serial port	Default Baud Rate: 115200
TCP server	Default port: 6031

4. Data Format

Data package between Cashier and Terminal.

STX	VERSION	CTRL	LEN	CONTENT	ETX	BCC
0x02	0x02	(4 bytes)	(2 bytes)	(LEN bytes)	0x03	(1 byte)

STX indicate start byte of data package, Fixed 0x02.

VERSION indicate protocol version.

CTRL indicate control bytes of data package.

Byte 1:

- 0x01** indicate data from Cashier
- 0x02** indicate data from POS
- 0x03** indicate ACK from Cashier
- 0xF1** indicate Handshake Request
- 0xF2** indicate Handshake Response
- 0xC1** indicate Cancel Request
- 0xC2** indicate Cancel Response
- 0x11** indicate Setting Request
- 0x12** indicate Setting Response

Byte 2: Reserved. Set to 0x00.

Byte 3-4: Sequence number, request package set to X, response package set to X+1 **exp. Request [01] [0F], Response [01] [10]**

LEN indicate length bytes of CONTENT. Hex format.

Exp. [01] [0F] means 0x10F (271) bytes.

CONTENT indicate main content of transaction.

ETX indicate end byte, Fixed **0x03**.

BCC indicate package check value, from VERSION (contain) to ETX (contain).

BCC algorithm:

BCC := [VERSION] xor [CTRL Byte1] xor [CTRL Byte2] xor ... xor [ETX]

5. Handshake Request Content

CONTENT
(4 bytes)

Handshake request content is 4 bytes random value.

6. Handshake Response Content

CONTENT
(4 bytes)

Handshake response content should be same with the request.

7. Transaction Request Content

Transaction Request is content is json format as below:

NAME	FORMAT	DESCRIPTION
"TransType"	String [Mandatory]	Indicate transaction type to be performed. See A1.1 Transaction Type
"TransScheme"	String [Optional]	Cooperation with TransType, used in specific schemes See A1.2 Transaction Scheme
"CallerName"	String [Optional]	Caller name
"TransIndexCode"	String [Optional]	Indicate Cashier trace number Should be unique for every transaction
"BusinessNum"	String [Optional]	Business registration number
"TerminalNum"	String [Optional]	Terminal number
"TransAmount"	String [Optional] [Mandatory for payment]	Total amount including OtherAmount and TipAmount "112233" means 1122.33(USD) or 112.233(JOD) depending on CurrencyCode

		It is recommended to abide by the standard: https://en.wikipedia.org/wiki/ISO_4217
"OtherAmount"	String [Optional]	Cash back amount
"TipAmount"	String [Optional]	Tip amount
"TaxAmount"	String [Optional]	Tax amount, should be included in TransAmount
"DutyFreeAmount"	String [Optional]	value of the tax exemption amount, should be included in TransAmount
"CurrencyCode"	String [Mandatory]	Indicate currency code of transaction 156: RMB 840: USD 400: JOD
"ReqTransDate"	String (YYYYMMDD) [Optional]	exp. "20201212"
"ReqTransTime"	String (hhmmss) [Optional]	exp. "1614033"
"OriTransIndexCode"	String [Optional]	Original request TransIndexCode
"OriTraceNum"	String [Optional]	
"OriInvoiceNum"	String [Optional]	Original transaction InvoiceNum
"OriTransId"	String [Optional]	Indicate original transaction id
"OriRrn"	String [Optional]	Indicate original RRN
"OriTransDate"	String(YYYYMMDD) [Optional]	Indicate original transaction date
"OriTransTime"	String(hhmmss) [Optional]	Indicate original transaction time
"EnableReceipt"	boolean [Optional]	false-Disable Receipt true-Enable Receipt
"AppendingReceiptInfo"	String [Optional]	Indicate message to be printed on receipt
"SkipConfirmProcedure"	boolean [Optional]	false-Don not Skip true-Skip Confirm Procedure

