Technical Manual for Payment Integration

V4.0.3

2018/9/17

S 紅陽支付

Table of Contents

I. Preparation and Important Notes

Important! Read before proceeding!

1. Please apply for an account for test environment integration first by downloading "SunTech - Test Environment Account Application" at SunTech Homepage -> Online Service -> Tech Support. Accounts cannot be shared between a test environment and a production environment, or switched to another type through a parameter change.

2. Once the test account has been activated, you will receive merchant IDs and passwords for different types of payment services by email, and may begin developing your system immediately without having to wait for accounts to open at banks. You will also need to create a password exclusively for transaction purpose (called the Transaction Password). Please access the test environment (https://test.esafe.com.tw), log in at the "Merchants" section, go to the "Change Password" page and check the "Change other password" box to set up your "Transaction Password." This Transaction Password is used for generating the Transaction Verification Value (ChkValue) and is critical for payment parameters verification. Please refer to the relevant service descriptions for details on how ChkValues are generated. This password should be different from the login password received at the time the account is activated. Do not set the same password for both.

3. By default, the test account gives you access to all payment services available. If your website only uses credit card and convenience store payment to collect payment, you simply need to integrate these two services into your system. It is not necessary to integrate all services available in the test environment.

4. You may test the following transactions and results in the test environment:

Name of service	Testable result	Testing method
Credit Card	Approval Successful	General transactions: Input the first 6 digits of an actual card. If you wish to test an installment transaction, you must use the first 6 digits of an actual card that supports installment transactions. The remaining 10 digits can be filled in at random (but do not use the ending pair digits listed reserved for "Approval Failed," as mentioned below). Do not input an expiry date that has already expired (use any month later than the current month). The card security code (a.k.a. CVV, CVV2, CVC, etc.) can be filled in at random. Example of test card number: 4688-2899-1111-2222 (this card number can also be used to test installment transactions) Expiry: 01/23 CVV: 111 Transactions involving 3D Secure: The aforementioned rules apply, but substitute the last 2 digits of card number with 31 or 33 to simulate transactions that involve 3D Secure Example of test card number: 4688-2899-1111-2231 Expiry: 01/23 CVV: 111
	Approval Failed	In addition to the rules mentioned in "Approval Successful" above, substituting the last 2 digits of card number with 00, 41 or 51 enables simulation of Approval Failed. Example of test card number: 4688-2899-1111-2200 Expiry: 01/23 CVV: 111
UnionPay Card	Approval Successful	Once payment is executed via the Payment screen, the system returns a successful transaction result

	Approval Failed	None
Convenience Store Payment (barcoded payment slip)	Generate Payment Slip	Generated immediately by SunTech system when transaction is completed
	Payment Successful	Merchants that have login access to the test environment may search for the transaction and click on "Test Successful"
Convenience Store Payment (payment code)	Generate Payment Code	Generated immediately by SunTech system when transaction is completed
	Payment Successful	Merchants that have login access to the test environment may search for the transaction and click on "Test Successful"
Web ATM Transfer	Transfer Successful	Specify the test transaction as "Successful" on the Payment screen
	Transfer Failed	Specify the test transaction as "Failed" on the Payment screen
ATM Transfer (virtual account number)	Generate account number for fund transfer	Generated immediately by SunTech system when transaction is completed
	Transfer Successful	Merchants that have login access to the test environment may search for the transaction and click on "Test Successful"
Payment & Pickup at Convenience Store	Payment & Pickup	Merchants that have login access to the test environment may search for the transaction and click on "Test Delivery"
	Pickup Only (where payment is made using another method before pickup)	For "Payment Completed" transactions using other payment methods, merchants that have login access to the test environment may search for the transaction and click on "Test Delivery"

Note:

(1) Credit card will not be charged for transactions placed in the test environment.

(2) No tests can be made in the production environment. To execute a chargeback for a transaction completed in the production environment, please log in to the production environment with valid merchant access and use the Refund function. Please refer to the "Refund Request" chapter for more details.

5. Timing of notifications for various payment services (production environment)

Name of service	Notification of completed payment
Credit Card	Instant
UnionPay Card	Instant
Convenience Store Payment (barcoded payment slip)	3~4 working days after payment is made at convenience store (postponed on banking holidays)
Convenience Store Payment (payment code)	2~3 hours after payment is made at convenience store
Web ATM Transfer	Instant
ATM Transfer (virtual account number)	~~Taishin Internation Bank: 2~3 hours after payment is made using ATM, over bank counter, or via Internet banking; postponed on banking holidays~~ CTBC Bank (Chinatrust Commercial Bank): Instant

	(In fact, it will delay for several seconds or more when volume payment transactions occurred)
Payment & Pickup at Convenience Store	Payment & pickup and update of delivery status: The timing of delivery and notification varies between convenience stores, but the timing of notifications should be within 24 hours

The above table does not apply to the test environment

6. The term "empty string" mentioned in this document refers to a string that has a length of zero, which is different from null and space (ASCII code: 32).

7. We recommend that merchants should apply for an SSL certificate to ensure the security of data exchanged between your website and SunTech. Doing so would also avoid the message "insecure data transmission" from popping up when an SSL-enabled browser tries to exchange data with a non-SSL certified website, which may cause consumers to cancel their transaction requests.

8. Sample codes described in this document can be download from SunTech's website (file name: 金流整合範例程式 Integration_Sample_Code).

9. For merchants with IDs that begin with "b" should any failure occur during data transmission (failure to receive data), please log in to Merchants, go to "Profile" and check "Transmission Method" then test again. Please contact us if the problem persists.

10. This document is updated without notification.

II. Integrating Credit Card Payment

The system accepts transactions using VISA/MASTERCARD/JCB credit cards issued by local or foreign banks, and UnionPay debit cards printed with logos of the three organizations mentioned above (for transactions using UnionPay Cards with numbers beginning with 6, please refer to the "Integrating UnionPay Card Payment" chapter). For risk control purposes, SunTech's system has been configured with a default setting to reject transactions using credit cards issued by foreign banks. Please make a separate request if you need to accept credit card payments from foreign customers.

Credit cards can be accepted for full-sum and installment payments (please visit SunTech's website: https://www.esafe.com.tw for a complete list of banks that offer installment services). You are also required to make a separate request to enable installment payments for your customers.

Credit card and UnionPay Card transactions share the same merchant ID, transaction parameters and transaction URL, therefore some of the parameters described below may also apply to UnionPay Cards. For a more detailed description of UnionPay Card transactions, please refer to the "Integrating UnionPay Card Payment" chapter.

1. Transaction Flow and Examples

(a) **Payment flow** is depicted in the following figure (the numbers indicate the sequence of process flow, while the red text indicates elements that need to be designed for your website):

Merchant's website	SunTech	Bank
(1) Sends transaction details	(2) Receives parameters and displays credit card input page	(3) Processes credit card authorization
(5) Receives transaction result	(4) Receives authorization result	
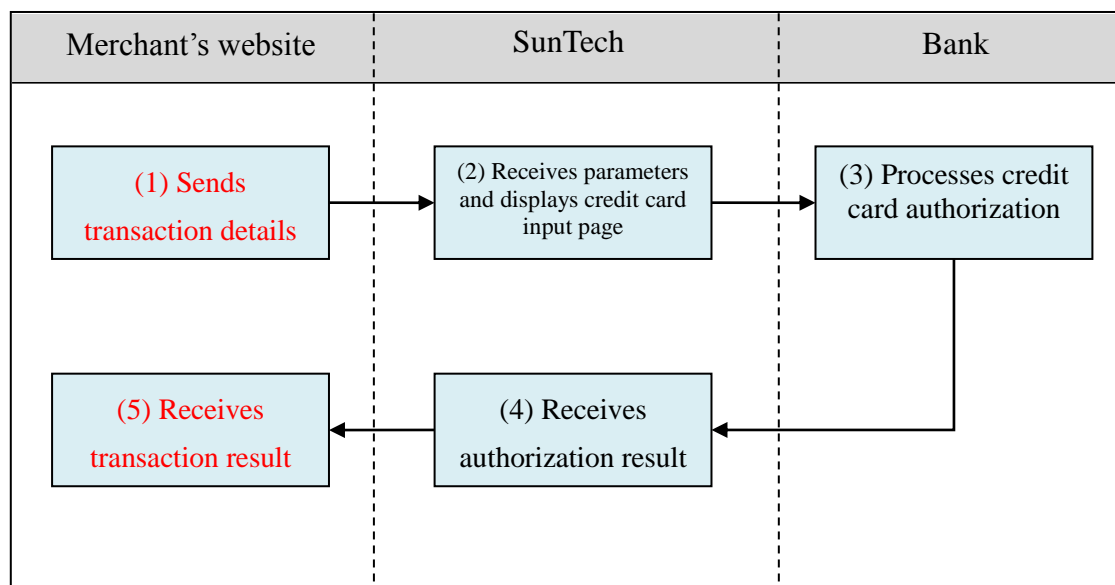
Explanation of the above figure:

(1) Consumer checks out at the merchant's website and sends transaction details (the merchant is required to develop a program for sending transaction information to SunTech; refer to the "Sending Transactions" section for relevant parameters, and use the "creditcard/send" program as an example).

(2) Once SunTech receives the parameters, the consumer's browser will be

directed to SunTech's credit card input page, where it waits for the consumer to input and submit the credit card number.

(3) Bank performs credit card authorization and replies with an authorization result.

(4) SunTech receives the authorization result and passes it on to the merchant.

(5) Merchant receives credit card authorization result, and consumer's browser redirects consumer back to merchant's website. At this point, the merchant's website should display the payment outcome for the consumer (the merchant needs to write a program for receiving the authorization result; refer to the "Receiving Transaction Results" section for relevant parameters, and use the "creditcard/receive" program as an example).

(b) **Delivery workflow and transmission of delivery status:** Please refer to the "Pickup at Convenience Store Procedures" chapter.

2. Sending Transactions

Please send to the following URL using HTTP POST (transactions of all payment services covered in this technical document shall be sent to the same URL but with different parameters; use the credit card program "creditcard/send" as an example):

Production environment	https://www.esafe.com.tw/Service/Etopm.aspx
Test environment	https://test.esafe.com.tw/Service/Etopm.aspx

Caution

(a) The correct data format should be HTTP FORM POST key-value (non-JSON)

(b) Parameters marked with * are mandatory

(c) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, please perform URL Encode before sending. Use UTF-8 for character encoding

(d) Empty string refers to a string that has a length of zero, which is different from null and space (ASCII code: 32)

Description of parameters:

Serial No.	Parameter	Parameter name	Length restriction	Description
1	web	*Merchant ID		Please use "Credit Card service" merchant ID (Please use the "buysafe" merchant ID if you have requested a successful application before 2017/11/14), which is included in the notification letter sent after a successful application. You may also log in to Merchant and inquire under "Service Settings"
2	MN	*Transaction amount	8	Must be an integer and contain no decimal point or thousands separators.

				Currency of denomination: TWD (NTD). (This parameter accepts numbers only)
3	OrderInfo	Transaction detail	400	Describes the goods purchased in the current transaction. Must not contain special characters such as: *'<>[]"
4	Td	Merchant order number	20	Please avoid duplicating order numbers. SunTech's system does not check for duplication of order number across all transactions; its duplication check works only for blocking uncompleted transactions of the same merchant order number sent from the same browser. (This parameter accepts alphanumeric characters only)
5	sna	*Consumer's name	30	Accepts Chinese and English names, but no special characters such as: *'<>[]". This information is mandatory if pickup at convenience store is to be specified (the store assistant will ask for member's name and mobile number during pickup).
6	sdt	*Consumer's TEL	20	Please input mobile number (accepts foreign mobile numbers) without symbols such as #( )-. If pickup at convenience store is to be specified, the system will send an SMS message to inform consumer of the arrival of the goods. (The parameter shall consist entirely of numbers)
7	email	Consumer's Email	100	Required if applicable; must conform to proper Email format. If pickup at convenience store is to be specified, it is recommended to send the consumer's Email as well, in order to avoid a situation where the consumer cannot be informed of the arrival of the goods via SMS (e.g. foreign mobile numbers might not be able to receive SMS).
8	note1	Remark # 1	400	To be used at the merchant's discretion. Once the transaction is completed, these two fields will be sent back to the merchant without alteration. Must not contain special characters such as: *'<>[]"
9	note2	Remark # 2	400	
10	Card_Type	Transaction type	1	Acceptable parameters: Empty string: Card type (credit card or UnionPay Card) can be selected by consumers 0: Credit card 1: UnionPay Card Caution

				Because credit cards (VISA/MASTER/JCB) and UnionPay Card (card numbers that begin with 6) share the same merchant ID (service), please transmit this parameter for distinction. A separate request must be made in order to accept UnionPay Cards. Merchants that do not have NCCC or KGI as the acquirer are unable to accept UnionPay Cards. Please contact SunTech's customer service hotline or sales managers for detail. The merchant, who have requested a successful application before 2017/11/14, may go to "Merchants" -> "Service Settings" to check if the "Service Name" for credit cards (BuySafe) shows "NCCC BuySafe" or "KGI BuySafe." This applies to both production environment and test environment accounts.
11	Country_Type	Payment webpage language		Acceptable parameters: Empty string: for Chinese-English mixed interface EN: for English JIS: for Japanese
12	Term	Installment terms		Please provide options for consumers to choose from in the shopping cart. Acceptable parameters: Empty string, 3, 6, 12, 18, 24 and 30 Caution 1. If the consumer chooses to make a full payment (without installments), please send an empty string instead of 0 or 1 2. Installment payment is available only for credit cards, and unavailable for UnionPay Card (i.e. only available if Card_Type is 0) 3. Not all credit cards can be used for installment payment; please visit SunTech's website: https://www.esafe.com.tw for a complete list of banks that offer an installment service 4. This function is available only if the merchant has NCCC as the acquirer. Please contact SunTech's customer service hotline or sales managers for

				detail. The merchant, who have requested a successful application before 2017/11/14, may go to "Merchants" -> "Service Settings" to check if the "Service Name" for credit cards (BuySafe) shows "NCCC BuySafe." This applies to both production environment and test environment accounts.
13	CargoFlag	Store pickup		This option is for consumers who choose to pick up their goods at convenience stores. Please refer to the "Pickup at Convenience Store Procedures" chapter for more details Acceptable parameters: Empty string or 0: No store pickup required 1: Store pickup (consumers pick up goods at convenience store)
14	StoreID	Pickup store ID	6	Please include a convenience store selection function in your checkout procedures (refer to the "Pickup at Convenience Store Procedures" chapter for more detailed description).
15	StoreName	Pickup store name	10	If the merchant specifies 1 - Store pickup in the CargoFlag above but sends an empty string for this field, SunTech will include a process for the consumer to select convenience store as part of the payment procedure.
16	BuyerCid	Buyer's Tax/VAT number		This option is for consumers who need a receipt with their company Tax/VAT number. Note: 1. It's required to apply "E-Invoice" service to enable this function. Please Refer to "E-Invoice" chapter for details. 2. Buyer's Tax/VAT number and Donation Code are not accepted at the same time.
17	DonationCode	Donation Code		This option is for consumers who want to donate e-invoice to certain organizations. Note: 1. It's required to apply "E-Invoice" service to enable this function. Please Refer to "E-Invoice" chapter for details.

				2. Buyer's Tax/VAT number and Donation Code are not accepted at the same time.
18	ChkValue	*Transaction verification value		Please generate the transaction verification value (ChkValue) using SHA1 (the generated SHA1 value must be converted entirely into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + transaction amount (MN) + installment terms (Term) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example: Merchant ID: S1103020010 Transaction Password: abcd5888 Transaction amount: 1688 Installment terms: 3 The combined string shall be: S1103020010abcd588816883 SHA1 value generated using the combined string becomes: 0B3B7F5BD62D97AD6926DC04A24FE92F386A4E08

3. Receiving Transaction Result

All completed transactions (whether payment is successful or unsuccessful) will have results sent to the designated URL. Please log in to Merchants -> Service Settings to configure your "(1) Successful Transaction Result URL" and "(2) Failed Transaction Result URL" showed as below figure (use the "creditcard/receive" program as an example).

Furthermore, to prevent unexpected occurrences that result in the failed transmission of transaction results (such as network disruption, consumer's input error, browsers being closed, etc.), SunTech has provided a transaction result resending service (number "3" field in the above figure). Please refer to the "Transaction Confirmation Notification" chapter for more details.

Caution
(a) The correct data format should be HTTP FORM POST key-value (non-JSON)
(b) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, all information must be transmitted using URL Encode and decoded using URL Decode before proceeding further. Use UTF-8 for character encoding
(c) If TCP/UDP port number included in the transaction result URLs (e.g. https://www.mywebsite.com.tw:8080/xxx.php), only the following ports are allowed for security reason: 80, 443, 8080~8085.

Description of parameters:

Serial No.	Parameter	Parameter name	Description
1	buysafeno	SunTech transaction number	Serial number of the transaction (use alphanumeric characters only)
2	web	Merchant ID	The "Credit Card service" merchant ID (It would be "buysafe" merchant ID if you have requested a successful application before 2017/11/14), which is provided at the time of account application
3	Td	Merchant order number	(This parameter accepts alphanumeric characters only)
4	MN	Transaction amount	(This parameter accepts numbers only)
5	webname	Merchant website name	This is the name of the merchant's website registered on the SunTech system
6	Name	Consumer's name	To ensure compliance with the Personal Information Protection Act and avoid leakage of personal information during transmission, some characters will be masked during the process. Example: W○○○○○○○g
7	note1	Remark # 1	Additional details that are sent along with the transaction, which will be returned back to the merchant without alteration
8	note2	Remark # 2	
9	ApproveCode	Approval code	The approval code of authorization obtained if the credit card transaction is approved successfully
10	Card_NO	Last 4 digits of the credit card number	(This parameter accepts numbers only)
11	SendType	Transmission method	Parameter description: 1: Background transmission 2: Webpage transmission Note: Once a transaction has been completed, results will be sent back to the merchant using foreground (webpage) as well as background transmission. Therefore, the merchant's website should be designed to receive 1~2 returning transmissions (this is not a duplicate transaction).

