
US Duties Estimator

Import Duties & Processing Fee Calculator for Magento 2

USER GUIDE

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Magento 2.4.7+ / PHP 8.1+

QKits Electronics — Kingston, Ontario, Canada
modules.qkits.com | support@qkits.com

Table of Contents

1. Overview
2. How It Works
3. What Your Customers See
4. Processing Fee Explained
5. Duty Calculation Explained
6. Managing Tariff Rates
7. Setting Up Your Products
8. Admin Order Creation
9. PayPal Compatibility
10. Frequently Asked Questions

1. Overview

The **US Duties Estimator** automatically calculates and applies estimated US import duties and processing fees to orders shipping to the United States. It is designed for Canadian retailers who ship cross-border and need to collect customs-related costs at checkout rather than surprising customers with unexpected charges upon delivery.

Key Features

- **Automatic duty calculation** — based on each product's Country of Manufacture attribute
- **Configurable tariff rates** — set different rates per country with an easy admin interface
- **Tiered processing fee** — scales with cart value using a customizable formula
- **PayPal compatible** — fees are added as virtual product line items, not hidden surcharges
- **US-only activation** — duties apply only when the shipping address is in the United States
- **Admin order support** — works for phone orders placed through the Magento admin panel
- **Debug logging** — detailed calculation logs for troubleshooting

2. How It Works

The module activates during Magento's quote totals collection process. Here is the flow:

- 1. Country Check** — When a customer enters or updates their shipping address, the module checks if the destination country is the United States. If not, no fees are applied.
- 2. License Validation** — The module confirms a valid license key is configured. If invalid, duty calculation is silently disabled with no impact on the customer experience.
- 3. Subtotal Calculation** — The module calculates the taxable subtotal by summing the row totals of all physical products, excluding its own fee products and any virtual/downloadable items.
- 4. Processing Fee** — A tiered processing fee is calculated based on the cart subtotal.
- 5. Duty Calculation** — Each physical product's Country of Manufacture is looked up, the matching tariff rate is applied, and the total duty is summed across all items.
- 6. Line Item Injection** — Two virtual products are added to (or updated in) the cart: one for the processing fee and one for the calculated duty amount.

If a customer changes their shipping address to a non-US country, the fee products are automatically removed from the cart.

3. What Your Customers See

When a US-bound order qualifies for duties, two additional line items appear in the cart and checkout. These look like regular products to the customer and to payment gateways.

Example Cart View

Product	Qty	Price	Subtotal
Arduino Uno R3 (Made in Italy)	1	\$25.00	\$25.00
Raspberry Pi 5 (Made in China)	1	\$80.00	\$80.00
Processing Fee	1	\$7.00	\$7.00
Duty AMT (China 145%, Italy 20%)	1	\$121.00	\$121.00

The **Duty AMT** label automatically includes a breakdown showing which countries and rates contributed to the total. This transparency helps customers understand the charges.

Both the processing fee label and the duty label prefix can be customized in the admin configuration. The country breakdown parenthetical is always appended automatically.

4. Processing Fee Explained

The processing fee represents the brokerage and handling costs associated with US customs clearance. It uses a tiered formula that scales with order value:

$$\text{Processing Fee} = \text{Base Fee} + \text{ceil}((\text{Subtotal} - \text{Threshold}) / \$10) \times \text{Increment}$$

With the default settings (Base Fee = \$5.00, Threshold = \$30.00, Increment = \$0.25 per \$10):

Cart Value	Above Threshold	Increments	Processing Fee
\$15.00	N/A (below \$30)	0	\$5.00
\$30.00	\$0.00	0	\$5.00
\$45.00	\$15.00	2 (rounds up)	\$5.50
\$75.00	\$45.00	5	\$6.25
\$100.00	\$70.00	7	\$6.75
\$200.00	\$170.00	17	\$9.25

Only physical products contribute to the subtotal used for fee calculation. Virtual products, downloadable products, and the fee products themselves are excluded.

