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OVERVIEW

Smart Forex Tester Suite is advanced software to test trading strategies - both in real-time on live market and offline on historical tick by tick price data. You can use simulators to practice manual trading and test a set of inbuilt automated trading strategies - which you can also live trade via your MT4 client terminal.

The Suite includes a unique generator of real-time market timing signals (**Pivot Points Analyzer**), tick-by-tick graphical trade analyzer and test data preparation tool (**Data Manager**). **Quote Saver** enables you to get high quality historical test data by recording price quotes from all supported real-time data feeds.

Besides testing, the Suite can be used for live trading with our **Automated Trader** that uses timing signals in its inbuilt strategies, as well as a **Trade Copier**.

Trading operations are performed via a MT4 terminal connected to the Suite by a special proxy Expert Adviser. The Suite receives live market data from Metatrader and sends back the signals and trading commands - with a single tick accuracy.

Products

The Suite's rich functionality is divided into independent products that are accessible from the same

GUI. All products use the same functional modules in different combinations, enabled by a software license.

Online Forex Simulator is a free product that streams real-time Forex price data to practice manual trading when the markets are open. Includes **Quote Saver** that stores real-time Forex price quotes to your computer to be used later as the offline test data.

Offline Trading Simulator is a free product that renders locally stored historical tick-by-tick price data to practice manual trading at any time, even when the markets are closed.

Data Manager is a free product that is used to prepare tick by tick historical price data for the back testing and manual trading practice.

Smart Forex Tester Suite is the top-of-the-line premium product that provides all of Simulator features and adds many others, including **Pivot Points Analyzer, Strategy Tester, Automated Trader** and **Trade Copier**.

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Terms and Definitions

Simulation - modeling the markets with the purpose of testing a strategy. Can use market price data from a file or a live price stream from one of the supported real-time market data sources.

Offline - a synonym for back testing, i.e., using historical price data for simulations.

Online - a synonym for forward testing, i.e., using real-time data from a live stream for simulations.

Time Shifting - a technology for pausing/resuming a live data feed during an online simulation.

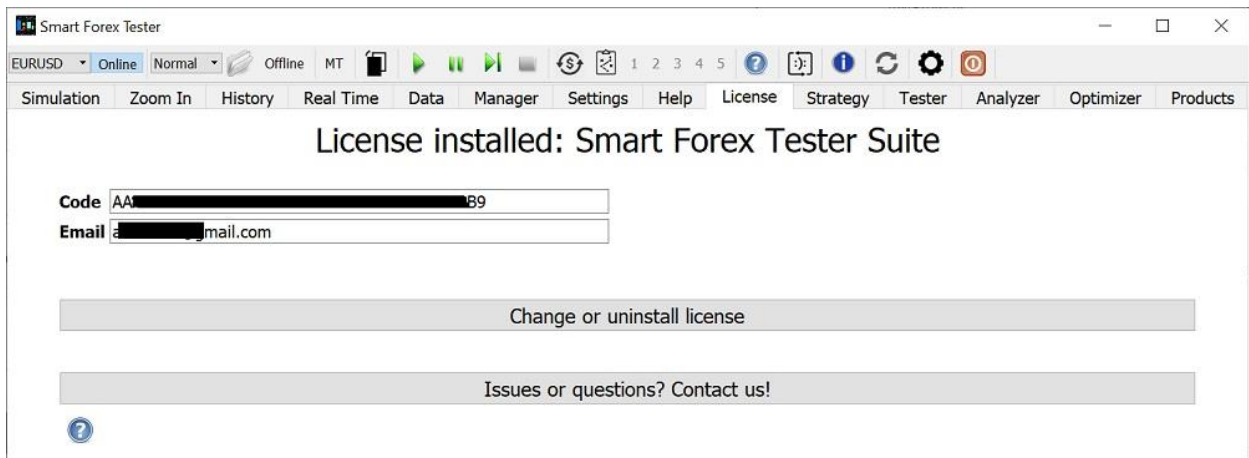
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Licenses

Any product in the Suite requires a software license, which can be free or paid.

Free licenses are obtained and switched directly in the software GUI, on the **Products** tab. Free licenses only require a free subscription. The license key is locked to the email address you subscribed with. Free licenses never expire - as long as you stay subscribed.

Premium licenses are emailed to you after the purchase. To install a premium license, on the **License** tab enter your license code and the email address associated with your payment; then click the **Validate license** button. The license status will change to **installed** and the license type will also be shown. The below screenshot is for the top of the line premium license.



You can uninstall a license of each type by using the **Change or uninstall license** button. Uninstalling is needed when you are upgrading from a free license to a premium one or upgrading a premium license.

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Software Updates

All products check for updates automatically at every start-up. If a newer software version is available, a dialog window will open with the link to the software download page. Also, the **Update** button on the toolbar becomes active; clicking the button will open the same dialog window.

You can also check for updates manually by clicking the **Check now** button on the **Settings** tab.

A new version of the software is installed on top of the existing installation - following the same procedure as if installed from scratch. Remember to **stop the software** before proceeding with updating. Installing updates when the software is running will fail.