12	errcode	Response code	00 (numeric characters) represents a successful transaction; all other codes indicate transaction failure Please verify transactions against the ChkValue. (The parameter shall consist entirely of alphanumeric characters)
13	errmsg	Interpretation of response code	A text description on the cause of error. Please use the errcode field above to determine whether a transaction is successful; do not use text descriptions here for a system decision.
14	Card_Type	Transaction type	Parameter description: 0: Credit card 1: UnionPay Card
15	CargoNo	Convenience store delivery ID	When the consumer chooses to pick up goods at a convenience store, the system will generate a delivery ID that the merchant may use to send goods to the convenience store (please refer to the "Pickup at Convenience Store Procedures" chapter for more details). This parameter will have an empty string if the consumer does not require pick-up at convenience store, or if the transaction fails, or if the system fails to retrieve the delivery ID. (Please refer to the "Pickup at Convenience Store Procedures" chapter)
16	StoreID	Pickup store ID	Information about the convenience store that consumer has chosen. This parameter will have an empty string if the transaction fails or if the system fails to retrieve the delivery ID.
17	StoreName	Pickup store name	
18	InvoiceNo	Invoice number	Please refer to descriptions on "E-Invoice"
19	ChkValue	Transaction verification value	The transaction verification value (ChkValue) shall be generated using SHA1. The merchant is advised to generate combined strings and the transaction verification value (ChkValue) using the methods described below, and to compare them with values sent by the SunTech system (the generated SHA1 value shall be entirely converted into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + SunTech transaction number (buysafeno) + transaction amount (MN) + response code (errcode) + convenience store delivery ID (CargoNo) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example:

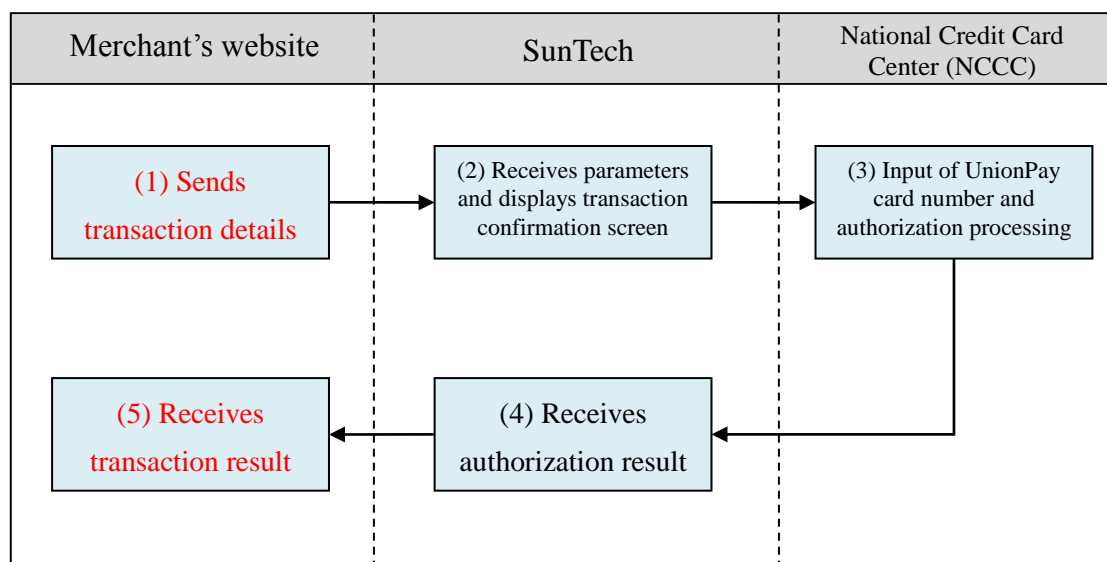|			Merchant ID: S1103020010 Transaction Password: abcd5888 SunTech transaction number: 2400009912300000019 Transaction amount: 1688 Response code: 00 Convenience store delivery ID: empty string The combined string shall be: S1103020010abcd5888240000991230000001 9168800 SHA1 value generated using the combined string becomes: 2309D96F77C83B4E777793FB95D0ED60C 3FFC4E9

III. Integrating UnionPay Card Payment

In this chapter, UnionPay Card refers any bank card (debit card) with a card number that begins with 6. UnionPay Cards that have a VISA/MASTERCARD/JCB logo printed on them shall be treated as ordinary credit cards of the respective organization, and should not be treated as UnionPay Card transactions.

A separate request must be made in order to accept UnionPay Cards. Merchants that do not have NCCC or KGI as the acquirer are unable to accept UnionPay Cards. Please contact SunTech's customer service hotline or sales managers for detail. The merchant, who have requested a successful application before 2017/11/14, may go to "Merchants" -> "Service Settings" to check if the "Service Name" for credit cards (BuySafe) shows "NCCC BuySafe" or "KGI BuySafe." This applies to both production environment and test environment accounts.

The UnionPay Card shares the same merchant ID, transaction parameters and transaction URL as credit cards, therefore the URL designated for receiving credit card transactions must also be capable of receiving UnionPay Card transactions. Please refer to the "Integrating Credit Card Transactions" chapter for parameters used in the transmission of transactions. The following context outlines the differences of the UnionPay Card, which system developers should be aware of.

1. Transaction Flow and Examples

(a) **Payment flow** is depicted in the following figure (the numbers indicate the sequence of process flow, while the red text indicates elements that need to be designed for your website):

Merchant's website	SunTech	National Credit Card Center (NCCC)
(1) Sends transaction details	(2) Receives parameters and displays transaction confirmation screen	(3) Input of UnionPay card number and authorization processing
(5) Receives transaction result	(4) Receives authorization result	

Explanation (no further description is provided for steps that are identical to credit cards):

(1) Consumer checks out at the merchant's website and sends transaction details (the merchant is required to develop a program for sending transaction information to SunTech; refer to the "Sending Transactions"

section for relevant parameters, and use the "unionpay/send" program as an example).

(2) Once SunTech receives the parameters, the consumer's browser will be directed to SunTech's transaction confirmation screen, where it waits for the consumer to confirm and send the relevant details.

(3) Consumer inputs card number into the NCCC system, which is forwarded to the UnionPay system for authorization (this process requires real SMS verification, which cannot be simulated under the test environment).

(5) The merchant's website receives credit card authorization <u>in the background</u>. Note: due to system restrictions, the browser is unable to redirect consumer back to the merchant's website; therefore the merchant should update order status on its webpage based on authorization results received in the background (refer to the "Receiving Transaction Result" chapter on how to program the reception of card authorization and the parameters involved; use the "creditcard/receive" program as an example).

(b) Delivery workflow and transmission of delivery status: Please refer to the "Pickup at Convenience Store Procedures" chapter.

2. Sending Transactions

Description of parameters (no further explanation is provided for parameters that are identical to credit cards):

Serial No.	Parameter	Parameter name	Length restriction	Description
1	web	*Merchant ID		Same as credit cards; please use "Credit Card service" merchant ID (Please use the "buysafe" merchant ID if you have requested a successful application before 2017/11/14)
2	MN	*Transaction amount	8	Must be an integer and contain no decimal point or thousands separators. Currency of denomination: TWD (NTD). Transaction cannot be denominated in CNY (RMB). (This parameter accepts numbers only)
12	Term	Installment terms		Installment payment is unavailable for UnionPay Card; please send an empty string
14	Card_Type	Transaction type		Parameter description: 0: Credit card transaction 1: UnionPay Card transaction You may set the parameter to 1, so that consumers can only make payments using UnionPay Card at your website

3. Receiving Transaction Result

Description of parameters (no further explanation is provided for parameters that are identical to credit cards):

Serial No.	Parameter	Parameter name	Description
9	ApproveCode	Approval code	No approval code of authorization is provided for UnionPay Card payment whether they succeed or fail
10	Card_NO	Last 4 digits of the credit card number	Unable to obtain the last 4 digits
11	SendType	Transmission method	Parameter description: 1: Background transmission Note: Information will be sent back to the merchant's website once a transaction is completed. Due to system restrictions, information will be sent to the merchant's URL only in the background.

IV. Integrating Convenience Store Payment (barcoded payment slip)

If consumer chooses convenience store payment (barcoded payment slip) as the payment method, an Email containing the payment slip will be sent to the consumer once the transaction is completed. The consumer may then print out this payment slip and make payment at any of the 4 convenience store chains (7-11, FamilyMart, Hi-Life, and OK mart) or at Chunghwa Post. If the consumer loses the payment slip, the convenience store will be able to log in to Merchants, search for the transaction, download a digital copy of the payment slip and send it again to the consumer.

Caution
(1) Convenience store payment slip is capped at a maximum amount of NT$20,000.
(2) Do not present any payment slip generated from the test environment for payment at convenience store. Since there is no corresponding transaction, the payment can neither be credited nor refunded.

Convenience store payment (barcoded payment slip) shares the same merchant ID, transaction parameters and transaction URL as ATM Transfer (virtual account), therefore some of the parameters also apply to ATM Transfer (virtual account) transactions. Please refer to the "ATM Transfer (virtual account)" chapter for more details.

1. Transaction Flow and Examples
    (a) **Transaction and payment flow** is depicted in the following figure (the numbers indicate the sequence of process flow, while the red text indicate elements that need to be designed for your website):

Merchant's website	SunTech	Convenience store
(1) Sends transaction details	(2) Receives parameters and displays transaction confirmation screen	
(4) Receives transaction result	(3) Generates payment slip	
(7) Receives payment result	(6) Receives payment advice and forwards to the merchant	(5) Consumer makes payment at convenience store
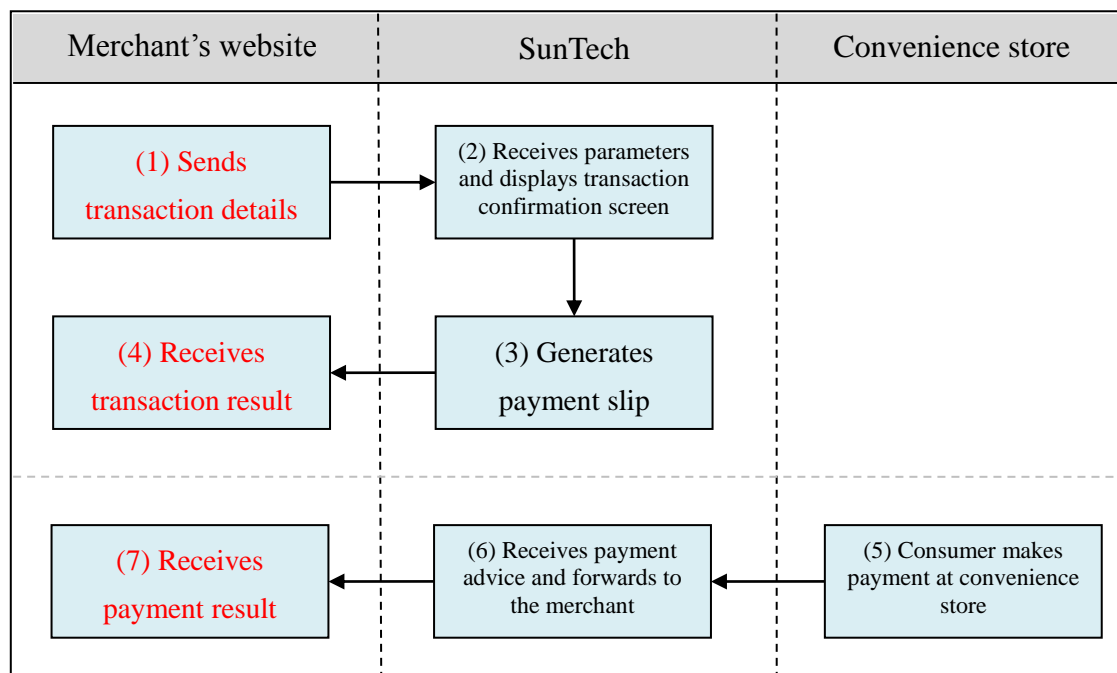
Explanation of the above figure:

(1) Consumer checks out at the merchant's website and sends transaction details (the merchant is required to develop a program for sending transaction information to SunTech; refer to the "Sending Transactions" section for relevant parameters, and use the "24payment/send" program as an example).

(2) Once SunTech receives the parameters, the consumer's browser will be directed to SunTech's transaction confirmation screen, where it waits for the consumer to confirm and send the relevant details.

(3) Once the consumer clicks Submit, SunTech will generate a barcoded payment slip and e-mail it to both the consumer and the merchant (so that if consumer loses the payment slip, the merchant may send another copy to the consumer).

(4) The merchant receives the transaction details, and the browser redirects the consumer back to the merchant's website (the merchant is required to write a program for receiving transaction results; refer to the "Receiving Transaction Result" section for relevant parameters, and use the "24payment/receive" program as an example). It is advisable for the merchant to display a notice that reminds the consumer to make payment at a convenience store before the due date (the due date can be set by the merchant; refer to the "Sending Transactions" section for relevant parameters). Furthermore, parameters sent back to the merchant also contain the original barcode, which allows the merchant to generate and print the payment slip on their own.

(5) Once the consumer has made payment at a convenience store using the payment slip, a payment notification will be sent to SunTech (this notification is not sent immediately after the consumer's payment; please refer to "Preparation and Important Notes" chapter for more details on the timing of notifications).

(6) SunTech receives the payment notification and forwards it to the merchant.

(7) Merchant receives the payment notification and updates the order status on its website (the merchant needs to write a program for receiving payment notification; please refer to the "Receiving Payment Results" chapter for relevant parameters, and use the "24payment/paid" program as an example).

(b) Delivery workflow and transmission of delivery status: Please refer to the "Pickup at Convenience Store Procedures" chapter.

2. Sending Transactions

Please send to the following URL using HTTP POST (transactions of all payment services covered in this technical document shall be sent to the same URL but with different parameters; a sample program "24payment/send" has been provided as a reference for convenience store payment (barcoded payment slip)):

Production environment	https://www.esafe.com.tw/Service/Etopm.aspx
Test environment	https://test.esafe.com.tw/Service/Etopm.aspx

Caution
(a) The correct data format should be HTTP FORM POST key-value (non-JSON)
(b) Parameters marked with * are mandatory
(c) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, please perform URL Encode before sending. Use UTF-8 for character encoding
(d) Empty string refers to a string that has a length of zero, which is different from null and space (ASCII code: 32)

Description of parameters:

Serial No.	Parameter	Parameter name	Length restriction	Description
1	web	*Merchant ID		Please use "24Payment" merchant ID, which is included in the notification letter sent after a successful application. You may also log in to Merchant and inquire under "Service Settings"
2	MN	*Transaction amount	8	Must be an integer and contain no decimal point or thousands separators. Currency of denomination: TWD (NTD). (This parameter accepts numbers only) Caution (1) This amount must equal the product unit price multiplied by product quantity. The transaction may not proceed unless the two figures match. (2) The amount of payment is capped at NT$20,000.
3	OrderInfo	Transaction detail	400	Describes the goods purchased in the current transaction. Must not contain special characters such as: *'<>[]"
4	Td	Merchant order number	20	Please avoid duplicating order numbers. SunTech's system does not check for duplication of order number across all transactions; its duplication check works only for blocking uncompleted transactions of the same merchant order number sent from the same browser. (This parameter accepts alphanumeric characters only)
5	sna	*Consumer's name	30	Accepts Chinese and English names, but no special characters such as: *'<>[]". This information is mandatory if pickup at convenience store is to be specified (the store assistant will ask for member's name and mobile number during pick-up).
6	sdt	*Consumer's TEL	20	Please input mobile number (accepts foreign mobile numbers) without symbols such as #( )-. If pickup at

				convenience store is to be specified, the system will send an SMS message to inform consumer of the arrival of the goods. (The parameter shall consist entirely of numbers)
7	email	Consumer's Email	100	Required if applicable; must conform to proper Email format. If pickup at convenience store is to be specified, it is recommended to send the consumer's Email as well, in order to avoid a situation where the consumer cannot be informed of the arrival of the goods via SMS (e.g. foreign mobile numbers might not be able to receive SMS).
8	note1	Remark # 1	400	To be used at the merchant's discretion. Once the transaction is completed, these two fields will be sent back to the merchant without alteration. Must not contain special characters such as: *'<>[]"
9	note2	Remark # 2	400	
10	DueDate	*Payment due date	8	The merchant must specify a payment due date, which can be any time from 1~180 days. To encourage early payment, it is advisable not to set the payment due date too late. The acceptable date format is: YYYYMMDD; example: 20170824
11	UserNo	User number	15	This field can be used at the merchant's discretion, for things such as membership number. Do not use special characters such as: *'<>[]"
12	BillDate	Billing date	8	The billing date defined by merchant. Acceptable date format: YYYYMMDD; example: 20170824
13	ProductName1 ~ ProductName10	*Product name	100	Accepts up to 10 products. Each product may have a name of up to 100 characters, but may not contain special characters such as: *'<>[]". If the product quantity is too large or if one of the products contains a negative value, it is recommended to transmit the entire transaction under one product name, such as: Retail goods.
14	ProductPrice1 ~ ProductPrice10	*Product unit price	5	Accepts up to 10 products. Each product must have a unit price that is greater than 0 and smaller than or equal to 99999. If product quantity is too large or if one of the products contains a negative value, it is recommended to transmit the entire transaction under one product name, such as: Retail goods. Caution: The product unit price multiplied by product quantity must

