



CTS User Guide

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1. Introduction

The Card Transaction Service (CTS) helps you to integrate your systems with the GPS Apex authorization system. The service is written as SOAP and REST service and enables you to submit card test transactions in the UAT environment in line with your program setup. All input parameters are simple (string or numeric), making integration and testing simple and fast.

1.1. Pre-requisites

To access CTS, you need the following:

- Have your IP address(s) whitelisted if different to web services IP address(s)
- Your program setup in UAT
- A username and password (you can use the same credentials which you use to access [Smart Client](#) UAT with CTS enabled)
- EHI setup at product level

To submit test transactions, you need the following:

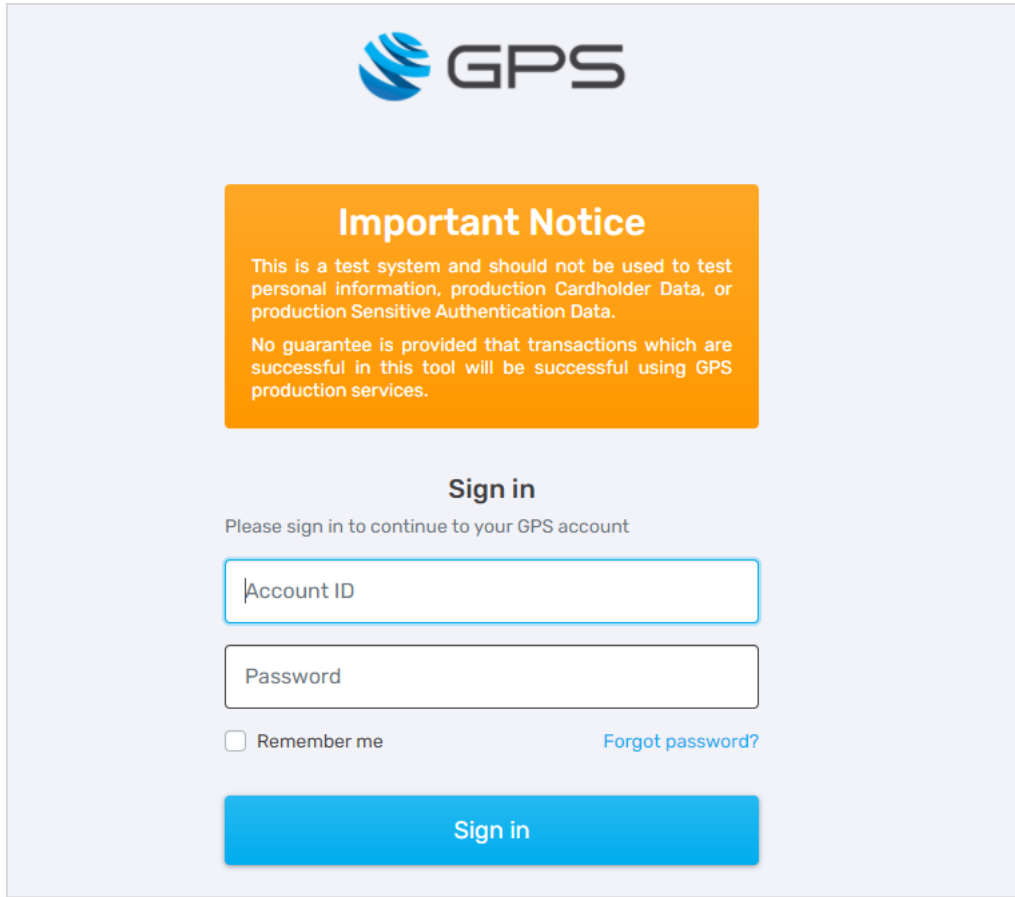
- Cards created, activated and has available balance
- 9-digit token, CVV2, *PIN** and Expiry Date (provided in the [Ws_CreateCard](#) web service response)

Note: If PIN is not stipulated in the [Ws_CreateCard](#) web service, you can use [Ws_PINControl](#) to set the PIN.

1.2. Logging in to CTS

You can access CTS at: <https://cts-uat.globalprocessing.net:54340/>

The login screen appears:



The login screen features the GPS logo at the top. Below it is an orange box with the heading "Important Notice" and two paragraphs of text. The first paragraph states that the system is a test environment and should not be used for production data. The second paragraph states that successful transactions in the tool may not be successful in production. Below the notice is a "Sign in" section with the instruction "Please sign in to continue to your GPS account". It contains two input fields for "Account ID" and "Password", a "Remember me" checkbox, a "Forgot password?" link, and a blue "Sign in" button.

Important Notice

This is a test system and should not be used to test personal information, production Cardholder Data, or production Sensitive Authentication Data.

No guarantee is provided that transactions which are successful in this tool will be successful using GPS production services.

Sign in

Please sign in to continue to your GPS account

Account ID

Password

☐ Remember me [Forgot password?](#)

Sign in

Figure 1: GPS Login Screen

Note: If you try to access the URL and see the message “**This site can’t be reached**”, this means that your IP address is not whitelisted on our system.