"EnableCancelInPayment"	boolean [Optional]	true-Enable user cancel operation false-Disable user cancel operation
"AdditionalInfo"	String [Optional]	Simplex: No data will be returned for this transaction. Simplify: Simplified parameters will be returned. SN: The device SN will be returned in the AdditionalInfo of the response. Multiple parameters are linked with "&", for example: Simplify&SN.
"SkipUI"	boolean [Optional]	Skip payment application UI interaction: false-Don not Skip true-Skip
"OriAuthCode"	String [Optional]	Transaction Auth Code returned from Host Server

Request content sample:

```
{
  "TransType": "Purchase",
  "TransIndexCode": "112233",
  "TransAmount": "10000",
  "CurrencyCode": "840",
  "ReqTransDate": "20210302",
  "ReqTransTime": "144230",
  "OriTransId": "",
  "OriRrn": "",
  "EnableReceipt": true,
  "AppendingReceiptInfo": "",
  "SkipConfirmProcedure": false,
  "SkipUI": false
}
```

8. Transaction Response Content

Transaction Request is content is json format which contain request data as below:

NAME	FORMAT	DESCRIPTION
"TransType"	String [Mandatory]	Indicate transaction type to be performed.
"TransScheme"	String	Cooperation with TransType ,

	[Optional]	used in specific schemes See A1.2 Transaction Scheme
"CallerName"	String [Optional]	Caller name
"TransIndexCode"	String [Optional]	Indicate Cashier trace number
"TransResult"	boolean [Mandatory]	true: Success false: Failed
"RespCode"	String [Mandatory]	Response code from host server
"RespDesc"	String [Mandatory]	Response message from host server
"ApprovalCode"	String [Optional]	Approval code from host
"CardNum"	String [Optional]	
"EntryMode"	Int [Optional]	0x01: Manual Entry 0x02: Swipe Entry(no CVV) 0x05: Contact ICC(with CVV) 0x07: Contactless 0x90: Swipe Entry(with CVV) 0x91: Contactless MSD 0x95: Contact ICC(no CVV)
"ExpiryDate"	String [Optional]	
"CardBrand"	String [Optional]	exp. Visa/MasterCard/Amex/Discover
"TransAmount"	String [Optional] [Mandatory for Sale/Refund]	"112233" means 1122.33(USD) 112.233(JOD)
"OtherAmount"	String [Optional]	Cash back amount
"TipAmount"	String [Optional]	Tip amount
"Balance"	String [Optional]	

"TaxAmount"	String [Optional]	Tax amount, should be included in TransAmount
"DutyFreeAmount"	String [Optional]	value of the tax exemption amount
"CurrencyCode"	String [Optional]	Indicate currency code of transaction 156: RMB 840: USD 400: JOD
"CountryCode"	String [Optional]	
"DccOriCurrencyCode"	Integer [Optional] [Mandatory when DCC]	Original Request Currency Code to be converted
"DccOriAmount"	String [Optional] [Mandatory when DCC]	Original Request Amount
"DccFee"	String [Optional] [Mandatory when DCC]	DCC Fee of the transaction
"DccExchangeRate"	String [Optional] [Mandatory when DCC]	DCC exchange rate
"DccMarkUp"	String [Optional] [Mandatory when DCC]	DCC mark up
"DccFooterText"	String [Optional] [Mandatory when DCC]	DCC footer text
"TransDate"	String (YYYYMMDD) [Mandatory]	Transaction date exp. "20201212"
"TransTime"	String (hhmmss) [Mandatory]	Transaction time exp. "1614033"
"MID"	String [Optional]	Merchant ID
"TID"	String [Optional]	Terminal ID
"MerchantName"	String [Optional]	Merchant Name
"MerchantAddress"	String [Optional]	Merchant Address