				equal the transaction amount. The transaction may not proceed unless the two figures match.
15	ProductQuantity1 ~ ProductQuantity10	*Product quantity	5	Accepts up to 10 products. Each product must have a unit price that is greater than 0 and smaller than or equal to 99999
16	AgencyType	Payment method		Acceptable parameters: Empty string: Generates a payment slip that contains a barcode and ATM transfer (virtual account number) 1: Generates barcoded payment slip only. The payment slip Emailed to the consumer will only contain the barcode, making ATM transfer (virtual account) unavailable. Caution: transactions that amount to more than NT$20,000 will be rejected 2: Generates ATM transfer account number (virtual account) only. The payment slip e-mailed to consumer will contain only ATM transfer account number (virtual account with no barcode. Please refer to the "Integrating ATM Transfer (virtual account)" chapter for a more detailed explanation of this payment method.
17	AgencyBank	ATM Transfer (virtual account) bank type		You can designate or provide an option on your website to let customers choose which bank account for transfer to. Acceptable parameters: ~~Empty string or 0: Taishin International Bank~~ 1: CTBC Bank (Chinatrust Commercial Bank)
18	CargoFlag	Store pickup		This option is for consumers who choose to pick up their goods at convenience stores. Please refer to the "Pickup at Convenience Store Procedures" chapter for more details. Acceptable parameters: Empty string or 0: No store pickup required 1: Store pickup (consumers pick up goods at convenience store)
19	StoreID	Pickup store ID	6	Please include a convenience store selection function in your checkout procedures (refer to the "Pickup at Convenience Store Procedures" chapter
20	StoreName	Pickup store name	10	

				for more detailed description). If the merchant specifies 1 - Store pickup in the CargoFlag above but sends an empty string for this field, SunTech will include a process for the consumer to select convenience store as part of the payment procedure.
21	BuyerCid	Buyer's Tax/VAT number		This option is for consumers who need a receipt with their company Tax/VAT number. Note: 1. It's required to apply "E-Invoice" service to enable this function. Please Refer to "E-Invoice" chapter for details. 2. Buyer's Tax/VAT number and Donation Code are not accepted at the same time.
22	DonationCode	Donation Code		This option is for consumers who want to donate e-invoice to certain organizations. Note: 1. It's required to apply "E-Invoice" service to enable this function. Please Refer to "E-Invoice" chapter for details. 2. Buyer's Tax/VAT number and Donation Code are not accepted at the same time.
23	ChkValue	*Transaction verification value		Please generate the transaction verification value (ChkValue) using SHA1 (the generated SHA1 value must be converted entirely into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + transaction amount (MN) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example: Merchant ID: S1103020010 Transaction Password: abcd5888 Transaction amount: 1688 The combined string will be: S1103020010abcd58881688

				The SHA1 value generated using the combined string becomes: CEFB535782B005BA34B67AEC5A167 368FD9B9741

3. Receiving Transaction Result

Once a transaction is established, the system will send the payment barcode along with transaction details to the designated URL (payment has yet to be made at this stage). Please log in to Merchants -> Service Settings to configure your "(2)Successful Transaction Result URL" showed as below figure (use the "24payment/receive" program as an example). If you do not configure this URL (i.e. leave the field empty), transaction details will be displayed on the SunTech website instead.

Caution

(a) The correct data format should be HTTP FORM POST key-value (non-JSON)

(b) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, all information must be transmitted using URL Encode and decoded using URL Decode before proceeding further. Use UTF-8 for character encoding

(c) If TCP/UDP port number included in the transaction result URLs (e.g. https://www.mywebsite.com.tw:8080/xxx.php), only the following ports are allowed for security reason: 80, 443, 8080~8085.

Description of parameters:

Serial No.	Parameter	Parameter name	Description
1	buysafeno	SunTech transaction number	Serial number of the transaction (use alphanumeric characters only)
2	web	Merchant ID	The "24Payment" merchant ID, which is provided at the time of account application
3	Td	Merchant order number	(This parameter accepts alphanumeric characters only)
4	MN	Transaction amount	(This parameter accepts numbers only)
5	webname	Merchant website name	This is the name of the merchant's website registered on the SunTech system
6	Name	Consumer's name	To ensure compliance with the Personal Information Protection Act and avoid leakage of personal information during transmission, some characters will be masked during the process. Example: W○○○○○○○g
7	note1	Remark # 1	Additional details that are sent along with the

8	note2	Remark # 2	transaction, which will be returned back to the merchant without alteration
9	SendType	Transmission method	Parameter description: 1: Background transmission 2: Webpage transmission Note: Once a transaction has been completed, results will be sent back to the merchant using foreground (webpage) as well as background transmission. Therefore, the merchant's website should be designed to receive 1~2 returning transmissions (this is not a duplicate transaction).
10	UserNo	User number	This field can be defined at the merchant's discretion, for things such as membership number
11	BarcodeA BarcodeB BarcodeC	Convenience store barcode sections 1~3	Sections 1~3 of the barcode that is used exclusively for payment at <u>convenience stores</u>. Make sure that the barcode is arranged in the correct sequence. Payment at convenience stores using barcoded payment slips is unavailable for transactions that amount to more than NT$20,000.
12	PostBarcodeA PostBarcodeB PostBarcodeC	Chunghwa Post barcode sections 1~3	Sections 1~3 of the barcode that is used exclusively for payment at <u>Chunghwa Post</u>. Make sure that the barcode is arranged in the correct sequence. Payment at Chunghwa Post using barcoded payment slip is unavailable for transactions that amount to more than NT$20,000.
13	EntityATM	ATM transfer account number	The account number, bank code (includes branch code if required), and bank branch name that is used exclusively for accepting payment for that particular transaction. A more detailed description of these fields can be found in the "ATM Transfer (virtual account)" chapter. It returns empty if AgencyType (Payment method) is specified as "1".
14	BankCode	ATM transfer bank code	
15	BankName	ATM transfer bank branch name	
16	ChkValue	Transaction verification value	The transaction verification value (ChkValue) shall be generated using SHA1. The merchant is advised to generate combined strings and the transaction verification value (ChkValue) using the methods described below, and to compare them with values sent by the SunTech system (the generated SHA1 value shall be entirely converted into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + SunTech transaction number (buysafeno) + transaction amount (MN) + ATM transfer account number (EntityATM)

<table>
<tr><td></td><td></td><td></td><td>

Important:
(1) Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password
(2) Even if you do not make use of the ATM transfer account number, this information is still required to compose the ChkValue, and therefore cannot be omitted (empty string is possible in certain condition)

Example:
Merchant ID S1103020010
 Transaction Password abcd5888
 SunTech transaction number 2400009912300000019
 transaction amount 1688
 ATM transfer account number 91708888888888

The combined string shall be:
S1103020010abcd58882400009912300000019168891708888888888

The SHA1 value generated using the combined string becomes:
0C7165F2B37F0DA2FC3B01796B5ACEEE965B63C9

</td></tr>
</table>

Barcode rules for self-generated payment slips:
(1) Use Code39 for the barcode.
(2) The different barcode sections must be arranged from top to bottom (3 sections); leave at least 0.6cm of spacing in between. Spaces to the left and right sides of the barcode (Quiet Zone) are generally 10 times the width of the thinnest stripe (X dimension) or 1/4 inch. We recommend a width of approximately 2cm.
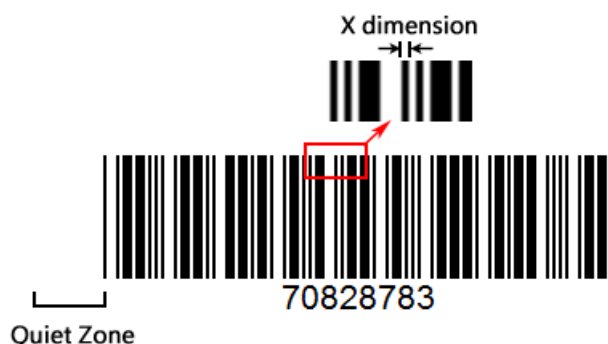
(3) The length of barcode must not exceed 6.2cm, and shall contain no more than 20 alphanumeric characters. The height of barcode should be kept

between 0.8cm ~ 1.4cm. The recommended width ratio for the barcode is 2:5; the wider the print the better.

(4) Each section of the barcode must be printed with a prefix character "*" and a suffix character "*".

(5) Barcodes should be printed with the words "For convenience store use only" or "For Chunghwa Post use only" for better distinction.

4. Receiving Payment Results

Once the consumer has completed payment and SunTech receives notification of a successful payment, the result will be sent to the designated website. Please log in to Merchants -> Service Settings to configure your "(1)Payment Result Receiving URL" showed as below figure (use the "24payment/paid" program as an example).

Furthermore, to prevent unexpected occurrences that result in the failed transmission of payment results (such as network disruption, the merchant's website being repaired, etc.), SunTech has provided a payment result resending service (number "3" field in the above figure). Please refer to the "Transaction Confirmation Notification" chapter for more details.

Caution

(a) The correct data format should be HTTP FORM POST key-value (non-JSON)

(b) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, all information must be transmitted using URL Encode and decoded using URL Decode before proceeding further. Use UTF-8 for character encoding

(c) If TCP/UDP port number included in the transaction result URLs (e.g. https://www.mywebsite.com.tw:8080/xxx.php), only the following ports are allowed for security reason: 80, 443, 8080~8085.

Description of parameters:

Serial No.	Parameter	Parameter name	Description
1	buysafeno	SunTech transaction number	Serial number of the transaction (use alphanumeric characters only)
2	web	Merchant ID	The "24Payment" merchant ID, which is provided at the time of account application
3	Td	Merchant order number	(This parameter accepts alphanumeric characters only)
4	MN	Transaction amount	(This parameter accepts numbers only)
5	Name	Consumer's name	To ensure compliance with the Personal Information Protection Act and avoid leakage

			of personal information during transmission, some characters will be masked during the process. Example: W○○○○○○○g
6	note1	Remark # 1	Additional details that are sent along with the transaction, which will be returned back to the merchant without alteration
7	note2	Remark # 2	
8	UserNo	User number	This field can be defined at the merchant's discretion, for things such as membership number
9	PayDate	Payment date	The day the consumer makes payment at convenience store or via ATM Transfer. Acceptable date format: YYYYMMDD; example: 20170824
10	PayTime	Payment time	The time the consumer makes payment via ATM Transfer. This field is available for ATM Transfer only. Acceptable time format: HHMM; example: 1530
11	PayType	Payment method	Parameter description: 1: Payment via barcode (convenience store) 2: Payment via barcode (Chunghwa Post) 3: Payment via ATM Transfer (virtual account)
12	PayAgency	Payer's bank ID	ID of the bank from which the consumer transfers payment. The bank ID (3 digits) is transmitted only if the consumer makes payment via ATM Transfer (virtual account). For example, if the consumer makes a payment using a Taishin Bank account, the bank ID will show 812. Leave empty string for payment via barcode.
13	errcode	Response code	00 (numeric characters) represents a successful transaction Please verify transactions against the ChkValue. (The parameter shall consist entirely of alphanumeric characters)
14	CargoNo	Convenience store delivery ID	When the consumer chooses to pick up goods at a convenience store, the system will generate a delivery ID that the merchant may use to send goods to the convenience store (please refer to the "Pickup at Convenience Store Procedures" chapter for more details). This parameter will have an empty string if the consumer does not require pick-up at convenience store, or if the transaction fails, or if the system fails to retrieve the delivery ID.
15	StoreID	Pickup store ID	Information about the convenience store that consumer has chosen. This parameter will have an empty string if the transaction fails or if the system fails to retrieve the delivery ID.
16	StoreName	Pickup store name	
17	InvoiceNo	Invoice number	Please refer to descriptions on "E-Invoice"
18	ChkValue	Transaction verification value	The transaction verification value (ChkValue) shall be generated using SHA1. The merchant is advised to generate combined strings and the

			transaction verification value (ChkValue) using the methods described below, and to compare them with values sent by the SunTech system (the generated SHA1 value shall be entirely converted into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + SunTech transaction number (buysafeno) + transaction amount (MN) + response code (errcode) + convenience store delivery ID (CargoNo) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example: Merchant ID: S1103020010 Transaction Password: abcd5888 SunTech transaction number: 2400009912300000019 Transaction amount: 1688 Response code: 00 Convenience store delivery ID: empty string The combined string shall be: S1103020010abcd58882400009912300000019 168800 SHA1 value generated using the combined string becomes: 2309D96F77C83B4E777793FB95D0ED60C3F FC4E9

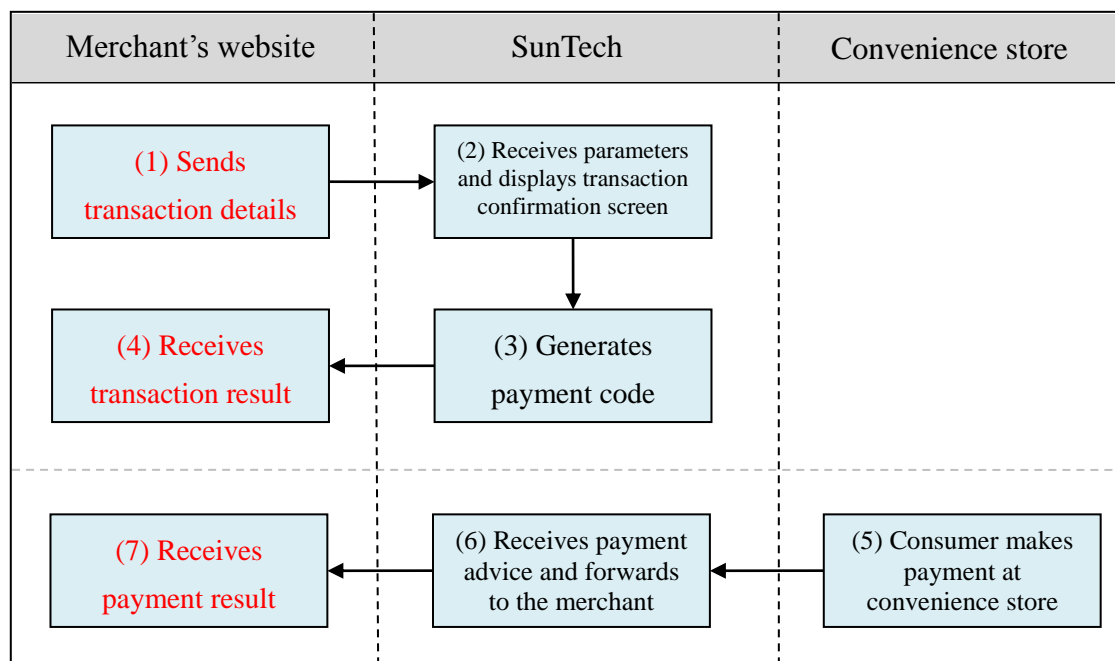# V. Integrating Convenience Store Payment (Payment Code)

If the consumer chooses convenience store payment (payment code, named PayCode as the service name) as the payment method, a payment code will be provided at the time the transaction is established. The consumer may then approach any of the 4 convenience store chains (7-11, FamilyMart, Hi-Life, and OK mart) to print out a payment slip by inputting the payment code into the kiosk machine, and then present the payment slip and pay at the convenience store counter.

Caution
(1) Convenience store payment (payment code) is capped at a maximum amount of NT$20,000.
(2) Do not present any payment slip generated from the test environment for payment at convenience store. Since there is no corresponding transaction, the payment can neither be credited nor refunded.

1. Transaction Flow and Examples
   (a) **Transaction and payment flow** is depicted in the following figure (the numbers indicate the sequence of process flow, while the red text indicate elements that need to be designed for your website):

Merchant's website	SunTech	Convenience store
(1) Sends transaction details	(2) Receives parameters and displays transaction confirmation screen	
(4) Receives transaction result	(3) Generates payment code	
(7) Receives payment result	(6) Receives payment advice and forwards to the merchant	(5) Consumer makes payment at convenience store

Explanation of the above figure:
(1) Consumer checks out at the merchant's website and sends transaction details (the merchant is required to develop a program for sending transaction information to SunTech; refer to the "Sending Transactions" section for relevant parameters, and use the "paycode/send" program as an example).

(2) Once SunTech receives the parameters, the consumer's browser will be directed to SunTech's transaction confirmation screen, where it waits for the consumer to confirm and send the relevant details.

(3) Once the consumer presses Submit, SunTech will generate a payment code exclusively for that transaction.

(4) The merchant receives transaction details, and the browser redirects the consumer back to the merchant's website (the merchant is required to write a program for receiving transaction results; refer to the "Receiving Transaction Result" section for relevant parameters, and use the "paycode/receive" program as an example). It is advisable for the merchant to display a notice (showing the payment code, available convenience stores, payment instructions) that reminds the consumer to make payment at a convenience store before the due date (the due date can be set by the merchant; refer to the "Sending Transactions" section for relevant parameters).

(5) The consumer approaches a convenience store to print out a payment slip by inputting the payment code into the kiosk machine, and then presents the payment slip and pays at convenience store counter. The convenience store sends a payment notification to SunTech (this notification is not sent immediately after consumer's payment; please refer to the "Preparation and Important Notes" chapter for more details on the timing of notifications).

(6) SunTech receives the payment notification and forwards it to the merchant.

(7) Merchant receives the payment notification and updates the order status on its website (the merchant needs to write a program for receiving payment notification; please refer to the "Receiving Payment Results" chapter for relevant parameters, and use the "paycode/paid" program as an example).