1.3. Viewing the CTS Dashboard

Once successfully logged into the CTS platform you can view the tests available:

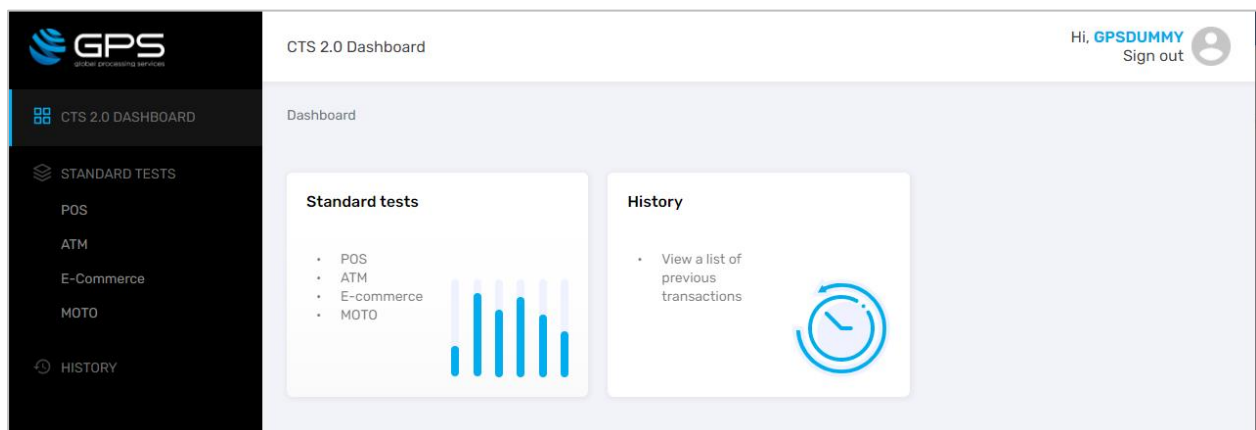


Figure 2: CTS Dashboard

2. Running Standard Tests

You can carry out several types of simulation tests on CTS:

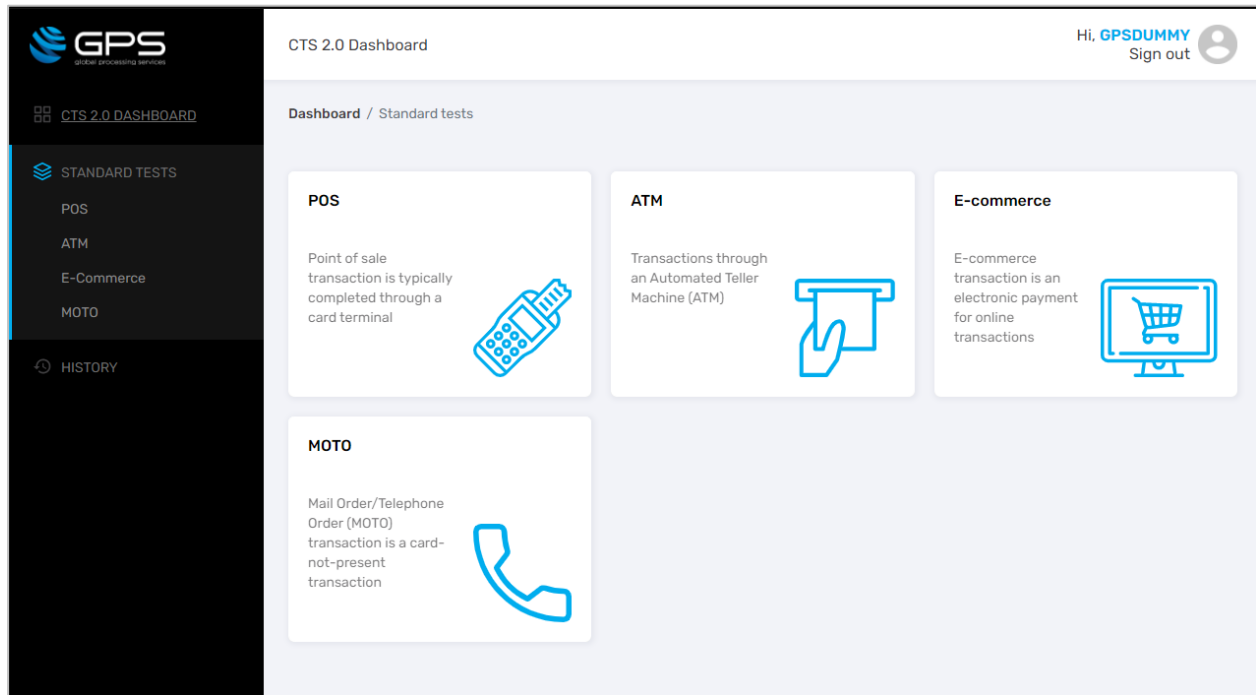


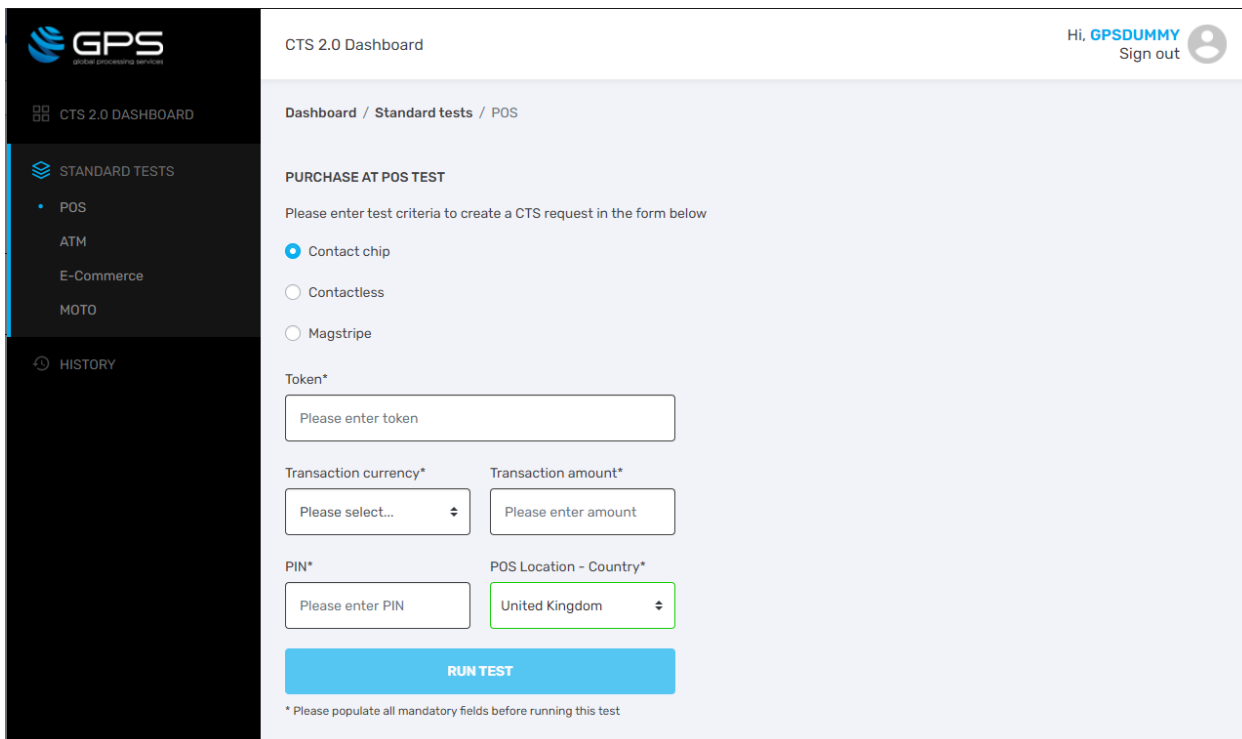
Figure 3: Standard Tests Screen

Click the icon of the simulation test you want to run. The following tests are available:

- **POS** - simulates a Point of sale transaction completed through a card terminal
- **ATM** – simulates a balance enquiry or cash withdrawal transaction made on an Automated Teller Machine (ATM)
- **MOTO** – simulates a Mail Order/Telephone Order (MOTO) transaction
- **E-Commerce** – simulates an online, e-commerce transaction

2.1. POS Transaction Test

You can use this test to simulate a Point of Sale (POS) transaction on a card terminal.



The screenshot shows the GPS CTS 2.0 Dashboard. On the left is a dark sidebar with the GPS logo and navigation links: CTS 2.0 DASHBOARD, STANDARD TESTS (with sub-links for POS, ATM, E-Commerce, and MOTO), and HISTORY. The main content area is titled 'CTS 2.0 Dashboard' and shows the user 'Hi, GPSDUMMY' with a 'Sign out' button. Below the breadcrumb 'Dashboard / Standard tests / POS', the section is titled 'PURCHASE AT POS TEST'. It instructs the user to 'Please enter test criteria to create a CTS request in the form below'. There are three radio button options: 'Contact chip' (selected), 'Contactless', and 'Magstripe'. Below these are five input fields: 'Token*' (text box), 'Transaction currency*' (dropdown), 'Transaction amount*' (text box), 'PIN*' (text box), and 'POS Location - Country*' (dropdown showing 'United Kingdom'). A blue 'RUN TEST' button is at the bottom. A small note at the very bottom states: '* Please populate all mandatory fields before running this test'.