5. Duty Calculation Explained

Duty is calculated per product based on the **Country of Manufacture** attribute. For each physical item in the cart, the module:

1. Reads the product's Country of Manufacture attribute
2. Looks up the tariff rate configured for that country
3. If no country is set, or no rate exists for the country, applies the Default Tariff Rate
4. Calculates: $\text{Item Duty} = \text{Row Total} \times (\text{Tariff Rate} / 100)$
5. Sums all item duties to get the total duty amount

Example with Multiple Countries

Product	Country	Row Total	Rate	Duty
Resistor Kit	China	\$12.00	145%	\$17.40
Arduino Mega	Italy	\$55.00	20%	\$11.00
Jumper Wires	(not set)	\$5.00	145% (default)	\$7.25

Total Duty: \$35.65 — shown as Duty AMT (China 145%, Italy 20%, Unspecified 145%)

6. Managing Tariff Rates

Tariff rates are managed in **Stores** → **Configuration** → **QKits** → **US Duties Estimator** → **Tariff Rates by Country of Manufacture**.

Adding a New Country Rate

1. Click the **"Add Country Rate"** button
2. Select the country from the dropdown (priority countries appear at the top)
3. Enter the tariff rate as a percentage (e.g., 25 for 25%)
4. Click **Save Config**

Default Rate: The Default Tariff Rate (%) field sets the rate used for products whose Country of Manufacture is not set or not in the country-specific table. With the default configuration, this is 145%.

Rates can be configured at the default, website, or store view scope. This allows different tariff rates for different store views if needed.

7. Setting Up Your Products

For the most accurate duty calculations, set the **Country of Manufacture** attribute on every physical product in your catalog.

Where to Set Country of Manufacture

In the Magento admin, edit any product and scroll to the product details section. The **Country of Manufacture** dropdown is a standard Magento attribute and appears in the default attribute set.

Products without a Country of Manufacture will use the Default Tariff Rate. If the default rate is set to 0%, those products will have no duty applied.

Products Excluded from Duty

- **Virtual products** — digital goods have no customs duty
- **Downloadable products** — same as virtual, no physical import
- **Fee products** — the module's own US-DUTIES-PROCESSING and US-DUTIES-DUTY SKUs are excluded
- **Child items** — for configurable and bundle products, only the parent is evaluated

8. Admin Order Creation

The module fully supports orders placed through the Magento admin panel (e.g., phone orders). Duties are automatically recalculated when:

- A US shipping address is set or changed
- The shipping method is selected or changed
- Cart items are added, removed, or quantities updated

No special action is required by the admin user. The fee products will appear as line items in the admin order creation form just as they do on the frontend checkout.

9. PayPal Compatibility

The module was specifically designed for PayPal compatibility. Unlike surcharge or fee-based approaches, this module adds fees as virtual product line items. This means:

- PayPal receives itemized line items that sum correctly to the order total
- No "Amount mismatch" errors during PayPal checkout
- Fees appear transparently in PayPal receipts and transaction history
- Compatible with PayPal Standard, PayPal Commerce Platform (PPCP), and Payflow Pro

The module sets custom prices using all three required methods (`setCustomPrice`, `setOriginalCustomPrice`, and `setIsSuperMode`) to ensure PayPal processes the correct amounts.

10. Frequently Asked Questions

Q: Are the duty amounts exact?

No, they are **estimates**. Actual duties are determined by US Customs and Border Protection based on HTS codes, trade agreements, and current regulations. This module provides a reasonable approximation to avoid customer sticker shock at delivery.

Q: Can I use different rates for different store views?

Yes. All configuration settings support the default/website/store view scope hierarchy. You can configure different tariff rates for different store views.

Q: What happens if a customer changes their country during checkout?

The module recalculates on every quote totals collection. If the customer switches to a non-US address, the fee products are automatically removed. If they switch back to a US address, fees are recalculated and re-added.

Q: Does the module make any external API calls?

No. All calculations are performed locally within your Magento installation. License validation is also local (format check only). No data is sent to QKits or any third party.

Q: Can I customize which products are subject to duties?

The module calculates duties on all physical products. You can effectively exclude products by setting their Country of Manufacture to a country with a 0% tariff rate, or by not setting a Country of Manufacture when the default rate is 0%.

Q: Will this work with my custom checkout?

The module hooks into Magento's standard quote totals collection events. If your custom checkout uses Magento's standard quote and totals API, the module should work without modifications.

Q: How do I update tariff rates when they change?

Simply update the rates in the admin panel under the Tariff Rates configuration group. Changes take effect immediately after saving (and clearing cache if Full Page Cache is enabled).

Need Help?

Email: support@qkits.com

Web: modules.qkits.com

Module updates and documentation are available at modules.qkits.com