

iPay88's ePayment Technical Specification

Version 1.5.20



*iPay88 is an Online Payment Switching Gateway provided by **Mobile88.com Sdn Bhd.com Sdn Bhd.** For more information, please visit www.iPay88.com

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1.0 Introduction

This document describes the following functionalities of iPay88's ePayment system:

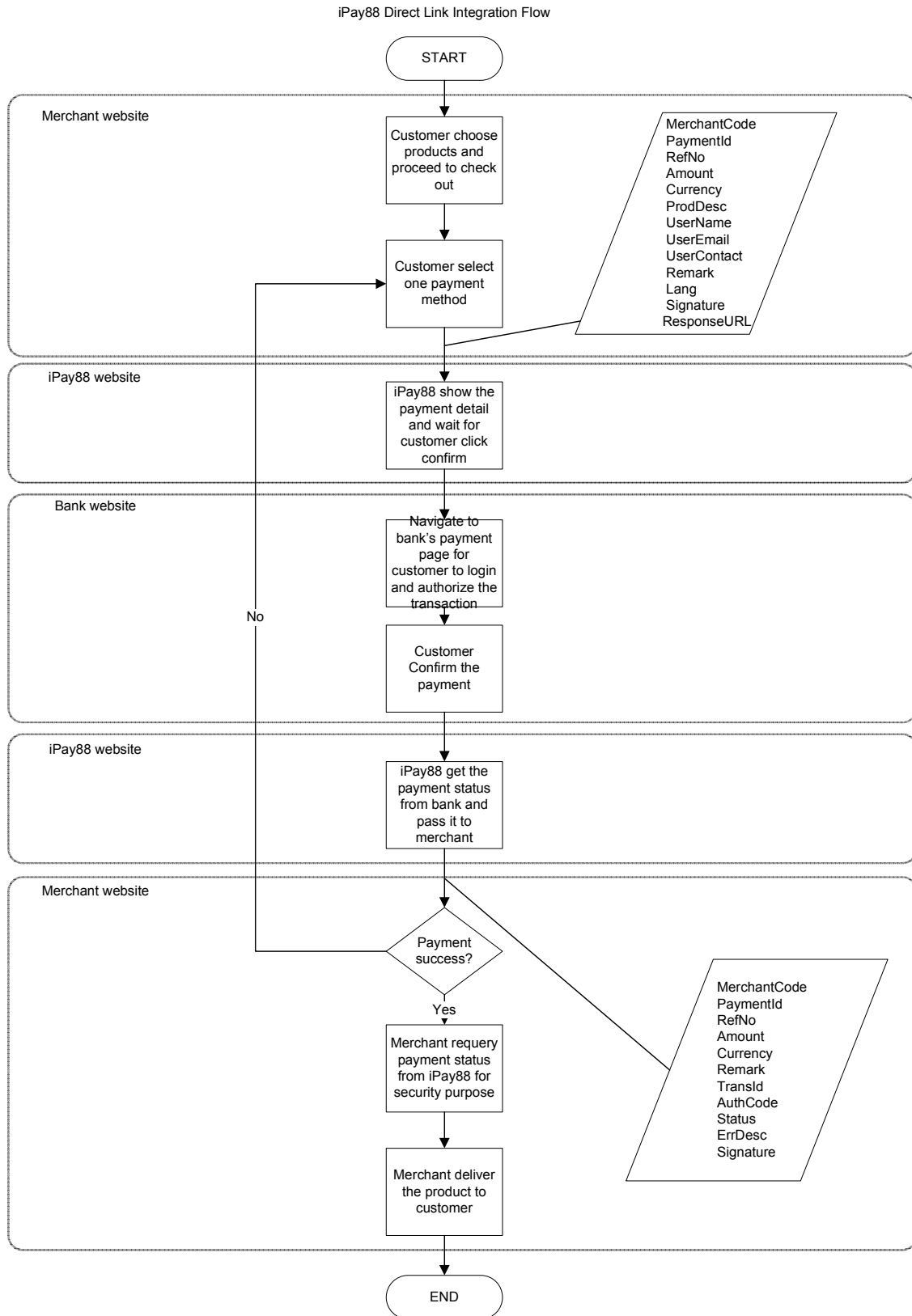
- ePayment : Multiple payment methods for merchant e-commerce website
- Reports : Online view transaction report

1.1 ePayment

1.1.1 Objective

Enable iPay88's merchant to perform multiple payment types for their customer make online purchase.