Figure 4: POS Transaction Test Screen

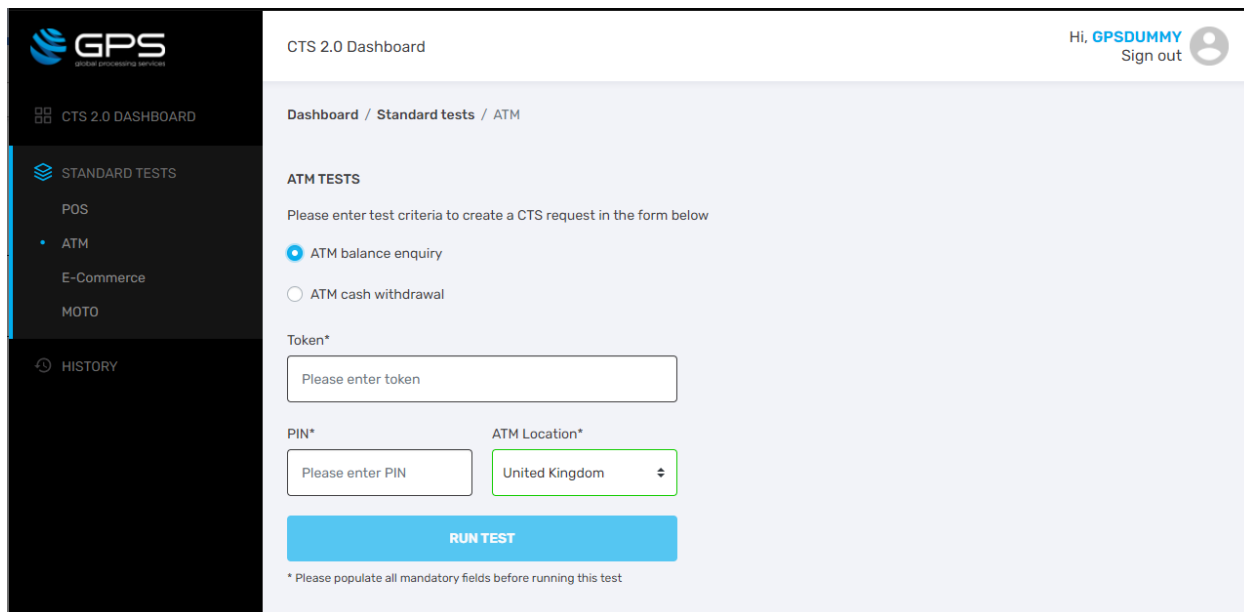
1. Select the card element being tested:
 - Contact chip
 - Contactless
 - Magstripe
2. Enter the 9-digit **Token**, **Transaction currency**, **Transaction amount**, card **PIN** and **POS Location (Country)**.

Note: If the transaction currency is different to the billing currency of the card then GPS will provide the transaction amount according to the exchange rate.

3. Click **Run Test**.

2.2. ATM Transaction Test

You can use this test to simulate an ATM Balance enquiry or cash withdrawal at an ATM location.



The screenshot shows the CTS 2.0 Dashboard interface. On the left is a dark sidebar with the GPS logo and navigation links: CTS 2.0 DASHBOARD, STANDARD TESTS (with sub-links for POS, ATM, E-Commerce, and MOTO), and HISTORY. The main content area is titled 'CTS 2.0 Dashboard' and shows the user 'Hi, GPSDUMMY' with a 'Sign out' button. The breadcrumb trail is 'Dashboard / Standard tests / ATM'. Under 'ATM TESTS', there are two radio buttons: 'ATM balance enquiry' (selected) and 'ATM cash withdrawal'. Below these are three input fields: 'Token*' (a text box with placeholder 'Please enter token'), 'PIN*' (a text box with placeholder 'Please enter PIN'), and 'ATM Location*' (a dropdown menu showing 'United Kingdom'). A blue 'RUN TEST' button is at the bottom. A footnote at the bottom left states: '* Please populate all mandatory fields before running this test'.

Figure 5: ATM Transaction Test Screen

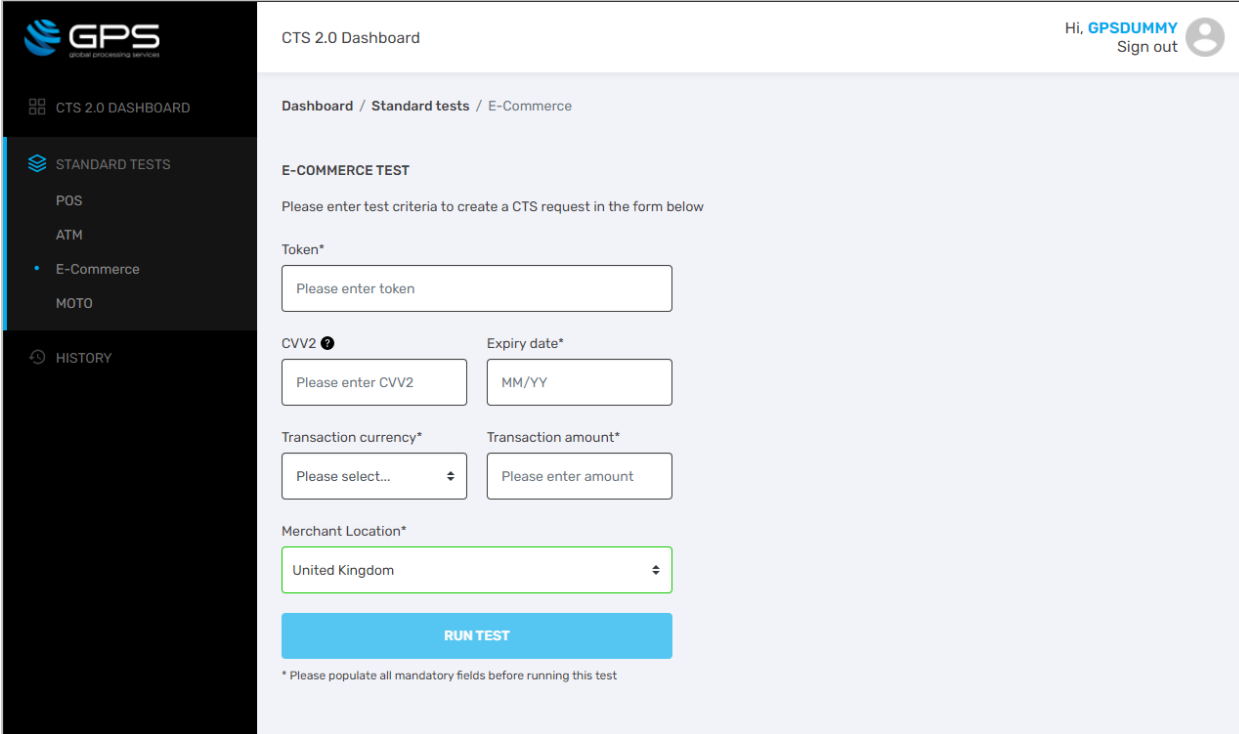
1. Select the ATM element being tested:
 - ATM balance enquiry
 - ATM cash withdrawal
2. Enter the 9-digit **Token**, **Transaction currency**, **Transaction amount**, card **PIN** and **ATM Location** (Country).