"TraceNum"	String [Optional]	Trace Number of payment app
"TransID"	String [Optional]	Transaction ID returned from Host Server
InvoiceNum	String [Optional]	Invoice Number of transaction
"RRN"	String [Optional]	Retrieval Reference number returned from Host Server
"AuthCode"	String [Optional]	Transaction Auth Code returned from Host Server
"OriTransIndexCode"	String [Optional]	Original request TransIndexCode
"OriInvoiceNum"	String [Optional]	Original transaction InvoiceNum
"OriTransId"	String [Optional]	Indicate original transaction id
"OriRrn"	String [Optional]	Indicate original RRN
"EmvAid"	String [Optional]	Indicate EMV AID
"EmvAppName"	String [Optional]	Indicate EMV app name
"EmvCryptogram"	String [Optional]	Indicate EMV TC or ARQC
"EmvTVR"	String [Optional]	Indicate EMV TVR
"AdditionalInfo"	String [Optional]	

9. Cancel Request Content

Cancel request content is empty.

10. Cancel Response Content

NAME	FORMAT	DESCRIPTION
"cancelled"	boolean [Mandatory]	true: transaction cancelled. False: transaction can't be cancelled

11. Setting Request Content

NAME	FORMAT	DESCRIPTION
"FixedAmount"	String [Mandatory]	Set a fixed amount for the payment application

Request Setting sample:

```
{
  "FixedAmount": "10000"
}
```

12. Setting Response Content

NAME	FORMAT	DESCRIPTION
"Result"	String [Mandatory]	Success Failed

Response Setting sample:

```
{
  "Result": "success"
}
```

13. ACK Content

NAME	FORMAT	DESCRIPTION
Key	String [Mandatory]	Customize keys and values according to requirements

Annex 1

A1.1 Transaction Type

TransType	Description
Purchase	
PreAuth	
IncrementalAuth	
AuthVoid	
AuthCompletion	
BalanceInquiry	
Reversal	
Refund	
Settle	
TipAdjust	
ReadCard	To obtain card information, only "TransType" needs to be passed, and "CardUniqueld" will be returned.
<i>Local transaction</i>	
QueryTransaction	Query transaction result by OriTransIndexCode
PrintLast	
PrintTotal	
PrintDetail	
PrintParameter	
GetPosInfo	
VerifyCardPan	Verify whether card number match original transaction

A1.2 Transaction Scheme

Scheme	Description
Credit	Credit card
Debit	Debit card
EBT	
ECS	
QR	QR transaction

Revision

Version	Description	Date & Author
1.0.0	Create First Version	20210302 fengshuopeng
1.0.1	Add transaction type Add currency and reserved fields in content	20210308 fengshuopeng
1.0.2	Update Transaction Request/Response content	20210326 fengshuopeng
1.0.3	Add "InvoiceNum" for transaction response	20211216 fengshuopeng
1.0.4	Add "SkipConfirmProcedure" in request	20220615 fengshuopeng
1.0.5	Add "DccFee", "DccExchangeRate", "DccMarkUp", "DccFooterText", "Sequence" "EntryMode", "PaymentType" in response	20230829 fengshuopeng
1.0.6	Add cancel request/response	20231017 fengshuopeng
1.0.7	Add " TransResult" in response	20240619 fengshuopeng
2.0.0	Update version to 0x02, request/response fields update	20240715 fengshuopeng
2.0.1	Add "BusinessNum", "TerminalNum", "TaxAmount", "DutyFreeAmount", "AdditionalInfo" in request, add "ApprovalCode", "TaxAmount", "DutyFreeAmount", "AdditionalInfo" in response	20240905 fengshuopeng
2.0.2	Add "OriTransDate", "OriTransTime" in request	20240912 fengshuopeng
2.0.3	Add QR scheme	20241010 fengshuopeng
2.0.4	Add Some TransType	20250218 nihailiang
2.0.5	Add Data Format CTRL Add Setting Request And Response	20250305 nihailiang
2.0.6	Add SkipUI in REQUEST for skip payment APP UI	20250320 nihailiang
2.0.7	Add the transaction type "ReadCard", and return the card unique identifier "CardUniqueld".	20250320 nihailiang
2.0.8	Add the "AdditionalInfo" request parameters Simplex, Simplify, SN. Add the "OriAuthCode" field to the request parameters. Suggestions on adding transaction amount standards	20250901 wukaikai