(b) Delivery workflow and transmission of delivery status: Please refer to the "Pickup at Convenience Store Procedures" chapter.

2.   Sending Transactions

Please send to the following URL using HTTP POST (transactions of all payment services covered in this technical document shall be sent to the same URL but with different parameters; use the convenience store payment (payment code) program "paycode/send" as an example):

Production environment	https://www.esafe.com.tw/Service/Etopm.aspx
Test environment	https://test.esafe.com.tw/Service/Etopm.aspx

Caution
(a)   The correct data format should be HTTP FORM POST key-value (non-JSON)
(b)   Parameters marked with * are mandatory
(c)   To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, please perform URL Encode before sending. Use UTF-8 for character encoding

(d) Empty string refers to a string that has a length of zero, which is different from null and space (ASCII code: 32)

Description of parameters:

Serial No.	Parameter	Parameter name	Length restriction	Description
1	web	*Merchant ID		Please use "PayCode" merchant ID, which is included in the notification letter sent after a successful application. You may also log in to Merchant and inquire under "Service Settings"
2	MN	*Transaction amount	8	Must be an integer and contain no decimal point or thousands separators. Currency of denomination: TWD (NTD). (This parameter accepts numbers only)
3	OrderInfo	Transaction detail	400	Describes the goods purchased in the current transaction. Must not contain special characters such as: *'<>[]"
4	Td	Merchant order number	20	Please avoid duplicating order numbers. SunTech's system does not check for duplication of order number across all transactions; its duplication check works only for blocking uncompleted transactions of the same merchant order number sent from the same browser. (This parameter accepts alphanumeric characters only)
5	sna	*Consumer's name	30	Accepts Chinese and English names, but no special characters such as: *'<>[]". This information is mandatory if pickup at convenience store is to be specified (the store assistant will ask for member's name and mobile number during pick-up).
6	sdt	*Consumer's TEL	20	Please input mobile number (accepts foreign mobile numbers) without symbols such as #( )-. If pickup at convenience store is to be specified, the system will send an SMS message to inform consumer of the arrival of the goods. (The parameter shall consist entirely of numbers)
7	email	Consumer's Email	100	Required if applicable; must conform to proper Email format. If pickup at convenience store is to be specified, it is recommended to send the consumer's Email as well, in order to avoid a situation where the consumer cannot be informed of the arrival of the goods via SMS (e.g. foreign mobile numbers might not be able to receive SMS).

8	note1	Remark # 1	400	To be used at the merchant's discretion. Once the transaction is completed, these two fields will be sent back to the merchant without alteration. Must not contain special characters such as: *'<>[]"
9	note2	Remark # 2	400	
10	DueDate	*Payment due date	8	The merchant must specify a payment due date, which can be any time from 1~180 days. To encourage early payment, it is advisable not to set the payment due date too late. The acceptable date format is: YYYYMMDD; example: 20170824
11	UserNo	User number	15	This field can be used at the merchant's discretion, for things such as membership number. Do not use special characters such as: *'<>[]"
12	BillDate	Billing date	8	The billing date defined by merchant. Acceptable date format: YYYYMMDD; example: 20170824
13	CargoFlag	Store pickup		This option is for consumers who choose to pick up their goods at convenience stores. Please refer to the "Pickup at Convenience Store Procedures" chapter for more details. Acceptable parameters: Empty string or 0: No store pickup required 1: Store pickup (consumers pick up goods at convenience store)
14	StoreID	Pickup store ID	6	Please include a convenience store selection function in your checkout procedures (refer to the "Pickup at Convenience Store Procedures" chapter for more detailed description). If the merchant specifies 1 - Store pickup in the CargoFlag above but sends an empty string for this field, SunTech will include a process for the consumer to select convenience store as part of the payment procedure.
15	StoreName	Pickup store name	10	
16	BuyerCid	Buyer's Tax/VAT number		This option is for consumers who need a receipt with their company Tax/VAT number. Note: 1. It's required to apply "E-Invoice" service to enable this function. Please Refer to "E-Invoice" chapter for details. 2. Buyer's Tax/VAT number and Donation Code are not accepted at the

				same time.
17	DonationCode	Donation Code		This option is for consumers who want to donate e-invoice to certain organizations. Note: 1. It's required to apply "E-Invoice" service to enable this function. Please Refer to "E-Invoice" chapter for details. 2. Buyer's Tax/VAT number and Donation Code are not accepted at the same time.
18	ChkValue	*Transaction verification value		Please generate the transaction verification value (ChkValue) using SHA1 (the generated SHA1 value must be converted entirely into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + transaction amount (MN) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example: Merchant ID: S1103020010 Transaction Password: abcd5888 Transaction amount: 1688 The combined string will be: S1103020010abcd58881688 The SHA1 value generated using the combined string becomes: CEFB535782B005BA34B67AEC5A167368FD9B9741

3. Receiving Transaction Result

Once a transaction is established, the system will send the payment barcode along with transaction details to the designated URL (payment has yet to be made at this stage). Please log in to Merchants -> Service Settings to configure your "(2)Successful Transaction Result URL" showed as below figure (use the "paycode/receive" program as an example). If you do not configure this URL (i.e. leaving the field empty), transaction details will be displayed on the SunTech website instead.

繳款成功接收網址 **(1)** https://www.mywebsite.com.tw/payment/paid_data.php
交易完成接收網址 **(2)** https://www.mywebsite.com.tw/payment/receive_data.php
交易回傳確認網址 **(3)** https://www.mywebsite.com.tw/payment/paid_data.php

Caution
(a) The correct data format should be HTTP FORM POST key-value (non-JSON)
(b) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, all information must be transmitted using URL Encode and decoded using URL Decode before proceeding further. Use UTF-8 for character encoding
(c) If TCP/UDP port number included in the transaction result URLs (e.g. https://www.mywebsite.com.tw:8080/xxx.php), only the following ports are allowed for security reason: 80, 443, 8080~8085.

Description of parameters:

Serial No.	Parameter	Parameter name	Description
1	buysafeno	SunTech transaction number	Serial number of the transaction (use alphanumeric characters only)
2	web	Merchant ID	The "PayCode" merchant ID, which is provided at the time of account application
3	Td	Merchant order number	(This parameter accepts alphanumeric characters only)
4	MN	Transaction amount	(This parameter accepts numbers only)
5	Name	Consumer's name	To ensure compliance with the Personal Information Protection Act and avoid leakage of personal information during transmission, some characters will be masked during the process. Example: W○○○○○○○g
6	note1	Remark # 1	Additional details that are sent along with the transaction, which will be returned back to the merchant without alteration
7	note2	Remark # 2	
8	SendType	Transmission method	Parameter description: 1: Background transmission 2: Webpage transmission Note: Once a transaction has been completed, results will be sent back to the merchant using foreground (webpage) as well as background transmission. Therefore, the merchant's website should be designed to receive 1~2 returning transmissions (this is not a duplicate transaction).
9	UserNo	User number	This field can be defined at the merchant's discretion, for things such as membership number
10	paycode	Payment code	This code is used exclusively for the particular transaction, and cannot be used for

			other transactions.
11	PayType	Available convenience stores	Parameter description: 4: FamilyMart 5: 7-11 6: OK mart 7: Hi-Life Separate the values with commas; for example: 4,6,7 indicates that payment cannot be made at 7-11
12	ChkValue	Transaction verification value	The transaction verification value (ChkValue) shall be generated using SHA1. The merchant is advised to generate combined strings and the transaction verification value (ChkValue) using the methods described below, and to compare them with values sent by the SunTech system (the generated SHA1 value shall be entirely converted into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + SunTech transaction number (buysafeno) + transaction amount (MN) + payment code (paycode) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example: Merchant ID: S1103020010 Transaction Password: abcd5888 SunTech transaction number: 2400009912300000019 Transaction amount: 1688 Payment code: LAC90824000098 The combined string shall be: S1103020010abcd588824000099123000000191688LAC90824000098 The SHA1 value generated using the combined string becomes: B95C7F18E05917679A117402C0B4E614350DD0BB

4. Receiving Payment Results

Once the consumer has completed payment and SunTech receives notification of a successful payment, the result will be sent to the designated website. Please log in to Merchants -> Service Settings to configure your "(1)Payment Result Receiving URL" showed as below figure (use the "paycode/paid" program as an example).

繳款成功接收網址 **(1)**https://www.mywebsite.com.tw/payment/paid_data.php

交易完成接收網址 **(2)**https://www.mywebsite.com.tw/payment/receive_data.php

交易回傳確認網址 **(3)**https://www.mywebsite.com.tw/payment/paid_data.php

Furthermore, to prevent unexpected occurrences that result in the failed transmission of payment results (such as network disruption, the merchant's website being repaired, etc.), SunTech has provided a payment result resending service (number "3" field in the above figure). Please refer to the "Transaction Confirmation Notification" chapter for more details.

Caution

(a) The correct data format should be HTTP FORM POST key-value (non-JSON)

(b) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, all information must be transmitted using URL Encode and decoded using URL Decode before proceeding further. Use UTF-8 for character encoding

(c) If TCP/UDP port number included in the transaction result URLs (e.g. https://www.mywebsite.com.tw:8080/xxx.php), only the following ports are allowed for security reason: 80, 443, 8080~8085.

Description of parameters:

Serial No.	Parameter	Parameter name	Description
1	buysafeno	SunTech transaction number	Serial number of the transaction (use alphanumeric characters only)
2	web	Merchant ID	The "PayCode" merchant ID, which is provided at the time of account application
3	Td	Merchant order number	(This parameter accepts alphanumeric characters only)
4	MN	Transaction amount	(This parameter accepts numbers only)
5	Name	Consumer's name	To ensure compliance with the Personal Information Protection Act and avoid leakage of personal information during transmission, some characters will be masked during the process. Example: W○○○○○○○g
6	note1	Remark # 1	Additional details that are sent along with the transaction, which will be returned back to the merchant without alteration
7	note2	Remark # 2	
8	UserNo	User number	This field can be defined at the merchant's discretion, for things such as membership number
9	PayDate	Payment date	The day the consumer makes payment at convenience store. Acceptable date format: YYYYMMDD; example: 20170824
10	PayType	Payment method	Parameter description: 4: Payment at FamilyMart

			5: Payment at 7-11 6: Payment at OK mart 7: Payment at Hi-Life
11	PayAgency	Convenience store ID	ID of the convenience store where the consumer makes payment
12	PayAgencyName	Name of Convenience store	The branch name of the convenience store where the consumer makes payment
13	PayAgencyTel	Telephone No. of Convenience store	The telephone number of the convenience store where the consumer makes payment
14	PayAgencyAddress	Address of Convenience store	The address of the convenience store where the consumer makes payment
15	errcode	Response code	00 (numeric characters) represents a successful transaction Please verify transactions against the ChkValue. (The parameter shall consist entirely of alphanumeric characters)
16	CargoNo	Convenience store delivery ID	When the consumer chooses to pick up goods at a convenience store, the system will generate a delivery ID that the merchant may use to send goods to the convenience store (please refer to the "Pickup at Convenience Store Procedures" chapter for more details). This parameter will have an empty string if the consumer does not require pick-up at convenience store, or if the transaction fails, or if the system fails to retrieve the delivery ID.
17	StoreID	Pickup store ID	Information about the convenience store that consumer has chosen. This parameter will have an empty string if the transaction fails or if the system fails to retrieve the delivery ID.
18	StoreName	Pickup store name	
19	InvoiceNo	Invoice number	Please refer to descriptions on "E-Invoice"
20	ChkValue	Transaction verification value	The transaction verification value (ChkValue) shall be generated using SHA1. The merchant is advised to generate combined strings and the transaction verification value (ChkValue) using the methods described below, and to compare them with values sent by the SunTech system (the generated SHA1 value shall be entirely converted into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + SunTech transaction number (buysafeno) + transaction amount (MN) + response code (errcode) + convenience store delivery ID (CargoNo) Important: Please refer to "Preparation and

<table>
<tr><td></td><td></td><td></td><td>

Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password

Example:
Merchant ID: S1103020010
Transaction Password: abcd5888
SunTech transaction number:
2400009912300000019
Transaction amount: 1688
Response code: 00
Convenience store delivery ID: empty string

The combined string shall be:
S1103020010abcd58882400009912300000019 168800

SHA1 value generated using the combined string becomes:
2309D96F77C83B4E777793FB95D0ED60C3F FC4E9
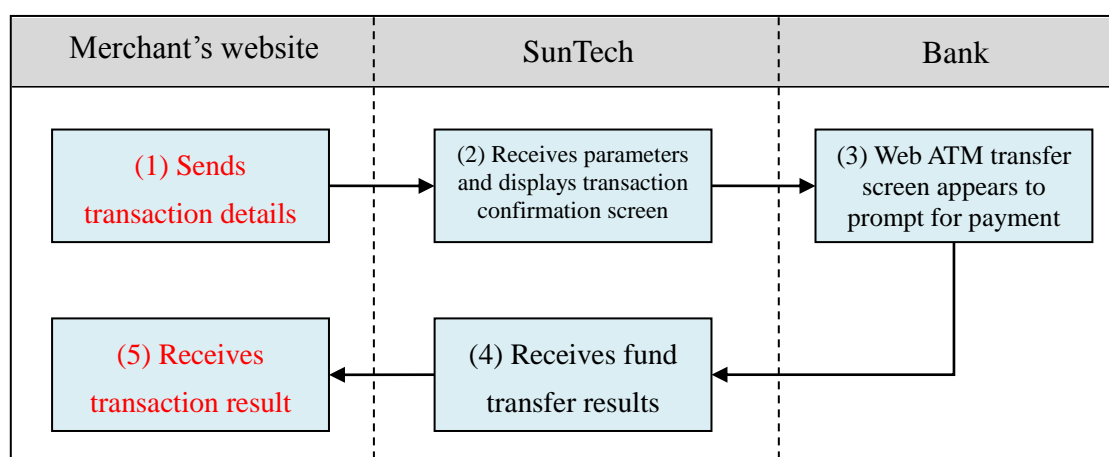</td></tr>
</table>

VI. Integrating Web ATM Transfer

To make an Web ATM transfer online, the consumer is required to connect an ATM card and a card reader to a computer, and install the required Web ATM components during first-time setup (please visit E.Sun Bank website at https://netbank.esunbank.com.tw/webatm/Q&A_012.htm for a list of supported browsers and versions). During the payment step, the consumer will be prompted to insert the ATM card to begin the transfer.

Caution: The transfer does not pay directly into the merchant's bank account; instead, it transfers money into SunTech's special account first before forwarding to the merchant.

1. Transaction Flow and Examples

(a) Payment flow is depicted in the following figure (the numbers indicate the sequence of process flow, while the red text indicates elements that need to be designed for your website):

Merchant's website	SunTech	Bank
(1) Sends transaction details	(2) Receives parameters and displays transaction confirmation screen	(3) Web ATM transfer screen appears to prompt for payment
(5) Receives transaction result	(4) Receives fund transfer results	

Explanation of the above figure:

(1) Consumer checks out at the merchant's website and sends transaction details (the merchant is required to develop a program for sending transaction information to SunTech; refer to the "Sending Transactions" section for relevant parameters, and use the "webatm/send" program as an example).

(2) Once SunTech receives the parameters, the consumer's browser will be directed to SunTech's transaction confirmation screen, where it waits for the consumer to confirm and send the relevant details.

(3) The bank will display the Web ATM transfer screen; the consumer then installs the ATM card reader, inserts an ATM card and performs the fund transfer.

(4) SunTech receives the fund transfer results and forwards them to the merchant.

(5) The merchant receives results of the Web ATM transfer, and the consumer's browser redirects the consumer back to the merchant's website. At this point, the merchant's website should display the

outcome of payment for the consumer (the merchant needs to write a program for receiving the authorization result; refer to the "Receiving Transaction Result" section for relevant parameters, and use the "webatm/receive" program as an example).

(b) Delivery workflow and transmission of delivery status: Please refer to the "Pickup at Convenience Store Procedures" chapter.