Note: If the transaction currency is different to the billing currency of the card then GPS will provide the transaction amount according to the exchange rate.

3. Click **Run Test**.

2.3. E-commerce Transaction Test

You can use this test to simulate an e-commerce transaction made through an online website.



The screenshot shows the 'E-COMMERCE TEST' form in the CTS 2.0 Dashboard. The left sidebar contains navigation links: CTS 2.0 DASHBOARD, STANDARD TESTS (with sub-links for POS, ATM, E-Commerce, and MOTO), and HISTORY. The main content area is titled 'E-COMMERCE TEST' and includes a sub-header 'Dashboard / Standard tests / E-Commerce'. Below this, it says 'Please enter test criteria to create a CTS request in the form below'. The form fields are: 'Token*' (text input), 'CVV2*' (text input with a help icon), 'Expiry date*' (text input with a placeholder 'MM/YY'), 'Transaction currency*' (dropdown menu), 'Transaction amount*' (text input), and 'Merchant Location*' (dropdown menu showing 'United Kingdom'). A blue 'RUN TEST' button is at the bottom. A note at the bottom states: '* Please populate all mandatory fields before running this test'.

Figure 6: E-Commerce Transaction Test Screen

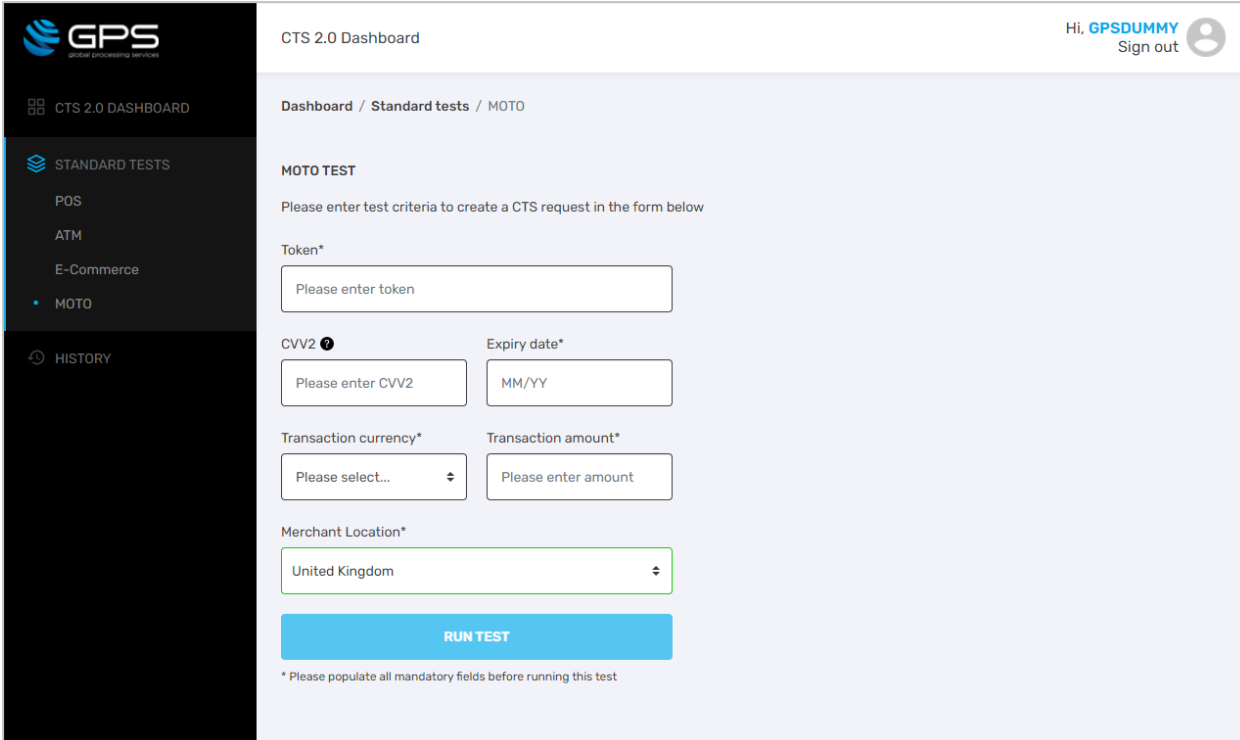
1. Enter the 9-digit **Token**, the cards' **CVV2** (if required) and the card **Expiry date**.
2. Enter the **Transaction currency**, **Transaction amount**, and **Merchant Location** (Country).

Note: If the transaction currency is different to the billing currency of the card then GPS will provide the transaction amount according to the exchange rate.