Your license is unaffected by installing updates.

NOTE: if you uninstall the software before updating, you will need to install your license again.

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QUICK START

At the first start-up, the software will show the **Products** tab, where all currently available products are listed. To use any free product, click the corresponding **Get Free License** button and enter the email address you subscribed with, then click the **Validate license** button and restart the software when prompted. To switch to another free product, use exactly the same procedure.

To use a premium product, on the **License** tab, enter your license code and the email address where the code was sent, then click the **Validate license** button and restart the software when prompted.

The software is designed to work with different combinations of market data sources (real-time feed or file) and trading modes (manual or automated).

Manual trading is done with Simulators. **Online Simulator** works with real-time data feeds, which are not available when the markets are closed on weekends. On the contrary, **Offline Simulator** can be used anytime, anywhere - because it does not need an Internet connection. Manual Trading operations are performed on the **Simulation** tab.

For **Automated trading**, a set of inbuilt trading strategies is provided on the **Tester** tab. Alternatively, you can develop a strategy of your own, using a full-fledged C++ environment provided on the **Strategy** tab. Any automated strategy can be run both on live data feeds and offline.

Most frequently used data feed control functions like pause or stop are located on the [Toolbar](#). So, they can be accessed at any time from any tab.

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How to get the test data

You can record latest high quality tick by tick data for all 10 main currency pairs provided by TrueFX.com. See the [Quote Saver](#) section for the details. In addition, you can download monthly price quote files for 15 main pairs from TrueFX.com. It is handy to split monthly files into smaller test files with a help of [Data Manager](#).

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How to use Trading Simulator

The first step is selecting the market data to test on. The Simulator supports both **live data feeds** (when the markets are open), or **historical prices** from a **.csv** file.

For online simulations on live market prices, the software provides an inbuilt Forex data feed (TrueFX WebAPI) as well as price importing from a MT4 terminal (via a special proxy EA).

To use the inbuilt feed, click the **Online** button on the Toolbar, and select a currency pair from the drop-down list. If prompted, adjust the account currency (i.e., the currency in which your profit/loss is reported).

To receive ticks from Metatrader, click the **MT** button on the Toolbar, and deploy the proxy EA on a Metatrader chart. The detailed instructions and the link to download the Proxy EA are available on the **Real time** tab (click the **?** button to view).

For offline simulations on historical data, click the **Offline** button on the Toolbar, then click the **File** button and select a file with historical market data. Then select the date and time when to start the test.

NOTE: we also provided an inbuilt test data file. To use it, click the **Load sample data** button.

Once the test data is ready, click the green **Play** button on the Toolbar to start a Simulation. The software will switch to the **Simulation** tab where you can monitor the market and perform your trading operations.

For more details, check the [Trading Simulator](#) section.

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How to use Strategy Tester

The Tester is powered by the same tick data engine as the Simulator, but it only works with automated trading strategies.

1. Select an automated trading strategy from the drop-down list on the **Tester** tab.
2. Prepare the test data. For testing on a single data file, follow the steps outlined in the [How to use the Trading Simulator](#) section. For back testing in batches, you need to load multiple data files; the procedure is described in the [Batch Testing](#) section.
3. Click the green **Play** button on the Toolbar to start a test. Initially, the test will be run at maximum speed, but you can adjust the speed on the fly using the control on the Toolbar.

NOTE: when running a test at maximum speed, avoid showing the tabs with tick graphs (**Simulation** and **Analyzer**) for a long time: it might considerably increase the total test duration.

For more details, check the [Strategy Tester \(Automated trading\)](#) section.

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How to use Automated Trader

After you have launched a simulation from the Tester, you can use the Trader to control a running strategy.

1. Follow the steps of the [How to use Strategy Tester](#) section.
2. Open the **Trader GUI** by clicking the \$ button on the **Toolbar**.
3. Change the trading strategy parameters on the fly, monitor trading statistics and access other real-time strategy related information.

For more details, check the [Automated Trader](#) section.

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How to use Trade Copier

NOTE: you can only use Trade Copier for the currency pairs supported by the TrueFX data feed. Review carefully steps 3 and 4.

1. Click the **Copy** icon on the **Toolbar**.
2. On the **Real time** tab, select either Test or Trade mode.
3. Deploy the MT connector to a chart in your MT4 terminal.
4. Select the same currency pair from the dropdown list on the **Toolbar**.
5. Click on the green **Play** button.

For more details, check the [Trade Copier](#) section.

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GUI

Every product has **Main window** with **Toolbar** and multiple Tabs, each one dedicated to a certain functional area or a product. Depending on the installed license, some controls on each tab may be disabled.

In addition, **Automated Trader** has its own GUI that opens in a separate window when you click the **\$** button on the **Toolbar**. In this GUI, you can change parameters of a running strategy, monitoring trading statistics, etc. It also provides a real-time graphical schedule of trading sessions worldwide.

Toolbar makes the most important controls accessible instantly from any tab.