2. Sending Transactions

Please send to the following URL using HTTP POST (transactions of all payment services covered in this technical document shall be sent to the same URL but with different parameters; use Web ATM transfer program "webatm/send" as an example):

Production environment	https://www.esafe.com.tw/Service/Etopm.aspx
Test environment	https://test.esafe.com.tw/Service/Etopm.aspx

Caution
(a) The correct data format should be HTTP FORM POST key-value (non-JSON)
(b) Parameters marked with * are mandatory
(c) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, please perform URL Encode before sending. Use UTF-8 for character encoding
(d) Empty string refers to a string that has a length of zero, which is different from null and space (ASCII code: 32)

Description of parameters:

Serial No.	Parameter	Parameter name	Length restriction	Description
1	web	*Merchant ID		Please use "WebATM" merchant ID, which is included in the notification letter sent after a successful application. You may also log in to Merchant and inquire under "Service Settings"
2	MN	*Transaction amount	8	Must be an integer and contain no decimal point or thousands separators. Currency of denomination: TWD (NTD). (This parameter accepts numbers only)
3	OrderInfo	Transaction detail	400	Describes the goods purchased in the current transaction. Must not contain special characters such as: *'<>[]"
4	Td	Merchant order number	20	Please avoid duplicating order numbers. SunTech's system does not check for duplication of order number across all transactions; its duplication check works only for blocking uncompleted transactions of the same merchant order number sent from the

				same browser. (This parameter accepts alphanumeric characters only)
5	sna	*Consumer's name	30	Accepts Chinese and English names, but no special characters such as: *'<>[]". This information is mandatory if pickup at convenience store is to be specified (the store assistant will ask for member's name and mobile number during pick-up).
6	sdt	*Consumer's TEL	20	Please input mobile number (accepts foreign mobile numbers) without symbols such as #( )-. If pickup at convenience store is to be specified, the system will send an SMS message to inform consumer of the arrival of the goods. (The parameter shall consist entirely of numbers)
7	email	Consumer's Email	100	Required if applicable; must conform to proper Email format. If pickup at convenience store is to be specified, it is recommended to send the consumer's Email as well, in order to avoid a situation where the consumer cannot be informed of the arrival of the goods via SMS (e.g. foreign mobile numbers might not be able to receive SMS).
8	note1	Remark # 1	400	To be used at the merchant's discretion. Once the transaction is completed, these two fields will be sent back to the merchant without alteration. Must not contain special characters such as: *'<>[]"
9	note2	Remark # 2	400	
10	CargoFlag	Store pickup		This option is for consumers who choose to pick up their goods at convenience stores. Please refer to the "Pickup at Convenience Store Procedures" chapter for more details. Acceptable parameters: Empty string or 0: No store pickup required 1: Store pickup (consumers pick up goods at convenience store)
11	StoreID	Pickup store ID	6	Please include a convenience store selection function in your checkout procedures (refer to the "Pickup at Convenience Store Procedures" chapter for more detailed description). If the merchant specifies 1 - Store pickup in the CargoFlag above but sends an empty string for this field, SunTech will include a process for the
12	StoreName	Pickup store name	10	

				consumer to select convenience store as part of the payment procedure.
13	BuyerCid	Buyer's Tax/VAT number		This option is for consumers who need a receipt with their company Tax/VAT number. Note: 1. It's required to apply "E-Invoice" service to enable this function. Please Refer to "E-Invoice" chapter for details. 2. Buyer's Tax/VAT number and Donation Code are not accepted at the same time.
14	DonationCode	Donation Code		This option is for consumers who want to donate e-invoice to certain organizations. Note: 1. It's required to apply "E-Invoice" service to enable this function. Please Refer to "E-Invoice" chapter for details. 2. Buyer's Tax/VAT number and Donation Code are not accepted at the same time.
15	ChkValue	*Transaction verification value		Please generate the transaction verification value (ChkValue) using SHA1 (the generated SHA1 value must be converted entirely into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + transaction amount (MN) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example: Merchant ID: S1103020010 Transaction Password: abcd5888 Transaction amount: 1688 The combined string will be: S1103020010abcd58881688 The SHA1 value generated using the combined string becomes: CEFB535782B005BA34B67AEC5A167368FD9B9741

3. Receiving Transaction Result

All completed transactions (whether payment is successful or unsuccessful) will have results sent to the designated URL. Please log in to Merchants -> Service Settings to configure your "(1)Successful Transaction Result URL" and "(2)Failed Transaction Result URL" showed as below figure (use the "webatm/receive" program as an example).

Furthermore, to prevent unexpected occurrences that result in the failed transmission of transaction results (such as network disruption, consumer's input error, browsers being closed, etc.), SunTech has provided a transaction result resending service (number "3" field in the above figure). Please refer to the "Transaction Confirmation Notification" chapter for more details.

Caution

(a) The correct data format should be HTTP FORM POST key-value (non-JSON)

(b) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, all information must be transmitted using URL Encode and decoded using URL Decode before proceeding further. Use UTF-8 for character encoding

(c) If TCP/UDP port number included in the transaction result URLs (e.g. https://www.mywebsite.com.tw:8080/xxx.php), only the following ports are allowed for security reason: 80, 443, 8080~8085.

Description of parameters:

Serial No.	Parameter	Parameter name	Description
1	buysafeno	SunTech transaction number	Serial number of the transaction (use alphanumeric characters only)
2	web	Merchant ID	The "WebATM" merchant ID, which is provided at the time of account application
3	Td	Merchant order number	(This parameter accepts alphanumeric characters only)
4	MN	Transaction amount	(This parameter accepts numbers only)
5	webname	Merchant website name	This is the name of the merchant's website registered on the SunTech system
6	Name	Consumer's name	To ensure compliance with the Personal Information Protection Act and avoid leakage of personal information during transmission, some characters will be masked during the process. Example: W○○○○○○○g
7	note1	Remark # 1	Additional details that are sent along with the

8	note2	Remark # 2	transaction, which will be returned back to the merchant without alteration
9	SendType	Transmission method	Parameter description: 1: Background transmission 2: Webpage transmission Note: Once a transaction has been completed, results will be sent back to the merchant using foreground (webpage) as well as background transmission. Therefore, the merchant's website should be designed to receive 1~2 returning transmissions (this is not a duplicate transaction).
10	errcode	Response code	00 (numeric characters) represents a successful transaction; all other codes indicate transaction failure Please verify transactions against the ChkValue. (The parameter shall consist entirely of alphanumeric characters)
11	errmsg	Interpretation of response code	A text description on the cause of error. Please use the errcode field above to determine whether a transaction is successful; do not use text descriptions here for a system decision.
12	CargoNo	Convenience store delivery ID	When the consumer chooses to pick up goods at a convenience store, the system will generate a delivery ID that the merchant may use to send goods to the convenience store (please refer to the "Pickup at Convenience Store Procedures" chapter for more details). This parameter will have an empty string if the consumer does not require pick-up at convenience store, or if the transaction fails, or if the system fails to retrieve the delivery ID.
13	StoreID	Pickup store ID	Information about the convenience store that consumer has chosen. This parameter will have an empty string if the transaction fails or if the system fails to retrieve the delivery ID.
14	StoreName	Pickup store name	
15	InvoiceNo	Invoice number	Please refer to descriptions on "E-Invoice"
16	ChkValue	Transaction verification value	The transaction verification value (ChkValue) shall be generated using SHA1. The merchant is advised to generate combined strings and the transaction verification value (ChkValue) using the methods described below, and to compare them with values sent by the SunTech system (the generated SHA1 value shall be entirely converted into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + SunTech transaction number (buysafeno) + transaction amount (MN) + response code (errcode) + convenience store delivery ID (CargoNo)

			Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password
			Example: Merchant ID: S1103020010 Transaction Password: abcd5888 SunTech transaction number: 2400009912300000019 Transaction amount: 1688 Response code: 00 Convenience store delivery ID: empty string
			The combined string shall be: S1103020010abcd58882400009912300000019 168800
			SHA1 value generated using the combined string becomes: 2309D96F77C83B4E777793FB95D0ED60C3F FC4E9

# VII. Integrating ATM Transfer (virtual account)

The difference between this payment method and "Web ATM" described in the previous chapter is that the consumer needs not prepare an ATM card reader here. In this payment method, the system will generate a ATM transfer account number exclusively for this particular order. The consumer can then make a fund transfer into this account via ATM, bank counter, or online banking to complete the payment. According to local anti-fraud policies, fund transfers using ATMs or online banking are capped at NT$30,000 per transaction, therefore transfers that amount to more than NT$30,000 need to be completed at a bank counter.

ATM Transfer (virtual account) shares the same merchant ID, transaction parameters and transaction URL as convenience store payment (barcoded payment slip), therefore the URL designated for receiving convenience store payment (barcoded payment slip) transactions must also be capable of receiving ATM transfer transactions. Please refer to the "Integrating Convenience Store Payment (barcoded payment slip)" chapter for parameters used in the transmission of transactions. The following context outlines the differences, which system developers should pay attention to.

Caution: Do not make ATM transfer into any account number generated from the test environment. Since there is no corresponding transaction, the payment can neither be credited nor refunded.

1. Transaction Flow and Examples

   (a) **Transaction and payment flow** is depicted in the following figure (the numbers indicate the sequence of process flow, while the red text indicate elements that need to be designed for your website):
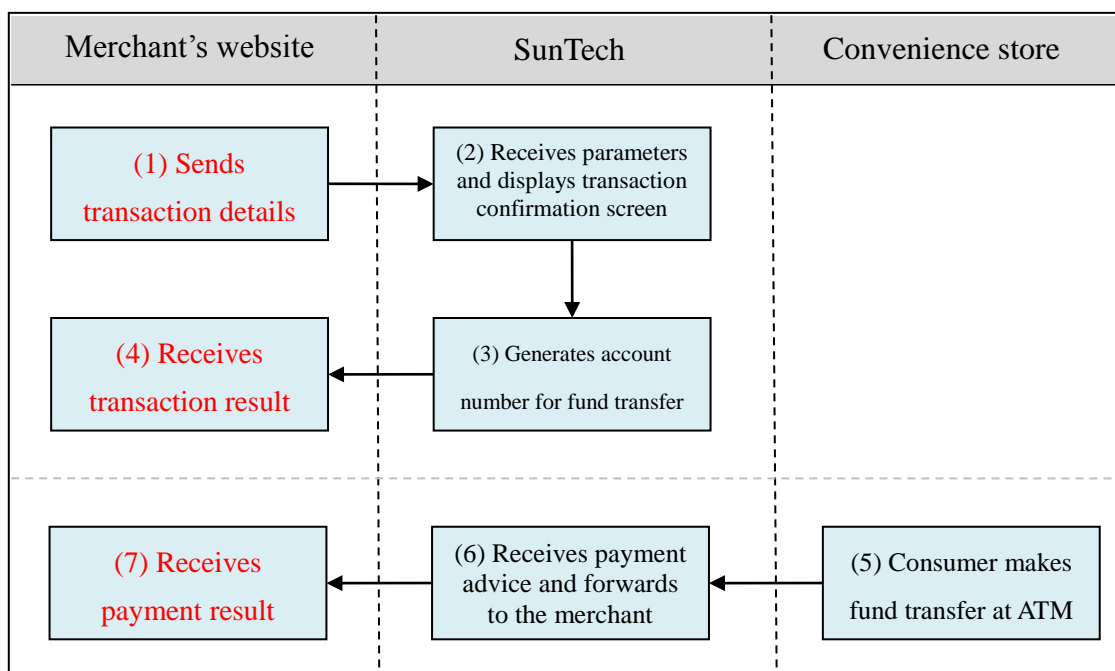
Explanation (no further description is provided for steps that are identical to convenience store payment):

(1) Consumer checks out at the merchant's website and sends transaction details (the merchant is required to develop a program for sending transaction information to SunTech; refer to the "Sending Transactions" section for relevant parameters, and use the "atm/send" program as an example).

(3) Once the consumer presses Submit, a bank account will be generated exclusively for the transaction.

(4) The merchant receives transaction details, and the browser redirects the consumer back to the merchant's website (the merchant is required to write a program for receiving transaction results; refer to the "Receiving Transaction Result" section for relevant parameters, and use the "24payment/receive" program as an example). It is advisable for the merchant to display a notice that reminds the consumer to make payment via ATM, bank counter or online banking before the due date.

(5) Consumer completes payment by making fund transfer at ATM (or at a bank counter or via online banking). The bank sends a payment notification to SunTech (this notification is not sent immediately after consumer's payment; please refer to "Preparation and Important Notes" chapter for more details on the timing of notifications).

(b) Delivery workflow and transmission of delivery status: Please refer to the "Pickup at Convenience Store Procedures" chapter.

2. Sending Transactions

Description of parameters (no further explanation is provided for parameters that are identical to convenience store payments):

Serial No.	Parameter	Parameter name	Length restriction	Description
1	web	*Merchant ID		Same as Convenience Store Payment (barcoded payment slip); use "24Payment" merchant ID
2	MN	*Transaction amount	8	Must be an integer and contain no decimal point or thousands separators. Currency of denomination: TWD (NTD). (This parameter accepts numbers only) Caution: Transactions that amount to more than NT$30,000 need to be transferred at a branch counter.
16	AgencyType	Payment method		Acceptable parameters: 2: Generates ATM transfer account number (virtual account) only. The payment slip Emailed to consumer will only show ATM transfer account number (virtual account), and does not allow payment using barcode For other parameters, please refer to

Serial No.	Parameter	Parameter name	Description
17	AgencyBank	ATM transfer bank type	the "Integrating Convenience Store Payment (barcoded payment slip)" chapter
17	AgencyBank	ATM transfer bank type	You can designate or provide an option on your website to let customers choose which bank account for transfer to. Acceptable parameters: ~~Empty string or 0: Taishin International Bank~~ 1: CTBC Bank (Chinatrust Commercial Bank)

3. Receiving Transaction Result

Description of parameters (no further explanation is provided for parameters that are identical to convenience store payments):

Serial No.	Parameter	Parameter name	Description
13	EntityATM	ATM transfer account number	Represents the ATM transfer account number, bank code (includes branch code if required), and bank branch name generated exclusively for the transaction. Please refer to the return values.
13	BankCode	ATM transfer bank code	It is recommended that you display the following information when consumers are redirected back to your website, so that they are aware of how to make payment:
13	BankName	ATM transfer bank branch name	Please transfer funds via ATM or at a branch counter into the following account: Bank name: XXXXXXXX (should be the value of BankName) Bank code: XXXXXXXX (should be the value of BankCode) Account name: 紅陽科技股份有限公司 (required if transfer funds at a branch counter) Account number: XXXXXXXXXXXXXXX (should be the value of EntityATM) Payment due date: 20XX/XX/XX

4. Receiving Payment Results

All other parameters are the same as those used in convenience store payment (barcoded payment slip).
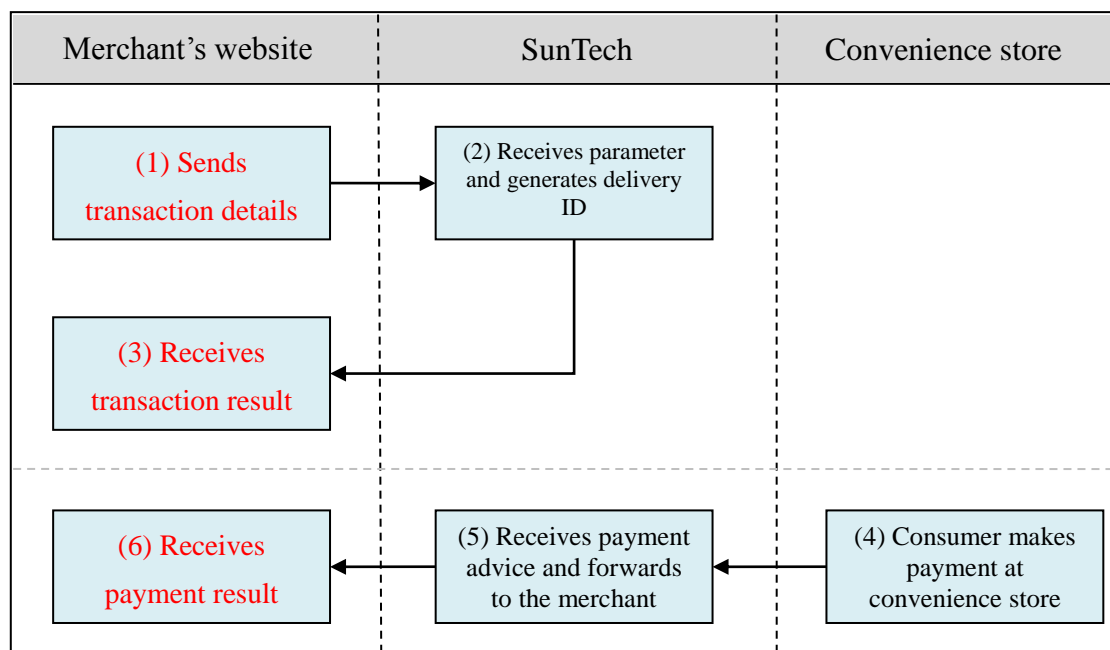
VIII. Integrating Payment & Pickup at Convenience Store

This service allows goods to be delivered to convenience stores first before the consumer makes payment. In doing so, the consumer has the assurance of delivery and the convenience of making payment and collecting items at the convenience store at any time.

Caution: For convenience store payment, the transaction amount must not exceed NT$20,000.

1. Transaction Flow and Examples

(a) Transaction and payment flow is depicted in the following figure (the numbers indicate the sequence of process flow, while the red text indicate elements that need to be designed for your website):

Merchant's website	SunTech	Convenience store
(1) Sends transaction details	(2) Receives parameter and generates delivery ID	
(3) Receives transaction result		
(6) Receives payment result	(5) Receives payment advice and forwards to the merchant	(4) Consumer makes payment at convenience store

Explanation of the above figure:

(1) Consumer checks out at the merchant's website and sends transaction details (the merchant is required to develop a program for sending transaction information to SunTech; refer to the "Sending Transactions" section for relevant parameters, and use the "sunship/send" program as an example).

(2) Once SunTech receives the parameters, the consumer's browser will be directed to SunTech's transaction confirmation screen, where it waits for the consumer to confirm and send the relevant details. Once the order is submitted, SunTech will generate convenience store delivery ID for shipment.

(3) The merchant receives the convenience store delivery ID, and the

52

consumer's browser redirects the consumer back to the merchant's website (the merchant needs to write a program for receiving the transaction result; refer to the "Receiving Transaction Result" section for relevant parameters, and use the "sunship/receive" program as an example). Merchant may prepare shipment once it receives the convenience store delivery ID.

(4) The consumer approaches a convenience store to print out a payment slip by inputting the payment code into the kiosk machine, and then presents the payment slip and pays at convenience store counter. The convenience store sends a payment notification to SunTech (this notification is not sent immediately after consumer's payment; please refer to the "Preparation and Important Notes" chapter for more details on the timing of notifications).

(5) SunTech receives the payment notification and forwards it to the merchant.

(6) Merchant receives the payment notification and updates the order status on its website (the merchant needs to write a program for receiving payment notification; please refer to the "Receiving Payment Results" chapter for relevant parameters, and use the "sunship/paid" program as an example).

(b) Delivery workflow and transmission of delivery status: Please refer to the "Pickup at Convenience Store Procedures" chapter.