3. Click **Run Test**.

2.4. MOTO

You can use this test to simulate a Mail and Telephone Order (MOTO) transaction, which is a payment made over the telephone (e.g., via a Call centre) or via a mail order catalogue.



The screenshot shows the GPS CTS 2.0 Dashboard. On the left is a dark sidebar with the GPS logo and navigation links: CTS 2.0 DASHBOARD, STANDARD TESTS (with sub-links for POS, ATM, E-Commerce, and MOTO), and HISTORY. The main content area is titled 'CTS 2.0 Dashboard' and shows the user 'Hi, GPSDUMMY' with a 'Sign out' link. The breadcrumb trail is 'Dashboard / Standard tests / MOTO'. The 'MOTO TEST' section contains the instruction 'Please enter test criteria to create a CTS request in the form below'. The form fields are: 'Token*' (text input), 'CVV2*' (text input), 'Expiry date*' (text input with MM/YY format), 'Transaction currency*' (dropdown menu), 'Transaction amount*' (text input), and 'Merchant Location*' (dropdown menu showing 'United Kingdom'). A blue 'RUN TEST' button is at the bottom. A note at the bottom states: '* Please populate all mandatory fields before running this test'.

Figure 7: MOTO Transaction Test Screen

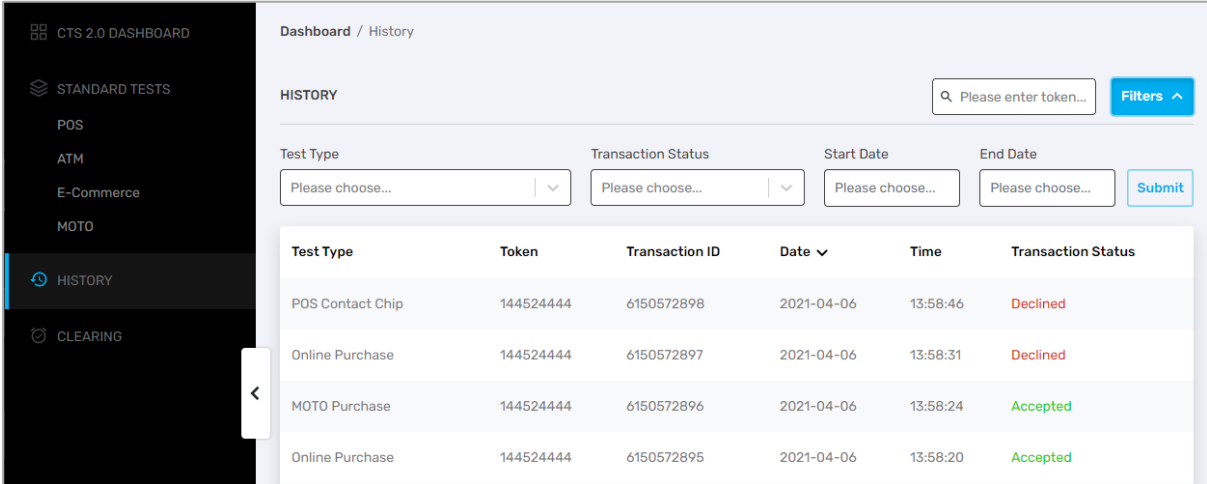
1. Enter the 9-digit **Token**, the cards' **CVV2** (if required) and the card **Expiry date**.
2. Enter the **Transaction currency**, **Transaction amount**, and **Merchant Location** (Country).

Note: If the transaction currency is different to the billing currency of the card then GPS will provide transaction the amount according to the exchange rate.

3. Click **Run Test**.

3. Transaction History

The History screen displays a list of all the transactions made using CTS.



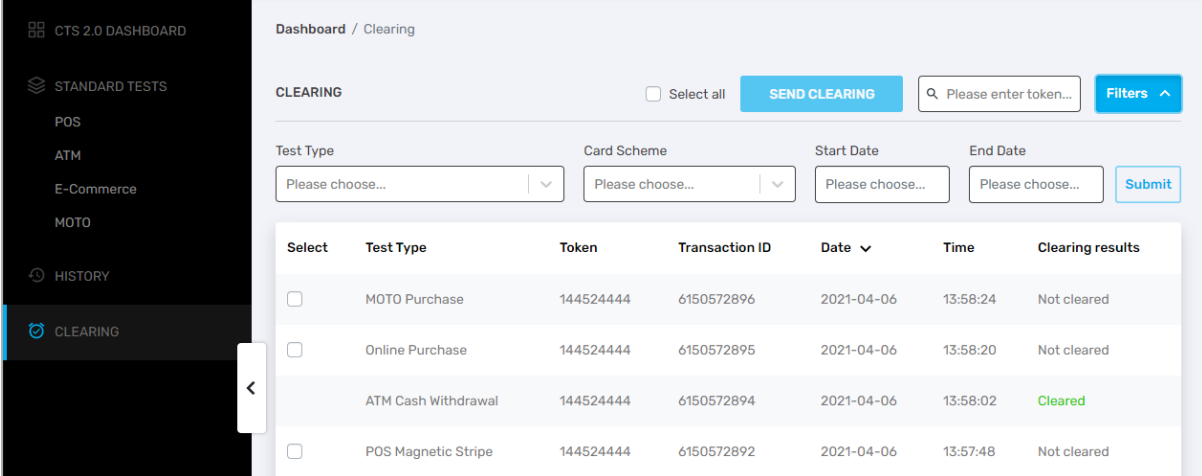
Test Type	Token	Transaction ID	Date	Time	Transaction Status
POS Contact Chip	144524444	6150572898	2021-04-06	13:58:46	Declined
Online Purchase	144524444	6150572897	2021-04-06	13:58:31	Declined
MOTO Purchase	144524444	6150572896	2021-04-06	13:58:24	Accepted
Online Purchase	144524444	6150572895	2021-04-06	13:58:20	Accepted

Figure 8: History Screen

You can use the filter options to help refine the list of transactions.