1.1.2 Transaction Flow Diagram



1.1.3 Transaction Processing Step

- Step 1. Merchant sends HTTPs Post Request containing payment details to iPay88 e-payment page. Payment Details contain the following fields:
- Merchant Code
 - Payment Method
 - Merchant Reference Number
 - Payment Amount
 - Currency
 - Product Description
 - Customer Name
 - Customer Email
 - Customer Contact
 - Merchant Remark
 - Signature (refer to 1.1.11)
 - Response URL
- Step 2. User views and confirms payment details entered in Step 1. For credit card payment, user needs to key-in credit card information.
- Step 3. User continues to fill in Username and Password at bank website (for non credit card payment)
- Step 4. User selects the account to debit the payment. (for non credit card payment)
- Step 5. User confirms the payment. If yes, go to next step. (for non credit card payment)
- Step 6. User views and prints the payment detail. (for non credit card payment)
- Step 7. Response is returned to the iPay88 website indicating a successful or failed transaction.
- Step 8. Mobile88 response back the payment status to merchant with a signature
- Step 9. For successful payment transaction, merchant need to compare the signature from iPay88. Refer to (1.1.12.2)

1.1.4 Rule, Limitation and Constraint

- Service Hours: 7x24 exclude host down time

1.1.5 URL

iPay88 ePayment **Entry.asp** : <https://www.mobile88.com/epayment/entry.asp>

iPay88 re-query payment status **enquiry.asp** :
<https://www.mobile88.com/epayment/enquiry.asp>

iPay88 payment request **Request URL** : [provided by merchant before the integration]

iPay88 payment status receiving **Response URL** : [provided by merchant before start the integration]

1.1.6 Payment Request Parameters (Request URL to Entry.asp)

Merchant HTTPS POST payment request parameters to iPay88

No.	Field Name	Type (Size)	M/O	Description
1	MerchantCode	varchar(20)	M	Merchant code assigned by iPay88
2	PaymentId	integer	O	Please refer to appendix
3	RefNo	varchar(20)	M	Unique merchant transaction number / Order ID (Retry for same RefNo only valid for 30 mins)
4	Amount	currency	M	Payment amount with two decimals
5	Currency	varchar(5)	M	Please refer to appendix
6	ProdDesc	varchar(100)	M	Product description
7	UserName	varchar(100)	M	Customer name
8	UserEmail	varchar(100)	M	Customer email for receiving receipt
9	UserContact	varchar(20)	M	Customer contact
10	Remark	varchar(100)	O	Merchant remarks
11	Lang	varchar(20)	O	Encoding type "ISO-8859-1" – English "UTF-8" – Unicode "GB2312" – Chinese Simplified "GD18030" – Chinese Simplified "BIG5" – Chinese Traditional
12	Signature	varchar(100)	M	SHA1 signature (refer to 1.1.11)
13	ResponseURL	varchar(200)	O	Payment response page

Note:

M : Mandatory field

O : Optional field, value can be empty but parameter must exists

1.1.7 Sample HTML Source (Payment Request)

```
<HTML>
<BODY>
<FORM method="post" name="ePayment"
action="https://www.mobile88.com/ePayment/entry.asp">

<INPUT type="hidden" name="MerchantCode" value="M00003">
<INPUT type="hidden" name="PaymentId" value="2">
<INPUT type="hidden" name="RefNo" value="A00000001">
<INPUT type="hidden" name="Amount" value="1.00">
<INPUT type="hidden" name="Currency" value="MYR">
<INPUT type="hidden" name="ProdDesc" value="Photo Print">
<INPUT type="hidden" name="UserName" value="John Tan">
<INPUT type="hidden" name="UserEmail" value="john@hotmail.com">
<INPUT type="hidden" name="UserContact" value="0126500100">
<INPUT type="hidden" name="Remark" value=" ">
<INPUT type="hidden" name="Lang" value="UTF-8">
<INPUT type="hidden" name="Signature" value="84dNMbfgjLMS42IqSTPqQ99cUGA=">
<INPUT type="hidden" name="ResponseURL"
value="http://www.YourResponseURL.com/payment/response.asp">
<INPUT type="submit" value="Proceed with Payment" name="Submit">
</FORM>
</BODY>
</HTML>
```