2. Sending Transactions

Please send to the following URL using HTTP POST (transactions of all payment services covered in this technical document shall be sent to the same URL but with different parameters; use payment & pickup at convenience store "sunship/send" program as an example):

Production environment	https://www.esafe.com.tw/Service/Etopm.aspx
Test environment	https://test.esafe.com.tw/Service/Etopm.aspx

Caution
(a) The correct data format should be HTTP FORM POST key-value (non-JSON)
(b) Parameters marked with * are mandatory
(c) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, please perform URL Encode before sending. Use UTF-8 for character encoding
(d) Empty string refers to a string that has a length of zero, which is different from null and space (ASCII code: 32)

Description of parameters:

Serial No.	Parameter	Parameter name	Length restriction	Description
1	web	*Merchant ID		Please use "SunShip" merchant ID, which is included in the notification letter sent after a successful application.

				You may also log in to Merchant and inquire under "Service Settings"
2	MN	*Transaction amount	8	Must be an integer and contain no decimal point or thousands separators. Currency of denomination: TWD (NTD). (This parameter accepts numbers only) Caution (1) This amount must equal the product unit price multiplied by product quantity. The transaction may not proceed unless the two figures match. (2) The amount of payment is capped at NT$20,000.
3	OrderInfo	Transaction detail	400	Describes the goods purchased in the current transaction. Must not contain special characters such as: *'<>[]"
4	Td	Merchant order number	20	Please avoid duplicating order numbers. SunTech's system does not check for duplication of order number across all transactions; its duplication check works only for blocking uncompleted transactions of the same merchant order number sent from the same browser. (This parameter accepts alphanumeric characters only)
5	sna	*Consumer's name	30	Accepts Chinese and English names, but no special characters such as: *'<>[]". During pickup, the convenience store assistant will ask for the receiver's name and mobile number.
6	sdt	*Consumer's TEL	20	Please input mobile number (accepts foreign mobile numbers) without symbols such as #( )-. Consumer will be notified by SMS when goods arrive at the convenience store. (The parameter shall consist entirely of numbers)
7	email	Consumer's Email	100	Required if applicable; must conform to proper Email format. It is recommended to send the consumer's Email as well, in order to avoid a situation where the consumer cannot be informed of the arrival of the goods via SMS (e.g. foreign mobile numbers might not be able to receive SMS).
8	note1	Remark # 1	400	To be used at the merchant's discretion. Once the transaction is completed, these two fields will be sent back to the merchant without alteration. Must not contain special characters such as: *'<>[]"
9	note2	Remark # 2	400	
10	StoreID	Pickup store ID	6	Please include a convenience store selection function in your checkout

11	StoreName	Pickup store name	10	procedures (refer to the "Pickup at Convenience Store Procedures" chapter for more detailed description). If this field contains an empty string, SunTech will include a process for the consumer to select convenience store as part of the payment procedure.
12	BuyerCid	Buyer's Tax/VAT number		This option is for consumers who need a receipt with their company Tax/VAT number. Note: 1. It's required to apply "E-Invoice" service to enable this function. Please Refer to "E-Invoice" chapter for details. 2. Buyer's Tax/VAT number and Donation Code are not accepted at the same time.
13	DonationCode	Donation Code		This option is for consumers who want to donate e-invoice to certain organizations. Note: 1. It's required to apply "E-Invoice" service to enable this function. Please Refer to "E-Invoice" chapter for details. 2. Buyer's Tax/VAT number and Donation Code are not accepted at the same time.
14	ChkValue	*Transaction verification value		Please generate the transaction verification value (ChkValue) using SHA1 (the generated SHA1 value must be converted entirely into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + transaction amount (MN) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example: Merchant ID: S1103020010 Transaction Password: abcd5888 Transaction amount: 1688 The combined string will be: S1103020010abcd58881688

				The SHA1 value generated using the combined string becomes: CEFB535782B005BA34B67AEC5A167368FD9B9741

3. Receiving Transaction Result

Once a transaction is established, the system will send the convenience store delivery ID along with transaction details to the designated URL (payment has yet to be made at this stage). Please log in to Merchants -> Service Settings to configure your "(2)Delivery Status URL" showed as below figure (use the "sunship/receive" program as an example).

收款成功接收網址 **(1)** https://www.mywebsite.com.tw/payment/paid_data.php
物流狀態接收網址 **(2)** https://www.mywebsite.com.tw/payment/receive_data.php
交易回傳確認網址 **(3)** https://www.mywebsite.com.tw/payment/paid_data.php

Caution
(a) The correct data format should be HTTP FORM POST key-value (non-JSON)
(b) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, all information must be transmitted using URL Encode and decoded using URL Decode before proceeding further. Use UTF-8 for character encoding
(c) If TCP/UDP port number included in the transaction result URLs (e.g. https://www.mywebsite.com.tw:8080/xxx.php), only the following ports are allowed for security reason: 80, 443, 8080~8085.

Description of parameters:

Serial No.	Parameter	Parameter name	Description
1	buysafeno	SunTech transaction number	Serial number of the transaction (use alphanumeric characters only)
2	web	Merchant ID	The "SunShip" merchant ID, which is provided at the time of account application
3	Td	Merchant order number	(This parameter accepts alphanumeric characters only)
4	MN	Transaction amount	(This parameter accepts numbers only)
5	Name	Consumer's name	To ensure compliance with the Personal Information Protection Act and avoid leakage of personal information during transmission, some characters will be masked during the process. Example: W○○○○○○○g
6	note1	Remark # 1	Additional details that are sent along with the transaction, which will be returned back to the merchant without alteration
7	note2	Remark # 2	
8	SendType	Transmission method	Parameter description: 1: Background transmission 2: Webpage transmission

			Note: Once a transaction has been completed, results will be sent back to the merchant using foreground (webpage) as well as background transmission. Therefore, the merchant's website should be designed to receive 1~2 returning transmissions (this is not a duplicate transaction).
9	CargoNo	Convenience store delivery ID	This service will generate convenience store delivery ID that the merchant may use to send goods to the convenience store (please refer to the "Pickup at Convenience Store Procedures" chapter for more details). This parameter will have an empty string if the system fails to retrieve the delivery ID.
10	StoreID	Pickup store ID	Information about the convenience store that consumer has chosen. This parameter will have an empty string if the transaction fails or if the system fails to retrieve the delivery ID.
11	StoreName	Pickup store name	
12	ChkValue	Transaction verification value	The transaction verification value (ChkValue) shall be generated using SHA1. The merchant is advised to generate combined strings and the transaction verification value (ChkValue) using the methods described below, and to compare them with values sent by the SunTech system (the generated SHA1 value shall be entirely converted into capital letters).

The value shall consist of the following (excluding the + sign):
Merchant ID (web) + Transaction Password + SunTech transaction number (buysafeno) + transaction amount (MN) + convenience store delivery ID (CargoNo)

Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password

Example:
Merchant ID: S1103020010
Transaction Password: abcd5888
SunTech transaction number: 2400009912300000019
Transaction amount: 1688
Convenience store delivery ID: F23501480823

The combined string shall be:
S1103020010abcd58882400009912300000019
1688F23501480823

SHA1 value generated using the combined

			string becomes: 43DB203FE311A7C815982323EEF8D90437681448

4. Receiving Delivery Status

The merchant will be notified of the delivery status when goods are sent to the designated convenience store, or when the consumer chooses to forgo pickup and return the goods. Please refer to the "Pickup at Convenience Store Procedures" chapter for more details.

5. Receiving Payment Results

Once the consumer has completed payment/pickup at a convenience store and SunTech receives notification of successful payment, the result will be sent to the designated website in the background. Please log in to Merchants -> Service Settings to configure your "(1)Payment Result Receiving URL" showed as below figure (use the "sunship/paid" program as an example).

Furthermore, to prevent unexpected occurrences that result in the failed transmission of payment results (such as network disruption, the merchant's website being repaired, etc.), SunTech has provided a payment result resending service (number "3" field in the above figure). Please refer to the "Transaction Confirmation Notification" chapter for more details.

Caution

(a) The correct data format should be HTTP FORM POST key-value (non-JSON)

(b) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, all information must be transmitted using URL Encode and decoded using URL Decode before proceeding further. Use UTF-8 for character encoding

(c) If TCP/UDP port number included in the transaction result URLs (e.g. https://www.mywebsite.com.tw:8080/xxx.php), only the following ports are allowed for security reason: 80, 443, 8080~8085.

Description of parameters:

Serial No.	Parameter	Parameter name	Description
1	buysafeno	SunTech transaction number	Serial number of the transaction (use alphanumeric characters only)
2	web	Merchant ID	The "SunShip" merchant ID, which is provided at the time of account application
3	Td	Merchant order number	(This parameter accepts alphanumeric characters only)
4	MN	Transaction	(This parameter accepts numbers only)

		amount	
5	Name	Consumer's name	To ensure compliance with the Personal Information Protection Act and avoid leakage of personal information during transmission, some characters will be masked during the process. Example: W○○○○○○○g
6	note1	Remark # 1	Additional details that are sent along with the transaction, which will be returned back to the merchant without alteration
7	note2	Remark # 2	
8	SendType	Transmission method	1: Background transmission
9	errcode	Response code	00 (numeric characters) represents successful payment collection. Please verify transactions against the ChkValue. (The parameter shall consist entirely of alphanumeric characters)
10	CargoNo	Convenience store delivery ID	Represents convenience store delivery ID for this particular transaction
11	InvoiceNo	Invoice number	Please refer to descriptions on "E-Invoice"
12	ChkValue	Transaction verification value	The transaction verification value (ChkValue) shall be generated using SHA1. The merchant is advised to generate combined strings and the transaction verification value (ChkValue) using the methods described below, and to compare them with values sent by the SunTech system (the generated SHA1 value shall be entirely converted into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + SunTech transaction number (buysafeno) + transaction amount (MN) + response code (errcode) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example: Merchant ID: S1103020010 Transaction Password: abcd5888 SunTech transaction number: 2400009912300000019 Transaction amount: 1688 Response code: 00 The combined string shall be: S1103020010abcd58882400009912300000019 168800

			SHA1 value generated using the combined string becomes: 2309D96F77C83B4E777793FB95D0ED60C3FFC4E9

IX. Pickup at Convenience Store Procedures

This chapter explains integration with convenience store payment and pickup procedures. You are required to activate "Pickup at Convenience Store" service if you choose to use other payment methods (e.g. credit cards or ATM cards) in conjunction with this service.

Please add a function in your checkout procedure that allows consumers to choose their desired convenience store (for more details, please refer to "Appendix A. Convenience Store Selection Functionality - 7-11). This function shall be able to transmit the name and ID of the convenience store that the consumer has chosen along with integration details to the designated URL. SunTech will then generate convenience store delivery ID for the particular transaction to facilitate shipment. If you don't integrate this procedure into your website, the convenience store selection will be included in the checkout procedure during the payment. Consumer should choose a convenience store for pickup goods before proceeding to next step.

Acquisition and usage of convenience store delivery ID: If the consumer chooses to pick up goods at a convenience store, the merchant will be provided with a convenience store delivery ID (with the exception of "Payment & Pickup at Convenience Store," the convenience store delivery ID is provided only after payment is completed; please refer to the respective service descriptions for more details). The merchant then needs to verify the consumer's payment, print out delivery documents by inputting the delivery ID into a kiosk machine at a nearby convenience store, pay the delivery charges, and hand over the consumer's goods along with the delivery documents to the store assistant for shipment.
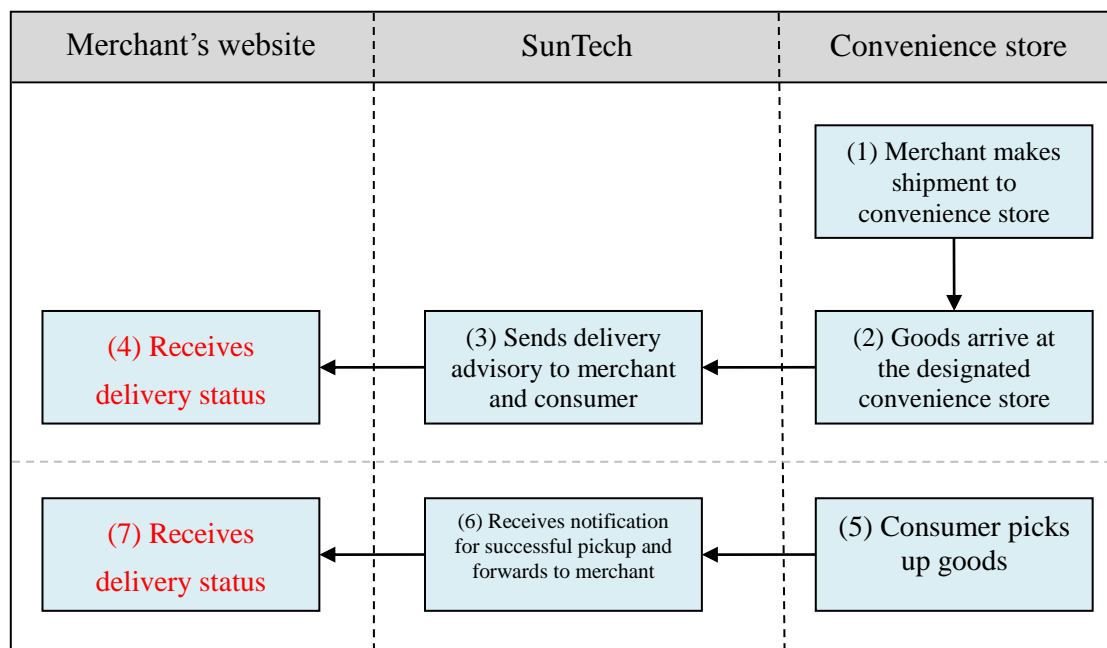
Once the goods are shipped, both the merchant and the consumer may check delivery status by inputting "convenience store delivery ID" at the convenience store's shipment tracking website. It is recommended that you design your system in a way that provides consumers with convenience store delivery ID and an URL for tracking delivery, so that they can track shipment on their own. Below are the URLs for tracking delivery (the URLs may be subject to change; no further notification is provided in the event of change):

Name of convenience store	Delivery status inquiry URL
7-11	https://eservice.7-11.com.tw/e-tracking/search.aspx

If the consumer decides not to pick up the goods, the goods will be returned to the original convenience store from which it was shipped in the first place. In which case, amounts prepaid by the consumer (such as the credit card transaction) are not automatically refunded. The merchant shall communicate with the consumer to discuss how to proceed next (e.g. make another shipment, change shipping method, cancel and refund etc.). Delivery charges paid by merchant to the convenience store are non-refundable (because the convenience store has delivered goods to the destination branch as agreed).

Delivery procedures and transmission of delivery status are explained in the following (distinguished between two different circumstances: pickup and non-pickup of goods):

1. **In the event the consumer picks up the goods** (the numbers indicate the sequence of process flow, while the red text indicates elements that need to be designed for your website):
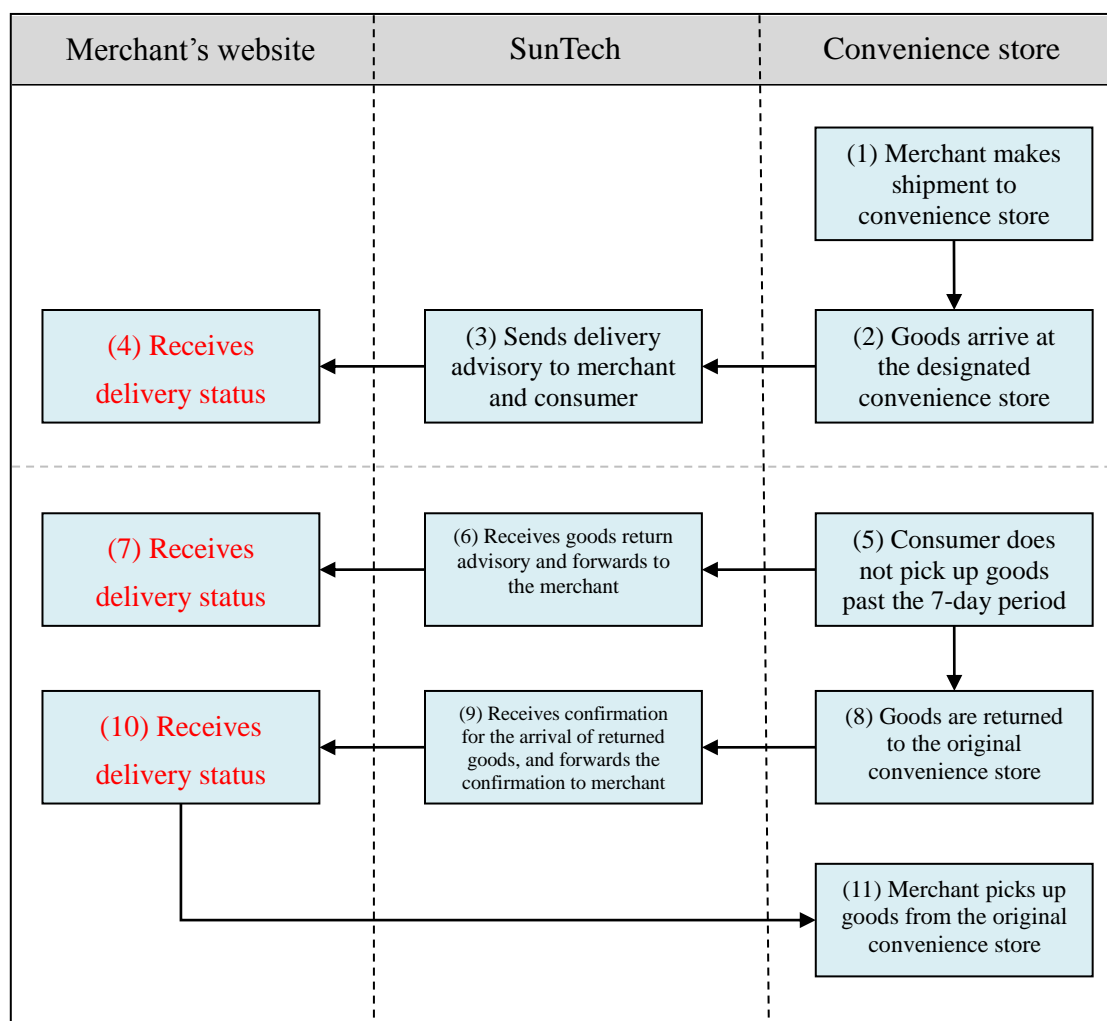
Merchant's website	SunTech	Convenience store
		(1) Merchant makes shipment to convenience store
(4) Receives delivery status	(3) Sends delivery advisory to merchant and consumer	(2) Goods arrive at the designated convenience store
(7) Receives delivery status	(6) Receives notification for successful pickup and forwards to merchant	(5) Consumer picks up goods

Explanation of the above figure:
(1) The merchant will print out delivery documents by inputting the delivery ID into a kiosk machine at a nearby convenience store (convenience store delivery ID is sent after the consumer completes payment, as described in "Receiving Transaction Result"), and hand over the consumer's goods along with delivery documents to the convenience store for shipment.
(2) The convenience store chain will collect and distribute goods through its logistics system to the designated branch. A delivery advisory will be sent to SunTech when the goods arrive at their destination.
(3) Once SunTech receives a delivery advisory from the convenience store, it will inform the consumer (via e-mail and SMS) and the merchant (via e-mail and SunTech's system, as described in the next step).
(4) Merchant receives the delivery status (the merchant needs to write a program for receiving delivery notification; please refer to the "Receiving Delivery Status" section for relevant parameters, and use the "receive" program of each payment service as an example) and updates order status accordingly on its website.
(5) Consumer picks up goods at convenience store. If the consumer has specified "Payment & Pickup at Convenience Store" as the payment method, the payment will also be collected at this point. A successful pickup notice will be sent to SunTech's system once the consumer has picked up the goods.
(6) SunTech receives the successful pickup notice through its system and advises the merchant accordingly (SunTech will initiate the transmission, as described in the following step).