4. Clearing

The Clearing screen displays a list of all eligible transactions made using CTS that can be cleared to simulate the financial presentment transaction.



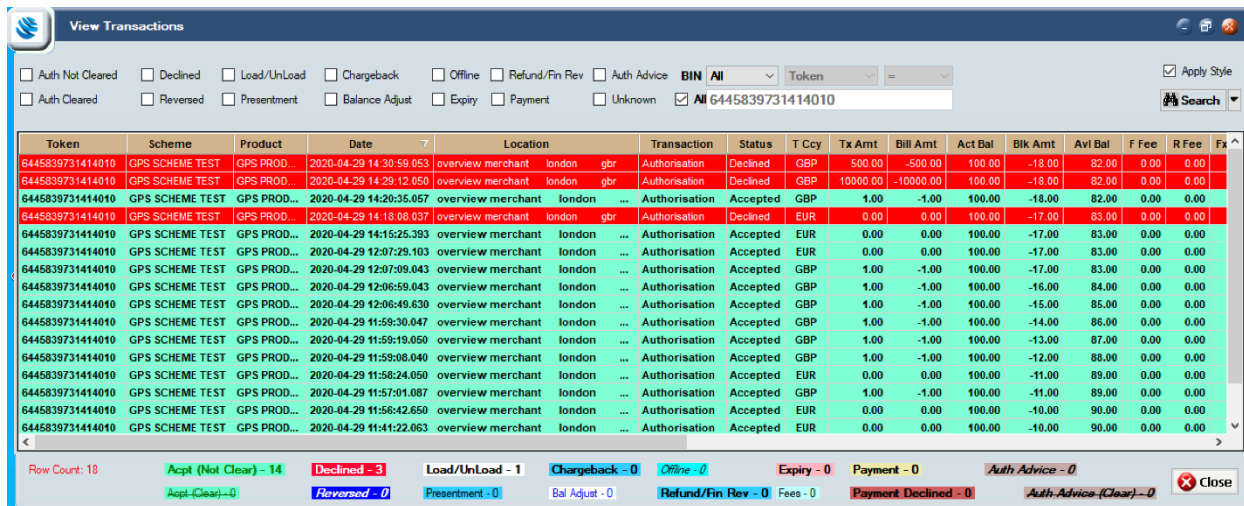
Select	Test Type	Token	Transaction ID	Date	Time	Clearing results
<input type="checkbox"/>	MOTO Purchase	144524444	6150572896	2021-04-06	13:58:24	Not cleared
<input type="checkbox"/>	Online Purchase	144524444	6150572895	2021-04-06	13:58:20	Not cleared
<input type="checkbox"/>	ATM Cash Withdrawal	144524444	6150572894	2021-04-06	13:58:02	Cleared
<input type="checkbox"/>	POS Magnetic Stripe	144524444	6150572892	2021-04-06	13:57:48	Not cleared

Figure 9: Clearing Screen

1. You can use the filter options to refine the list of transactions.
2. Using the tick box on the left, select the authorisations you want to clear.
3. Click **Submit**.

5. Smart Client UAT Validation

You can use Smart Client UAT to see the transactions that have taken place on the card by either searching by the 9-digit token or transaction ID provided back in the CTS responses. For details, see the [Smart Client User Guide](#).



View Transactions

☐ Auth Not Cleared
 ☐ Declined
 ☐ Load/UnLoad
 ☐ Chargeback
 ☐ Offline
 ☐ Refund/Fin Rev
 ☐ Auth Advice
 BIN: **All**
 Token:
 ☒ All 6445839731414010