1.1.8 Payment Response Parameters (iPay88 to Response URL)

HTTPS POST response from iPay88 after performing payment

No.	Field Name	Type (Size)	M/O	Description
1	MerchantCode	varchar(20)	M	Merchant code assigned by iPay88
2	PaymentId	integer	O	Please refer to appendix
3	RefNo	varchar(20)	M	Unique merchant transaction number / Order ID
4	Amount	currency	M	Payment amount with two decimals
5	Currency	varchar(5)	M	Please refer to appendix
6	Remark	varchar(100)	O	Merchant remarks
7	TransId	varchar(30)	O	iPay88 transaction id
8	AuthCode	varchar(10)	O	Bank's approval code
9	Status	varchar(1)	M	Payment status "1" – Success "0" – Fail
10	ErrDesc	varchar(100)	O	Payment status description (Refer to Appendix)
11	Signature	varchar(100)	M	SHA1 signature (refer to 1.1.11)

Note:

M : Mandatory field

O : Optional field, value can be empty but parameter must exists

1.1.9 Sample HTML Source (Payment response)

1.1.9.1 Asp sample code

```
<%  
MerchantCode      = Request.Form("MerchantCode")  
PaymentId         = Request.Form("PaymentId")  
RefNo             = Request.Form("RefNo")  
Amount           = Request.Form("Amount")  
eCurrency         = Request.Form("Currency")  
Remark           = Request.Form("Remark")  
TransId          = Request.Form("TransId")  
AuthCode         = Request.Form("AuthCode")  
eStatus          = Request.Form("Status")  
ErrDesc          = Request.Form("ErrDesc")  
Signature         = Request.Form("Signature")  
%>  
<Add your programming code here>
```

1.1.9.2 PHP sample code

```
<?PHP  
$merchantcode = $_REQUEST["MerchantCode"];  
$paymentid   = $_REQUEST["PaymentId"];  
$refno       = $_REQUEST["RefNo"];  
$amount      = $_REQUEST["Amount"];  
$currency    = $_REQUEST["Currency"];  
$remark      = $_REQUEST["Remark"];  
$cctransid   = $_REQUEST["TransId"];  
$authcode    = $_REQUEST["AuthCode"];  
$estatus     = $_REQUEST["Status"];  
$errdesc     = $_REQUEST["ErrDesc"];  
$hashstring  = $_REQUEST["Signature"];  
PHP?>  
<Add your programming code here>
```

1.1.10 Re-query Payment Status Parameters (Response URL to enquiry.asp)

Merchant HTTPS POST re-query payment status parameters to iPay88

No.	Field Name	Type (Size)	M/O	Description
1	MerchantCode	varchar(20)	M	Merchant code assigned by iPay88
2	RefNo	varchar(20)	M	Unique merchant transaction number / Order ID
3	Amount	currency	M	Payment amount with two decimals

Note:

M : Mandatory field

O : Optional field, value can be empty but parameter must exists

Directly reply on the page from iPay88

Possible reply from iPay88	Description
00	Successful payment
Invalid parameters	Parameters pass in incorrect
Record not found	Cannot found the record
Incorrect amount	Amount different
Payment fail	Payment fail
M88Admin	Payment status updated by Mobile88 Admin(Fail)

Sample source code for re-query function in ASP:

```
<%  
Function SendToiPayInq(byval MerchantCode, byval RefNo, byval Amount)  
  
Dim TryNo, thenQString, URL, strReturn  
    TryNo = 0  
  
QString = "MerchantCode=" & MerchantCode & "&RefNo=" & RefNo & _  
    "&Amount=" & Amount  
    URL = "https://www.mobile88.com/ePayment/enquiry.asp"  
    On Error Resume Next  
  
Do  
    Set xobj = Server.CreateObject ("Msxml2.ServerXMLHTTP.3.0")  
    xobj.setTimeouts 30000 , 60000, 60000, 60000  
    xobj.open "POST", URL, false  
    xobj.setRequestHeader "Content-Type", "application/x-www-form-urlencoded"  
    xobj.send QString  
    TryNo = TryNo + 1  
Loop While xobj.status <> 200 and TryNo < 3  
  
If xobj.status <> 200 Then  
    SendToiPayInq = Err.Description & "(" & Err.Number & ")"  
Else  
    SendToiPayInq = xobj.responseText  
End If  
set xobj =nothing  
  
End Function  
  
Response.write SendToiPayInq (MerchantCode, RefNo, Amount)  
>
```