(7) Merchant receives the delivery status (the merchant needs to write a program for receiving delivery notification; please refer to the "Receiving Delivery Status" section for relevant parameters, and use the "receive" program of each payment service as an example) and updates order status accordingly on its website.

2. **In the event the consumer does not pick up the goods** (the numbers indicate the sequence of process flow, while the red texts indicate elements that need to be designed for your website):

Merchant's website	SunTech	Convenience store
		(1) Merchant makes shipment to convenience store
(4) Receives delivery status	(3) Sends delivery advisory to merchant and consumer	(2) Goods arrive at the designated convenience store
(7) Receives delivery status	(6) Receives goods return advisory and forwards to the merchant	(5) Consumer does not pick up goods past the 7-day period
(10) Receives delivery status	(9) Receives confirmation for the arrival of returned goods, and forwards the confirmation to merchant	(8) Goods are returned to the original convenience store
		(11) Merchant picks up goods from the original convenience store

Explanation of the above figure:

(1) The merchant will print out delivery documents by inputting delivery ID into a kiosk machine at a nearby convenience store (convenience store delivery ID is sent after the consumer completes payment, as described in "Receiving Transaction Result"), and hand over the consumer's goods along with delivery documents to the convenience store for shipment.

(2) The convenience store chain will collect and distribute goods through its logistics system to the designated branch. A delivery advisory will be sent to SunTech when the goods arrive at their destination.

(3) Once SunTech receives a delivery advisory from the convenience store, it will inform the consumer (via e-mail and SMS) and the merchant (via e-mail

and SunTech's system, as described in the next step).

(4) Merchant receives the delivery status (the merchant needs to write a program for receiving delivery notification; please refer to the "Receiving Delivery Status" section for relevant parameters, and use the "receive" program of each payment service as an example) and updates order status accordingly on its website.

(5) Consumer did not make pickup at convenience store past the 7-day period. The convenience store activates its return procedures and issues a goods return advisory through SunTech's system.

(6) SunTech receives a goods return advisory through its system, and forwards the advisory to the merchant (Email is sent automatically through SunTech's system, as described in the following step).

(7) Merchant receives the delivery status (the merchant needs to write a program for receiving delivery notification; please refer to the "Receiving Delivery Status" section for relevant parameters, and use the "receive" program of each payment service as an example) and updates order status accordingly on its website.

(8) Convenience store returns the goods to its original branch, and issues a goods return advisory through SunTech's system.

(9) SunTech receives returned goods arrival advice through its system, and forwards the advisory to the merchant (Email is sent automatically through SunTech's system, as described in the following step).

(10) Merchant receives the delivery status (the merchant needs to write a program for receiving delivery notification; please refer to the "Receiving Delivery Status" section for relevant parameters, and use the "receive" program of each payment service as an example) and updates order status accordingly on its website.

(11) Merchant picks up the returned goods at the original convenience store branch (goods return charges apply).

3. **Receiving Delivery Status**

When the convenience store's logistics system updates delivery status to SunTech, SunTech's system will send delivery status (in the background) to the designated URL. Below are the fields used for data transmission:

Name of service	URL fields
Credit Card	Failed Transaction Result URL example code: creditcard/receive
UnionPay Card	Same URL as credit cards example code: creditcard/receive
Web ATM Transfer	Failed Transaction Result URL example code: webatm/receive
ATM Transfer (virtual account number)	Same URL as Convenience Store Payment (barcoded payment slip) example code: 24payment/receive
Convenience Store Payment (barcoded payment slip)	Successful Transaction Result URL example code: 24payment/receive
Convenience Store Payment (payment code)	Successful Transaction Result URL example code: paycode/receive

Payment & Pickup at Convenience Store	Delivery Status URL example code: sunship/receive

Caution

(a) The correct data format should be HTTP FORM POST key-value (non-JSON)

(b) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, all information must be transmitted using URL Encode and decoded using URL Decode before proceeding further. Use UTF-8 for character encoding

Description of parameters:

| Serial No.	Parameter	Parameter name	Description
1	buysafeno	SunTech transaction number	Serial number of the transaction (use alphanumeric characters only)
2	web	Merchant ID	Provided at the time of account application (comprises only alphanumeric characters)
3	Td	Merchant order number	(The parameter shall consist entirely of alphanumeric characters)
4	note1	Remark # 1	Additional details that are sent along with the transaction, which will be returned back to the merchant without alteration
5	note2	Remark # 2	
6	SendType	Transmission method	1: Background transmission
7	CargoNo	Convenience store delivery ID	Convenience store delivery ID that corresponds to this transaction
8	StoreType	Delivery status code	Parameter description: 101: (Numeric characters) indicates that the goods have arrived at the destination convenience store 1010: (Numeric characters) indicates that the goods have been picked up 1B1B: Indicates that consumer intends to return the goods, or that the returned goods have been picked up by merchant
9	StoreMsg	Interpretation of Delivery Status	Text description of delivery status
10	ChkValue	Transaction verification value	The transaction verification value (ChkValue) shall be generated using SHA1. The merchant is advised to generate combined strings and the transaction verification value (ChkValue) using the methods described below, and to compare them with values sent by the SunTech system (the generated SHA1 value shall be entirely converted into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Merchant's Transaction

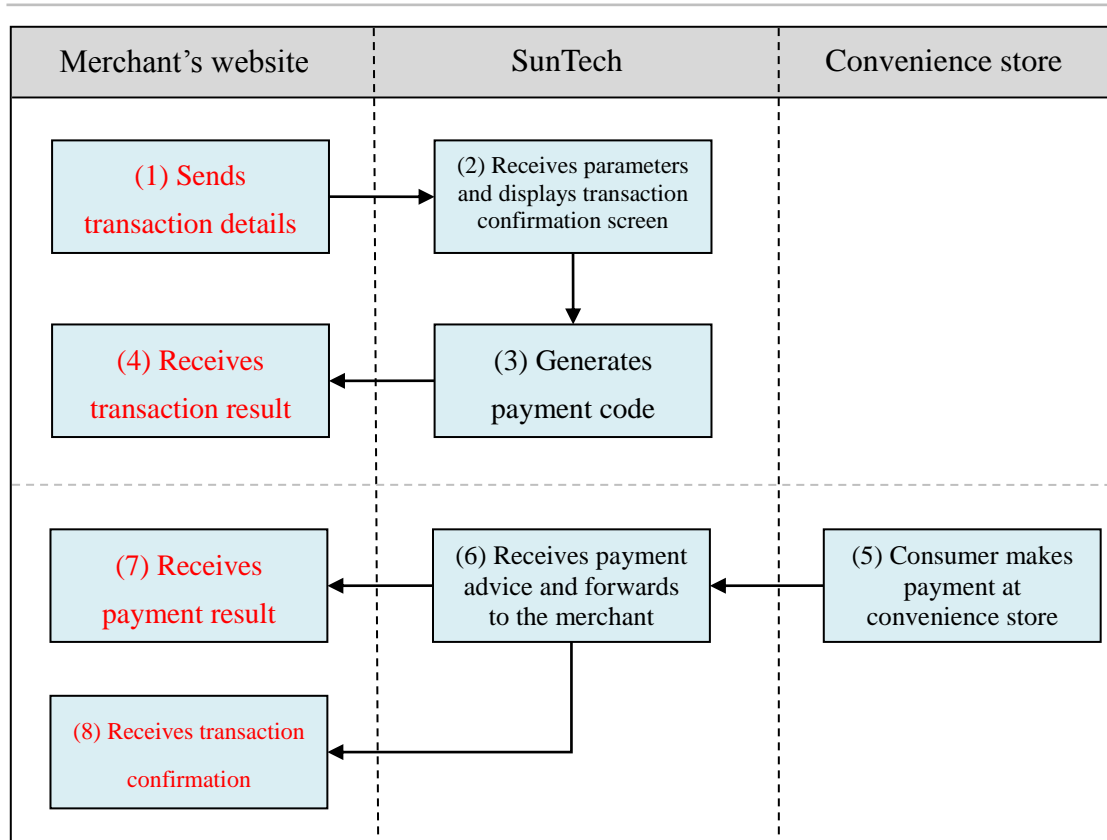|			Password + SunTech transaction number (buysafeno) + delivery status code (StoreType)
			Example: Merchant ID: S1103020010 Transaction Password: abcd5888 SunTech transaction number: 2400009912300000019 Delivery status code: 1010
			The combined string shall be: S1103020010abcd58882400009912300000019 1010
			SHA1 value generated using the combined string becomes: 30C8841E48631373DEA2C8FBA751F5BAF6 EF7501

X. Transaction Confirmation Notification

To prevent unexpected occurrences (such as network disruption, consumer error, browsers being closed, the merchant's website being repaired, etc.) that result in the failed transmission of payment results between SunTech's system and the merchant, SunTech has provided a payment result resending service. By using this function, payment results can be retrieved from SunTech and sent again to the designated URL.

Note: This function is not necessary for integrating to services, and should be developed at your discretion.

The credit card transaction flow, for example, comprises steps 1~5. If you have set up a "Transaction Confirmation URL", SunTech will also send a Transaction Confirmation Notification (step 6) in addition to transaction results (step 5) to the merchant during step 4. For this reason, your website will receive 2 transmissions of transaction results during step 5 (one for SendType 1 and one for SendType 2), and 1 transmission of transaction results (SendType 1) during step 6 (which is this function).
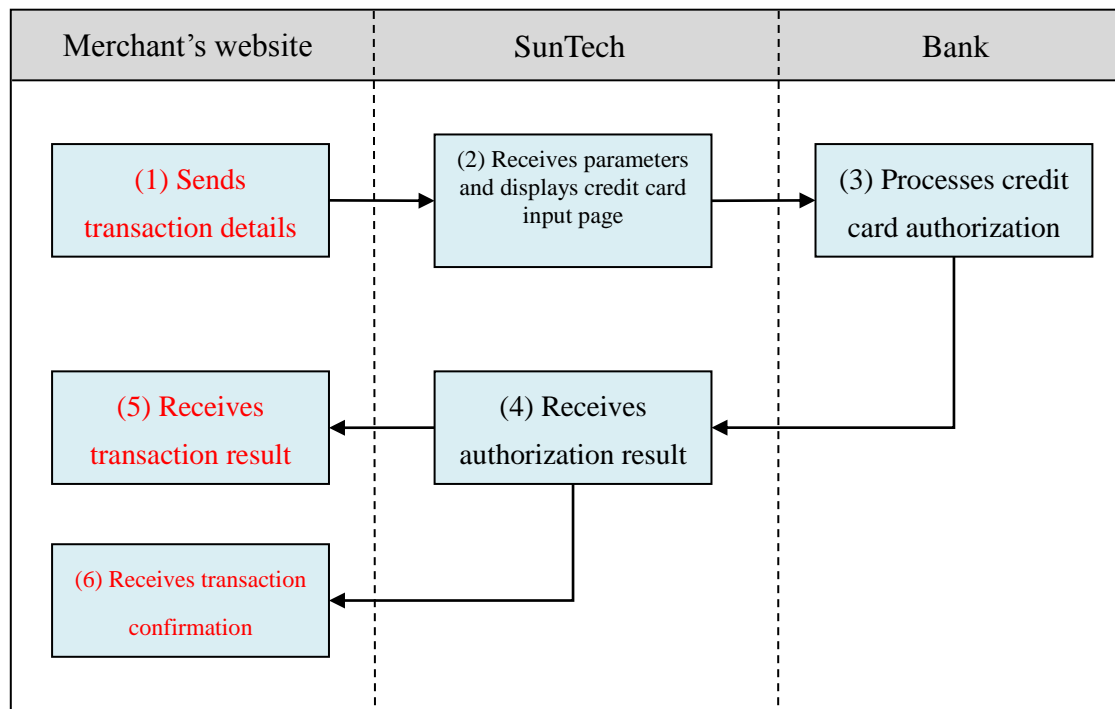
The convenience store payment (payment code) transaction flow, for example, comprises steps 1~7. If you have set up a "Transaction Confirmation URL," SunTech will also send a Transaction Confirmation notification (step 8) in addition to transaction results (step 7) to the merchant during step 6. For this reason, your website will receive 1 transmission of transaction results during step 7 (SendType 1), and 1 transmission of transaction results (SendType 1) during step 8 (which is this function).

Merchant's website	SunTech	Convenience store
(1) Sends transaction details	(2) Receives parameters and displays transaction confirmation screen	
(4) Receives transaction result	(3) Generates payment code	
(7) Receives payment result	(6) Receives payment advice and forwards to the merchant	(5) Consumer makes payment at convenience store
(8) Receives transaction confirmation		

Design of transaction confirmation functionality:

The purpose of this function is to send another identical "payment advisory" to the designated URL for the various services involved. Please log in to Merchants -> Service Settings to set up "(3)Transaction Confirmation URL" showed as below figure (refer to the sample program "receive"(if "paid" is not existed) or "paid"(if existed) of each payment service as an example). This function is shared by multiple services, and given the different types of parameters transmitted by each service, you may receive redundant parameters. Please ignore the ones that are redundant.

交易成功接收網址 **(1)**https://www.mywebsite.com.tw/payment/receive_data.php
交易失敗接收網址 **(2)**https://www.mywebsite.com.tw/payment/receive_data.php
交易回傳確認網址 **(3)**https://www.mywebsite.com.tw/payment/paid_data.php

If TCP/UDP port number included in the transaction result URLs (e.g. https://www.mywebsite.com.tw:8080/xxx.php), only the following ports are allowed for security reason: 80, 443, 8080~8085.

If content of the advisory received is correct, please reply "0000" (4-digit numeric characters) in plain text without HTML code. This is to notify SunTech that the advisory has been received successfully. If transmission fails (such as loss of connection or if you reply anything other than 0000), SunTech will make another transmission attempt every hour thereafter, up to a total of three transmissions (including the first transmission).

XI. Transaction Status Checking (Double_Check)

You may use this function to make background checks of transaction status at SunTech's system, and thereby ensure consistency between the order/payment status shown on your website and those shown on SunTech's system.

Furthermore, if you have doubts about the status of a particular order or if you do not receive transaction advisory, you may log in to Merchants to inquire about transactions or use the inquiry function to update order status.

Note: This function is not necessary for integrating services, and should be developed at your discretion.

1. Transaction Inquiry

Please send to the following URL using HTTP POST (use transaction inquiry program "PaymentCheck" as an example):

Production environment	https://www.esafe.com.tw/Service/PaymentCheck.aspx
Test environment	https://test.esafe.com.tw/Service/PaymentCheck.aspx

Caution
(a) The correct data format should be HTTP FORM POST key-value (non-JSON)
(b) Parameters marked with * are mandatory
(c) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, please perform URL Encode before sending. Use UTF-8 for character encoding
(d) Empty string refers to a string that has a length of zero, which is different from null and space (ASCII code: 32)

Description of parameters:

Serial No.	Parameter	Parameter name	Length restriction	Description
1	web	*Merchant ID		Merchant ID of the transaction (service) inquired. If you wish to inquire transactions across multiple services, please make separate inquiries
2	MN	Transaction amount	8	(This parameter accepts numbers only)
3	buysafeno	SunTech transaction number	19	Serial number of the transaction (use alphanumeric characters only)
4	Td	Merchant order number	20	(This parameter accepts alphanumeric characters only)

5	note1	Remark # 1	400	The remark must not contain special characters such as: *'<>[]"
6	note2	Remark # 2	400	
7	ChkValue	*Transaction verification value		Please generate the transaction verification value (ChkValue) using SHA1 (the generated SHA1 value must be converted entirely into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + transaction amount (MN) + SunTech transaction number (buysafeno) + merchant order number (Td) + remark 1 (note1) + remark 2 (note2) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example (assuming that inquiry is made on the amount): Merchant ID: S1103020010 Transaction Password: abcd5888 Transaction amount: 1688 SunTech transaction number: empty string Merchant order number: empty string Remark 1: empty string Remark 2: empty string The combined string will be: S1103020010abcd58881688 The SHA1 value generated using the combined string becomes: CEFB535782B005BA34B67AEC5A167368FD9B9741

Note: In addition to the mandatory field, select at least one inquiry criteria from serial numbers 2, 3, 4, 5 and 6 (selecting multiple criteria is allowed, but non-selection is not permitted). Inquiry can only be made on transactions in the last 7 days (inquiry using "SunTech transaction number" has no date restriction).