Token	Scheme	Product	Date	Location	Transaction	Status	T Ccy	Tx Amt	Bill Amt	Act Bal	Blk Amt	Avl Bal	F Fee	R Fee	Ex
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 14:30:59.053	overview merchant london gbr	Authorisation	Declined	GBP	500.00	-500.00	100.00	-18.00	82.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 14:29:12.050	overview merchant london gbr	Authorisation	Declined	GBP	10000.00	-10000.00	100.00	-18.00	82.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 14:20:36.057	overview merchant london ...	Authorisation	Accepted	GBP	1.00	-1.00	100.00	-18.00	82.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 14:18:06.037	overview merchant london gbr	Authorisation	Declined	EUR	0.00	0.00	100.00	-17.00	83.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 14:15:25.393	overview merchant london ...	Authorisation	Accepted	EUR	0.00	0.00	100.00	-17.00	83.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 12:07:29.103	overview merchant london ...	Authorisation	Accepted	EUR	0.00	0.00	100.00	-17.00	83.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 12:07:09.043	overview merchant london ...	Authorisation	Accepted	GBP	1.00	-1.00	100.00	-17.00	83.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 12:06:59.043	overview merchant london ...	Authorisation	Accepted	GBP	1.00	-1.00	100.00	-16.00	84.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 12:06:49.630	overview merchant london ...	Authorisation	Accepted	GBP	1.00	-1.00	100.00	-15.00	85.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 11:59:30.047	overview merchant london ...	Authorisation	Accepted	GBP	1.00	-1.00	100.00	-14.00	86.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 11:59:08.040	overview merchant london ...	Authorisation	Accepted	GBP	1.00	-1.00	100.00	-13.00	87.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 11:58:24.050	overview merchant london ...	Authorisation	Accepted	GBP	1.00	-1.00	100.00	-12.00	88.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 11:57:01.087	overview merchant london ...	Authorisation	Accepted	EUR	0.00	0.00	100.00	-11.00	89.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 11:56:42.650	overview merchant london ...	Authorisation	Accepted	EUR	0.00	0.00	100.00	-10.00	90.00	0.00	0.00	
6445839731414010	GPS SCHEME TEST	GPS PROD...	2020-04-29 11:41:22.063	overview merchant london ...	Authorisation	Accepted	EUR	0.00	0.00	100.00	-10.00	90.00	0.00	0.00	

Row Count: 18
 Acpt (Not Clear) - 14
 Declined - 3
 Load/UnLoad - 1
 Chargeback - 0
 Offline - 0
 Expiry - 0
 Payment - 0
 Auth Advice - 0
 Acpt (Clear) - 0
 Reversed - 0
 Presentment - 0
 Bal Adjust - 0
 Refund/Fin Rev - 0
 Fees - 0
 Payment Declined - 0
 Auth Advice (Clear) - 0

Figure 9: Smart Client Transactions Screen

6. Common Errors

The CTS system provides a response each time a transaction is executed. Depending on the information that is sent, the transaction is either *approved* or *declined*. If the transaction is declined the system provides a relevant reason and response code.

For a list of response codes please refer to the [GPS External Host Interface Guide](#).

6.1.1. Transaction timeout

If the system does not receive a response in the required period, a timeout occurs, and a 400 or 500 error is returned. The transaction will show as aborted in the history screen. If this continues please raise a Jira ticket for further investigation.

7. FAQ

Q. What MCC codes are used?

The following Merchant Category Codes (MCC) are used:

- E-commerce: 5734 - Computer Software Stores
- MOTO: 5311 – Department Stores
- POS: 5734 - Computer Software Stores
- ATM: 6011 – Automated Cash Disburse

Q. What merchant name is displayed on the transactions?

The following Merchant names will be displayed:

- E-commerce: e-comm merchant
- MOTO: moto merchant
- POS: Shop with Chip POS
- ATM: offsite ATM

Q. Are PSD2 counter limits validated in CTS?

Currently the CTS system does not validate against any PSD2 counters that may be setup in the system as there are a number of different hosts that can manage these limits.

Q. Are contactless limits validated in the CTS tests?

Due to the contactless limits varying by country, currency and merchant unfortunately CTS will not be able to validate this.

Q. What FX Rate does CTS provide?

If the transaction currency is different to the billing currency of the card GPS will provide an FX transaction based on static values pulled from a database. These rates may not represent the market value.

8. Glossary

This section explains terms used in this document.

Contact chip	Card transaction where the POS terminal reads and validates the card's chip.
Contactless	Secure payment method using a debit or credit card or another payment device by using RFID technology and near-field communication. To use the system, a cardholder taps the payment card near a POS terminal equipped with the technology.
CVV2	The Card Verification Value (CVV) is a 3-digit number on VISA and MasterCard branded credit and debit cards. Cardholder's are typically required to enter the CVV during any online or cardholder not present transactions. CVV numbers are also known as CVV2 numbers, which are the same as CVV numbers, except that they have been generated by a 2nd generation process that makes them harder to guess.
EHI	The GPS External Host Interface (EHI) is a system which provides real-time transactional data and control over your transaction authorisations.
GPS Web Services	GPS's SOAP based Application Program Interface (API) which enables integration of your systems with GPS.
Issuer	The card issuer, typically a financial organisation authorised to issue cards. The issuer has a direct relationship with the relevant card scheme.
Magstripe	The magnetic stripe on the back of the card. Can be used for a card point of sale (POS) transaction using a merchant POS terminal.
Merchant	The shop or store providing a product or service that the cardholder is purchasing. Physical stores use a terminal or card reader to request authorisation for transactions. Online sites provide an online shopping basket and use a payment service provider to process their payments.
Merchant Category Code (MCC)	A unique identifier of the merchant, to identify the type of account provided to them by their acquirer.
MOTO	Mail and Telephone Order (MOTO) transaction, which is a payment made over the telephone (e.g., via a Call centre) or via a mail order catalogue.
POS	Point of Sale transaction.
Smart Client	GPS's user interface for managing your account on the GPS system. Smart Client is installed as a desktop application and requires a VPN connection to GPS systems in order to be able to access your account.

9. Document History

Version	Description	Author	Date
1.0	First version	AW	09/02/2021
1.1	Clearing added	AW	13/04/2021