Sample source code for re-query function in PHP:

```
<?PHP

function Requery($MerchantCode, $RefNo, $Amount){

$query = "http://www.mobile88.com/epayment/enquiry.asp?MerchantCode=" .
$MerchantCode . "&RefNo=" . $RefNo . "&Amount=" . $Amount;

$url = parse_url($query);
$host = $url["host"];
$path = $url["path"] . "?" . $url["query"];
$timeout = 1;
$fp = fsockopen ($host, 80, $errno, $errstr, $timeout);
if ($fp) {
    fputs ($fp, "GET $path HTTP/1.0\nHost: " . $host . "\n\n");
    while (!feof($fp)) {
        $buf .= fgets($fp, 128);
    }
    $lines = split("\n", $buf);
    $Result = $lines[count($lines)-1];
    fclose($fp);
} else {
    # enter error handling code here
}
return $Result;

}
?>
```

1.1.11 Security Control

To enhance security, please go through the following steps at the merchant's payment status receiving page (Response URL):

1. Check the HTTP_REFERER value is from <https://www.mobile88.com> (*only applicable if the merchant web site is working with SSL Certificate*)
2. Check the payment amount from iPay88 is match with yours
3. Do a re-query payment status for successful payment transaction to double confirm
4. Compare the Signature from iPay88 with your own

1.1.12 Data Integrity and Security using Hash Signature

SHA1 hash is a security feature that enables your script to identify that the results of a transaction are actually from the appropriate authorization source and also for iPay88 to make sure the integrity of data received on a transaction request.

Using the SHA1 algorithm, a unique signature or fingerprint of the transaction can be created. This mathematical algorithm used to construct this signature is designed in such a way that any change to the information used in the calculation of the signature will cause a completely different signature to be created.

Also, the information used in the calculation of the signature cannot be discovered through any analysis of the signature itself.

This is done by using information from your account. Every transaction that is processed through the system has a corresponding hash signature of the transaction created during the transaction process.

1.1.12.1 Request page signature

This signature must be included in the request of every transaction. This hash signature for a request is a hash of the following five fields:

1. MerchantKey (Supplied by iPay88 and share between iPay88 and the merchant only)
2. MerchantCode
3. RefNo
4. Amount
5. Currency

The fields must set in the following order,
(MerchantKey & MerchantCode & RefNo & Amount & Currency)

For an example,

MerchantKey = "apple"

MerchantCode = "M00003"

RefNo = "A00000001"

Amount = "1.00" (You should take out the "." And ",")

Currency = "MYR"

The hash would be calculated on the following string:

appleM00003A00000001100MYR

The resulting has signature value equals to (using SHA1 algorithm)

84dNMbfgjLMS42IqSTPqQ99cUGA=

To ensure the signature generated was correct, visit the link below for signature comparison.

<http://www.mobile88.com/epayment/testing/testsignature.asp>

1.1.12.2 Response page signature

If the Merchant request is successful the response message will contain as SHA1 hashed signature. The hash signature for the response is a hash of the following fields:

1. MerchantKey (Supplied by iPay88 and share between iPay88 and the merchant only)
2. MerchantCode
3. PaymentId
4. RefNo
5. Amount
6. Currency
7. Status

These fields must be set in the following order,

(MerchantKey & MerchantCode & PaymentId & RefNo & Amount & Currency & Status)

For Example:

MerchantKey = "apple"

MerchantCode = "M00003"

PaymentId = "2"

RefNo = "A00000001"

Amount = "1.00" (You should take out the "." And ",")

Currency = "MYR"

Status = "1"

The hash would be calculated on the following string:

appleM000032A00000001100MYR1

The resulting has signature value equals to (using SHA1 algorithm)

MELU5sSgpBrmc2D6REjfrqUjplk=

To ensure the signature generated was correct, visit the link below for signature comparison.

http://www.mobile88.com/epayment/testing/testsignature_response.asp

When iPay88 receives the request or transaction order from the merchant, it will check the hash value it generates match with the value you as a merchant have included. When your script receives the results of the transaction, you can create the hash on your side and be sure that matches ours. As you will already know your key and the Merchant Code, and will receive the Ref No as presented to us. Do take note that the signature in the response will only be present if the transaction is not in error, that is, for approved and declined transactions.

