



IFMB Multibanco Payments

How to calculate Portuguese Multibanco References for IFMB



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IFMB – Multibanco Payments

In Portuguese Multibanco System there are 3 sets of digits used by the client to make payment: Entity, Reference and Value.

Example:

Pagamento por Multibanco	Multibanco Payments
Entidade: 10559	Entity: 10559
Referência: 497 000 163	Reference: 497 000 163
Valor: 234,67	Value: 234,67
O talão emitido pelo caixa automático faz prova de pagamento. Conserve-o.	The ticket printed by Multibanco provides proof of payment. Keep it.

This elements must be showed in the web site when the customer select “Multibanco” as payment method and/or sending to customer e-mail (along with details order by example).

Note: The Multibanco System only can be use in Portugal, in ATM Terminals or Home Banking, or in other countries in Home Banking with Portuguese accounts. Almost everyone in Portugal uses the Multibanco cards.

Entity

The entity is a 5 digits number (10559 in case of IFTHEN).

Value

This is the total amount for payment.

The maximum allowed by Multibanco is 999 999,99 €

Reference

The reference is a 9 digits number calculated as follow:

SSSDDDDCC

where

SSS: three digits for sub-entity (this three digits are given by Ifthen and identifies you to us)

DDDD: four digits that identifies the order number or customer number as preferred (this four digits will allow you to identify the order or the client that make the payment). If the order/customer number have more than 4 digits you need to truncate to 4 most right; if have less 4 digits you need to fill with zero in the left;

CC: two check-digits. This check-digits need to be calculated as follow in next section and are used to the Multibanco ATM checks if the payments data is correct to prevent user typing mistakes. If the check-digits fail the Multibanco displays an error.

In our example:

497 is the sub-entity code;

0001 is the number of order or customer number;

63 is the check-digits.

How to calculate the chek-digits

1. Concatenate in a string: the 7 first digits of the reference + the 8 digits of the value (with 2 decimal places, but without decimal and thousands separator (fill with zeros on the left if less than 8 digits).

In our example will be: 497000100023467

2. Using the string above, do the following calculation:

```
Temp_result=
923 +
3 x    digit 15 +
30 x   digit 14 +
9 x    digit 13 +
90 x   digit 12 +
27 x   digit 11 +
76 x   digit 10 +
81 x   digit 9  +
34 x   digit 8  +
49 x   digit 7  +
5 x    digit 6  +
50 x   digit 5  +
15 x   digit 4  +
53 x   digit 3  +
45 x   digit 2  +
62 x   digit 1
```

In our example: $\text{temp_result} = 923 + 3 \times 7 + 30 \times 6 + 9 \times 4 + 90 \times 3 + 27 \times 2 + 76 \times 0 + 81 \times 0 + 34 \times 0 + 49 \times 1 + 5 \times 0 + 50 \times 0 + 15 \times 0 + 53 \times 7 + 45 \times 9 + 62 \times 4 = 2557$

$\text{Result} = 98 - (\text{temp_result} \bmod 97)$ where *mod* is the remainder of integer division

In our example: $\text{Result} = 98 - (2557 \bmod 97) = 98 - 35 = 63$

The two check-digits is 63

Note: if the result returns less than 10 you will need to fill with a left zero to have two digits.

Testing the References

IFTHEN offers a small application you can use to check your references or to create references. We also offers examples of PHP, Visual Basic, #C functions to calculate chek-digits. (Download in <http://www.ifthensoftware.com/downloads/ifmb/ifmultibanco.zip>)

More informations

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