Error message and solution:

Error message	Solution
Merchant ID cannot be blank	Merchant ID is mandatory
Please specify at least 1 search criteria	Select at least one from serial numbers 2, 3, 4, 5 and 6

No transaction found; please contact your merchant	The specified search criteria found no matching transaction. Please verify whether the search criteria is correct, or change the search criteria
Double_Check requires password verification	Transaction verification value (ChkValue) is missing. This is a mandatory field; please generate according to the prescribed rules
Transaction verification value error. Please note that the value is case-sensitive	Please check the composition of transaction verification value (ChkValue) and the correctness of Transaction Password. For more possible causes of this error message, please see "Common Problems" for a more detailed explanation.

2. Receiving Inquiry Result

Once search criteria is sent through the inquiry URL, SunTech will reply with search results immediately (written in plain text, not transmit to another URL using HTTP FORM POST).

If the inquiry returns more than one transaction (order), each transaction will be separated by a line break (CR+LF) and have information presented in the following format (each field is separated by ##; the following example may be shown in separate lines due to document formatting, but in real practice there should be one separate line for each transaction):

Merchant ID##SunTech transaction number##transaction amount##transaction time##response code##last 4 digits of credit card number## approval code##transaction verification value (ChkValue)

Example:
S1103020010##E40000991230000019##110##201112311825##00##4321##A1 2345##1B9AB76287215E3497C002B955E7203A9B456276

Description of parameters:

Serial No.	Parameter name	Description
1	Merchant ID	Same as the merchant ID provided during inquiry
2	SunTech transaction number	Serial number of the transaction (use alphanumeric characters only)
3	Transaction amount	(This parameter accepts numbers only)
4	Transaction time	This is the time the transaction is established, but not necessarily the time the consumer makes payment. For example, in credit card transactions, a transaction is established at the time credit card authorization is given (in which case, the two dates are the same); however, where payment at convenience store is to be specified, the consumer tends to complete payment after the day transaction is established. Acceptable date format: YYYYMMDDHHmm; example:

		201708242130; present time in 24-hour clock
5	Response code	00 (numeric characters) represents a successful transaction; other codes indicate transaction failure, refund or cancellation Please verify transactions against the ChkValue. (The parameter shall consist entirely of alphanumeric characters)
6	Last 4 digits of the credit card number	The last 4 digits of the consumer's credit card number; leave empty string for non-credit card transactions (this parameter accepts numbers only)
7	Approval code	Approval code obtained following successful credit card approval; leave empty string for non-credit card transactions
8	Transaction verification value	The transaction verification value (ChkValue) shall be generated using SHA1. The merchant is advised to generate combined strings and the transaction verification value (ChkValue) using the methods described below, and to compare them with values sent by the SunTech system (the generated SHA1 value shall be entirely converted into capital letters). The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + SunTech transaction number (buysafeno) + transaction amount (MN) + response code (errcode) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example: Merchant ID: S1103020010 Transaction Password: abcd5888 SunTech transaction number: 2400009912300000019 Transaction amount: 1688 Response code: 00 The combined string shall be: S1103020010abcd58882400009912300000019168800 SHA1 value generated using the combined string becomes: 2309D96F77C83B4E777793FB95D0ED60C3FFC4E9

XII.   Refund Request

In this chapter, Refund Request refers to the return of transaction amount proceeds back to the consumer, and not mean as goods return (the goods return shall be negotiated between the consumer and the merchant).

Once the consumer raises a Refund Request, the merchant may visit SunTech's website (https://www.esafe.com.tw), log in to Merchants and go to "Refund" section to search for the transaction to be refunded. Simply input the reason for refund to proceed. The merchant may also choose to have Refund Request transmitted in the background through system integration. The second half of the chapter will explain how to integrate.

Note: This function is not necessary for integrating services, and should be developed at your discretion.

Notes on Refund Request (applies to website inquiry and system integration):
 (1) A successful request does not indicate a successful refund, and nor does it change order status to "Refunding" with any immediate effect. SunTech reserves the right to final approval, and will contact the merchant for any abnormal circumstances encountered during the refund.
 (2) It takes approximately 5~7 working days for credit card issuers to process a refund. Consumers will have to ask their credit card issuers about the return of credit limit.
 (3) Transaction occurred on EDC POS/ mPOS should be requested within each device. It's not allowed to request from other method or website.
 (4) Not all services are eligible to request for refund. Below is a list of services that are eligible for refund:

Name of service	Whether refund is available
Credit Card	Available: 1. For one-time payment: Full or partial refund (unable to request partial refund if the merchant has yet to claim payment on the day of transaction). Partial refund can be requested only once; the second request will refund the entire remaining balance. If the verification of the 1st refund request is in process and not yet committed, you can't request 2nd refund of the same order. 2. For installment payment: Full refund only. It's not possible to request partial refund.
UnionPay Card	Available (full refund only)
Convenience Store Payment (barcoded payment slip)	Not eligible for refund request. Since there is no way to refund proceeds back to the collecting convenience store or bank, the consumer will have to be informed to collect proceeds personally.
Convenience Store Payment (payment code)	
Web ATM Transfer	

ATM Transfer (virtual account number)	
Payment & Pickup at Convenience Store	

Notes on system integration:
  (1) In order to avoid abuse of Refund Requests, this function only accepts return requests sent from particular IP addresses. Please apply in advance and provide the IP address of the server if you intend to make use of this function.
  (2) Refund requests for transactions in the last two months can be raised via system integration; for transactions that exceed two months, please raise the request in Merchants or using fax.

Integration method:

Please send to the following URL using HTTP POST (use refund request program "refund" as an example):

Production environment	https://www.esafe.com.tw/Service/Hx_CardRefund.ashx
Test environment	https://test.esafe.com.tw/Service/Hx_CardRefund.ashx

Caution
  (a) The correct data format should be HTTP FORM POST key-value (non-JSON)
  (b) Parameters marked with * are mandatory
  (c) To prevent certain characters (e.g. Chinese characters) from being converted to other codes during transmission, please perform URL Encode before sending. Use UTF-8 for character encoding
  (d) Empty string refers to a string that has a length of zero, which is different from null and space (ASCII code: 32)

Description of parameters:

Serial No.	Parameter	Parameter name	Length restriction	Description
1	web	*Merchant ID		ID of the merchant (service) that this transaction is attributed to
2	MN	*Transaction amount	8	Accepts full or partial refund (partial refund is available only for one-time credit card payment). Partial refund can be requested only once; the second request will refund the entire remaining balance. If the verification of the 1st refund request is in process and not yet committed, you can't request 2nd refund of the same order. (This parameter accepts numbers only)
3	buysafeno	*SunTech transaction number	19	Serial number of the transaction (use alphanumeric characters only)

4	Td	*Merchant order number	20	Must be the same order number as the original order (this parameter accepts alphanumeric characters only)
5	RefundMemo	*Refund reason	100	Explain the reason for refund here; do not use special characters such as: *'<>[]"
6	ChkValue	*Transaction verification value		Please generate transaction verification value (ChkValue) using <u>SHA256</u>. The value shall consist of the following (excluding the + sign): Merchant ID (web) + Transaction Password + SunTech transaction number (buysafeno) + transaction amount (MN) + merchant order number (Td) Important: Please refer to "Preparation and Important Notes" chapter for details on how to set up the Transaction Password. This password is different from the login password Example: Merchant ID: S1103020010 Transaction Password: abcd5888 SunTech transaction number: 2400009912300000019 Transaction amount: 1688 Merchant order number: AC9087201 The combined string shall be: S1103020010abcd5888240000991230 00000191688AC9087201 SHA256 value generated using the combined string becomes: ca817f0333f4da7f4ec836b2ac08015 a1b76816bc711e3fb42c1708abbb5d 081

Once SunTech receives the refund request, it will reply immediately with progress (written in plain text, not transmit to another URL using HTTP FORM POST). The reply will contain the following possible information:

Code or content	Description
E0	Refund request successful
Other texts	Error message for failure of refund request

Common error message and solution:

Error message	Solution
Unauthorized source location. Please raise the request via SunTech	In order to avoid abuse of Refund Request, this function only accepts return requests sent from particular IP addresses.
Transaction not found	No transaction is found given the order information submitted
Refund not acceptable for non-credit card transactions	Please refer to the list of services that are eligible for refund
You may only request for refund of transactions made in the last 2 months! Please submit your refund request via fax instead	Only transactions in the last two months are eligible for a refund request using this integration. Refund of transaction beyond the prescribed period must be raised through Merchants via fax
Transaction verification value (ChkValue) error. Please note that the value is case-sensitive	Please check the composition of transaction verification value (ChkValue) and the correctness of Transaction Password. For more possible causes of this error message, please see "Common Problems" for a more detailed explanation.
Duplicate data exists	Indicates that a refund request had already been raised for this transaction

XIII. E-Invoice

If you wish to issue E-Invoices to customers upon completion of each payment, you must:

1. Apply for E-Invoice service with a SunTech sales representative, or dial SunTech's customer service hotline.
2. Once the application is completed, you will be issued a username and password for logging in to the back end system of PayNow (referred to as "PayNow invoicing password" below).
3. Log in to SunTech → Merchants → Profile and click on "PayNow invoice password" to set up the password you have acquired (as depicted in the following figure).

4. You are required to transmit "Order Info" through the integration or configure a "Default Order Info" (e.g. Retail goods) under Merchants → Profile that commonly applies to all transactions. Whichever way you choose to proceed, you are not required to write any additional codes to integrate the E-Invoice service. Upon a successful approval or payment, the system will send an advisory for the successful transaction along with the invoice number to the merchant's transaction results URL. You may also log in and inquire at PayNow.

Timing of issuance for E-Invoices:

E-Invoices are issued after consumer has made payments successfully. Below is a description of the procedures involved:

1. For credit card/Web ATM Transfer: Cardholder inputs card number or makes immediate payment using Web ATM transfer (and also input buyer's tax ID here if needed) → card authorization or transfer successful → issue invoice → transmit parameters to merchant.
2. For convenience store payment (barcoded payment slip or payment code) and ATM Transfer (virtual account): When checkout, consumer inputs buyer's tax ID on SunTech's payment page if needed. Consumer makes payment at convenience store or performs bank transfer -> SunTech receives payment notification → issue invoice → transmit parameters to merchant.

Cancellation and refund:

After you request a refund, SunTech will not revoke E-Invoices or issue debit note for the transactions (revocation applies to E-Invoices that have not been filed with the tax administration, while debit note applies to those that have). Please log in to PayNow, find the E-Invoices you wish to revoke/ issue debit note, and confirm order details before pressing the Revoke/Issue debit note button.

Caution:
1. If you have already integrated with E-Invoice service of PayNow, do not configure "PayNow invoice password" again in the Merchants section of SunTech's website. This is to prevent duplicate invoice issuing.
2. If you change your login password in PayNow's back-end system, you must also log in to SunTech and change "PayNow invoice password" under Merchants to match your new password.
3. This E-Invoice service is provided by PayNow, Inc.

XIV.   Common Problems

1.   How do I apply for a test account?
A: Please refer to "Preparation and Important Notes" chapter of the first chapter in this
   document.

2.   After submitting transaction, I receive the error message "Merchant not found."
A: Please check (1) Whether merchant ID is correct; (2) Whether your merchant ID
   for the test environment is different from the production environment, and
   whether you are using the test environment merchant ID in the production
   environment; and (3) Whether you are integrating the test environment or
   production environment URL.

3.   After submitting a transaction, I receive the error message "Transaction
    verification value (ChkValue) error. Please note that the value is case-sensitive."
A: Please check (1) Whether merchant ID is correct; (2) Whether your merchant ID
   for the test environment is different from the production environment, and
   whether you are using the test environment merchant ID in the production
   environment; (3) Whether the Transaction Password is entered incorrectly
   (Transaction Password is different from the login password; please configure
   under Merchants); (4) Whether you are integrating the test environment or
   production environment URL; (5) Whether the composition of transaction
   verification value (ChkValue) contains error, and check for missing fields, wrong
   sequences, and the use of only integers for transaction amounts with no decimal
   and dollar sign.

4.   A screen with the message "Insecure data transmission" appears during
    transaction.
A: Some SSL-enabled browsers display this message when trying to exchange data
   with a non-SSL certified website. We recommend that you apply for an SSL
   certificate to ensure the security of data exchanged between your website and
   SunTech. Doing so would also avoid this problem.

5.   When the development implemented, how to switch to production environment?
A: You need to change:
    (1) merchant ID (you can get this after contract signed)
    (2) transaction password (please refer to "Preparation and Important Notes"
    chapter for details)
    (3) payment URL (please refer to "Sending Transactions" section of each
    payment service)

Appendix A. Convenience Store Selection Functionality - 7-11

Please include a step in your checkout procedure that enables consumers to choose the convenience stores from which to pick up their goods. Given the popularity of social network apps (such as Facebook, LINE etc.), your store / consumers may share product URLs through them. However, these apps do not allow the opening of new windows or tabs during the checkout process (results in overriding the original page), so please avoid displaying convenience store selection screen in the form of a new window or new tab. Furthermore, convenience stores do not allow store selection screen to be embedded in the merchant's webpage using "iframe" method, therefore it is recommended that you redirect consumers to the convenience store's webpage where they can select their designed branch, and redirect them back to your website once they have made their selection.

Integration shall proceed as follows:

1. **Transmission of Parameters**
   Please send to the following URL using HTTP GET/POST (this store selection function is provided by the respective convenience stores; you may use store selection program "StoreSelect" as an example):

Ordinary screen	https://emap.presco.com.tw/c2cemap.ashx
Cell phone screen	https://emap.presco.com.tw/c2cemapm-u.ashx

   Caution
   (a) The correct data format should be HTTP FORM GET/POST key-value (non-JSON)
   (b) Empty string refers to a string that has a length of zero, which is different from null and space (ASCII code: 32)

   Description of parameters:

Serial No.	Parameter	Parameter name	Length restriction	Description
1	eshopid	Vendor ID	3	Please input 004 here
2	storeid	Store ID	0	Please leave empty string
3	showtype	Display type	1	Please input 1 here
4	tempvar	Custom content	20	This field can be used at the merchant's discretion. Content will be sent back the merchant's webpage. Can be left as empty string
5	url	Return URL	100	Data and parameters of the store selected by consumer will be sent back to this URL. The URL should begin with http:// or https://

2.   Return Parameters

Once the consumer has made the selection, the corresponding parameters will be sent back to the "Return URL". The parameters listed below are mandatory; parameters outside of the list can be ignored.

Caution

(a)   The correct data format should be HTTP FORM POST key-value (non-JSON)

Description of parameters:

Serial No.	Parameter	Parameter name	Description
1	storeid	Pickup store ID	ID of the store that the consumer has selected
2	storename	Pickup store name	Name of the store that the consumer has selected
3	tempvar	Custom content	To be used at the merchant's discretion

You simply need to obtain parameters "storeid" and "storename" and send them along with other parameters when integrated to SunTech's system (the names of parameters sent to SunTech differ slightly in terms of letter case; please change them to "StoreID" and "StoreName").

Appendix B. Version and Revision History

Version	Changes
V4.0.3	2018/9/17 Addition: 1. Buyer's Tax/VAT number and Donation Code are accepted through sending parameters from merchant's website in all payment services. Changed: 1. Remove "Taishin International Bank" parameter from ATM transfer bank type (AgencyBank) in "Integrating Convenience Store Payment (barcoded payment slip)" and "Integrating ATM Transfer (virtual account)" chapters.
V4.0.2	2018/7/16 Changed: 1. Description improved on "Transactions involving 3D Secure" 2. Credit card installment terms adds splitting into 30 parts 3. Limitation on the TCP/UDP port number of transaction result URL.
V4.0.1	2018/1/18 Addition: 1. Convenience Store Payment (payment code) returns the branch name, telephone number, and the address of convenience store where the consumer makes payment 2. ATM Transfer (virtual account) adds CTBC Bank account, sends bank type, returns bank code and bank branch name 3. Explain how to switch from test environment to production in "Common Problems" Chapter
V4.0	2017/09/21 Addition: 1. Adds "Refund Function" chapter 2. Integrating UnionPay Card is presented in a separate chapter, and allows pickup at convenience store 3. ATM Transfer (virtual account) account number can be generated separately (explained in a new chapter) 4. Convenience Store Payment (barcoded payment slip) returns bank ID and Payment time (when payment is made using ATM transfer) 5. Convenience Store Payment (payment code) returns ID of the convenience store at which payment is made 6. Adds "Common Problems" chapter Removal: 1. Sample programs have been removed from this document, while sample codes are being made available for download
V3.1	2017/04 Addition: 1. Return parameters now include invoice number 2. E-Invoice chapter