A developer would then take the results of the transaction AFTER it has been returned to your site, and run the hash algorithm on the fields mentioned above. The only way that the results of a developer's procession can match the signature included with the transaction results is if the password used in the hash on the developer's end MATCHES the one used in the transaction.

The iPay88 key is a shared secret (between you and iPay88), and is one of the key pieces of information in the hash. One can be assured that if the signature generated on your end matched the one sent with the transaction, then the transaction has in fact been processed by our system, and has not been posted back to the merchant's server from any other location.

The iPay88 key is generated by us that it's send to you. The key will only recreate if iPay88 suspects that the key is not secure or any fraud cases happen. More information about the SHA1 hash algorithm, including sample implementation code, can be found in [RFC 3174](#) in [The Internet Engineering Task Force](#) web site.

Using .NET you can use the available libraries to perform this:

```
Public Shared Function ComputeHash(ByVal Key As String) As String
    Dim objSHA1 As New SHA1CryptoServiceProvider()
    objSHA1.ComputeHash(system.Text.Encoding.UTF8.GetBytes(Key.ToCharArray))
)
    Dim buffer() As Byte = objSHA1.Hash
    Dim HashValue As String = System.Convert.ToBase64String(buffer)

    Return HashValue
End Function
```

Using PHP you can use the following code to perform this:

```
<?PHP
function iPay88_signature($source)
{
    return base64_encode(hex2bin(sha1($source)));
}

function hex2bin($hexSource)
{
    for ($i=0;$i<strlen($hexSource);$i=$i+2)
    {
        $bin .= chr(hexdec(substr($hexSource,$i,2)));
    }
    return $bin;
}
?>
```

** Sample code can be find in the sample code folder include*

- *ASP*
- *VB.Net*
- *PHP*
- *Javascript*

You may utilize the web service at <http://mobile88.com/ePayment/Security/Security.asmx> to fit into your system

1.2 Reports

1.2.1 Objective

Allow merchants to login and view the reports online

1.2.2 Transaction Processing Step

Step 1. Merchant can visit iPay88 report page by keying-in :

- Login
- Password

Step 2. After login, select transaction date

Step 3. The payment transaction report will display on the screen.

1.2.3 URL and Account Detail

Report URL : <http://www.mobile88.com/ePayment/report>

Login : [Login]

Password : [provided by iPay88]

1.2.4 Customer Payment Receipt Email

Customers will receive a payment detail's email immediately after successful payment.
Below is the email sample:

Subject: iPay88 - Payment details (Ref# T0009378700) **Date:** Thu, 26 Jan 2009 09:59:30 GMT
From: iPay88 Sales (sales@ipay88.com.my)
To: John Tan (john@hotmail.com)

I & J Boutique

Dear John Tan,

We are pleased to inform you that your online payment via **iPay88** is successful. Your credit card/bank account has been debited with **RM 1.00**.

Please note that **Mobile88.com** will be listed in your credit card/bank statement for this transaction.

Transaction Detail

Purchase from: I & J Sdn Bhd
Ref No: A00000001
Transaction ID: T0009378700
Transaction Date: 26-1-2006 09:59:30 AM
Transaction Amount: RM 1.00
Payment Type: Credit Card
Product Description: Photo Print

Customer Support

If you have any questions about our product and services, please contact I & J Sdn Bhd directly at :
Tel No: 603-9999 0000
Fax No: 603-9999 0001
Email: support@i&j.com

Please do not reply to this email as it was automatically generated.

If you found any fraudulent cases, please contact ipay88.com Sdn Bhd immediately at

Tel: 603-9200 5555
Fax: 603-9200 3333
Email: support@ipay88.com.my

***iPay88 is an Online Payment Switching Gateway provided by Mobile88.com Sdn Bhd. For more information, please visit www.ipay88.com**



1.2.5 Merchant Payment Notification Email

Merchant will also receive a payment notification email immediate after successful payment.

In order to ensure you are able received all our mail; do make sure you proceed with the following steps:

- From your mailbox, please white-list our mail address by adding **sales@ipay88.com** into your friend list.
- Also, please make sure your mailbox has not blacklisted our address which is the following **sales@ipay88.com**.
- Allow us to serve you better by white listing our email address and domain **iPay88.com**. Please verify or allow your technical personnel (at the webhosting or email server) to verify the status of your email.

Below is the email sample:

Subject: Mobile88 - Payment details (Ref# A00000001) **Date:** Thu, 26 Jan 2006 09:59:30 GMT
From: Mobile88 Support (sales@mobile88.com)
To: ABC Admin (admin@abc.com)

Dear I & J Admin,

RefNo : A00000001

One new payment has been collected for ABC Sdn Bhd.

Please check the payment report at [iPay88 Online Report](#)

Customer Detail

Name : Ali
Email : ali@hotmail.com
Contact : 0392005555

Transaction Detail

Payment ID : T0009378700
Payment Date Time : 26-1-2006 09:59:30 AM
Payment Amount : RM 1.00
Payment Type : Credit Card
Product Description : Photo Print
Remark :

Sincerely,
Your iPay88 Team

Tel: 603-92005555
Fax: 603-92003333
Email: support@ipay88.com.my

2.0 iPay88 Integration FAQs

1. Where can I get iPay88 technical specification or API?

You can download it from here http://blog.ipay88.com/?page_id=503

2. Where can I get the payment modules for common shopping cart?

You can download it from here http://blog.ipay88.com/?page_id=491

3. How do I pass the parameters to iPay88?

Please use HTTP POST method.

4. What information do I provide to iPay88 before the integration of a merchant account?

Please provide both the Request and Response URLs' of merchant website.

5. What are the request and response URLs'?

Request URL is page at merchant website that passes in iPay88 parameters to request payment page.

Response URL is a page at merchant website that accepts payment status from iPay88 after transaction.

6. How do I perform a payment testing during the integration stage?

You can use any valid credit card for integration purpose. Details required are the credit card number, expiry date, CVV number and the card holder's name.

7. What transaction amount do I use for payment test?

Please use the following amount for the respective currency code.

Currency Code	Amount
MYR	1.00
USD	1.00
AUD	1.00
CAD	1.00
EUR	1.00
GBP	1.00
SGD	1.00
HKD	2.50
IDR	3000.00
INR	15.00
PHP	15.00
THB	15.00
TWD	15.00

8. What if I get error message and never reach iPay88 payment page?

Below are the common error messages returned and its respective description:

ERROR MESSAGE	DESCRIPTION
Duplicate reference number	Do not reuse Reference Number that previously payment success for transaction.
Invalid merchant code	The merchant code does not exist.
Invalid parameters	Some parameter posted to iPay88 is invalid or empty.
Overlimit per transaction	You exceeded the amount value per transaction that assigned to merchant account.
Payment not allowed	The Payment method you requested is not allowed for this merchant account.
Permission not allow	Please ensure the Referrer URL is same as those registered with iPay88.
Signature not match	Make sure Signature on request page is generated accordingly. Please refer page 14 in iPay88 Technical Specification for more information about Signature for request page. Click here to download the document.
Status not approved	Merchant account was suspended or not active.

9. Why do I get ‘The return page URL not exist’ message display on web browser and did not see iPay88 payment page?

Please use correct merchant code assigned to merchant and provides the Request URL to integration@ipay88.com.my before the integration.

10. How do I ensure the integration is completed?

- a) Make sure parameters are properly passed to iPay88 and will be able reach iPay88 payment page.
- b) Make sure implemented security control on the merchant response page. Example:
 - Compare the Signature from iPay88 with the generated merchant response page.

11. How can I change the merchant information such as URL, contact number, company name and bank account number?

Please send an email to support@ipay88.com.my to request for these changes.

12. What not to do after press “Proceed Payment” button at iPay88 payment page?

- a) Do not disconnect Internet.
- b) Do not closes web browser while transaction being process.
- c) Do not click “Back” button on web browser to avoid duplicate payment.

13. I am getting error description “Fail (Card issuing bank do not honor the transaction)” returned by iPay88, what does it mean?

Please contact credit card issuer bank to check whether the card can be use for online purchases.

14. Is there any function from iPay88 where I can query payment status if my system did not get payment status return from iPay88?

You can use the iPay88 Server Requery function to query our database for transaction status.

Please refer **page 10 to 12** in iPay88 Technical Specification for more information about Signature for request page. [Click here](#) to download the document.