The controls (left to right) are: currency selector for Online Simulator, speed selector and open file button for Offline Simulator, Metatrader Connector selector, Trade Copier selector, data feed control buttons (play, pause, skip, stop), Automated Trader GUI button, automated strategy activation button, favorite strategies' buttons. In addition, there are help and feedback buttons, software release information and update buttons, and settings button.

Simulation is the main tab, which works as a dashboard. Here you can monitor the market, open and close orders and stops. All market charts and indicator graphs are resizable with the mouse.

Zoom In tab enables analyzing market action and your trades with up to a single tick accuracy.

History tab shows full trading history. In addition, in the bottom pane, internal software logs are printed, which can be used e.g., for debugging your automated trading strategy. Both panes can be resized with the mouse.

Real Time tab provides live Forex market data for 10 main currency pairs via the TrueFX WebAPI. The graph is provided to monitor the latency of the data server connection in real-time. You can use the TrueFX feed to either run a live test on one currency pair, or to store the price data for all 10 pairs. In addition, this tab is used when importing real-time prices from your MT4 terminal via the **MT Connector**. Live prices from either source are constantly recorded and at any time can be saved locally to use them later for back testing.

Data tab is used for offline simulation and back testing. You can load tick data to run a market simulation and practice trading manually. You can also specify a set of tick data files for automated batch testing and select the speed for the Fast Test Mode.

Manager tab is a powerful tool to prepare historical price data for back testing. You can load a large data file, view, and zoom it, then select a fragment and save it as a separate file. This functionality is especially handy when preparing the data for batch testing.

Settings tab provides controls to change all global parameters, e.g., graphics mode or account currency. You can also check for software updates and review the change log.

Help tab contains a copy of this guide and a set of **How to...** quick links.

License tab is used to install, validate, upgrade, and uninstall your software licenses.

Strategy tab provides all you need to develop your automated trading strategy. There is a C++ code editor and the controls for the inbuilt C++ compiler.

Tester tab provides the information about the running test batch and the strategy testing results, in both graphical and table formats - as well as the test report.

Analyzer tab provides our unique tool that detects the market extremes in real-time using our proprietary algorithm. You can adjust the detector parameters with sliders.

Optimizer tab provides the tool to tune the Analyzer parameters to the current market situation.

Products tab is used to obtain and switch licenses for all free products.

NOTE: you can rearrange the tabs with the mouse.

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SETTINGS

On the **Settings** tab, you can adjust the graphics parameters, select which indicators to show, check for software updates, etc.

For both **tick graphs** on the **Simulation** tab, you can select the size of the data window. For the close-up graph (bottom left), the default size is 10 seconds, and maximum is 120 seconds. For the other tick graph (top left), the range is 120-7200 seconds.

For the **average graph** (top right on the **Simulation** tab), you can set the data window size and the **averaging interval**; supported values are M1/M5/M15/M30/H1/H4/D1. You can also select the plotting mode: **line** or **candlesticks**. If the **Scale to orders** flag is set, the vertical scale is adjusted to make visible all the orders placed during currently running simulation.

NOTE: averaging interval and indicators can also be selected from the context menu activated by a right-click on the graph.

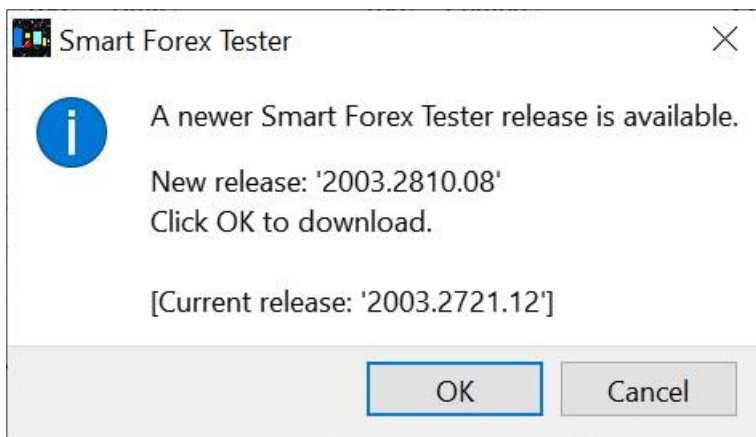
The **indicator graph** supports **RSI, ATR or MACD**. On the average graph, you can also plot **moving averages - (SMA and EMA)**; the number of periods used in their calculation can be set in the **Aver. window** control.

For all graphs, you can activate the **offset** view, with a gap plotted between the latest value and the right border of the graph area. You might find viewing graphs in this mode more comfortable.

Distance to market, pips (by default 5) is a minimum allowed price difference to the prevailing price when placing **Stop-loss** or **Take profit** orders. The same value is used for both. Order fill will fail if you try to place an order closer to the market than the minimum allowed distance.

Default **Lot size** is Mini (10,000). It can be changed between simulations. A trade size is measured in selected lots. Maximum trade size is 100 lots.

Check for updates is performed automatically at every start-up. You can also do it manually using the **Check now** button. If a new software version is available, the following dialog window will open:



Clicking **OK** will open the download page with the software update in your browser.

The software change log is shown in the scrollable info window. The log is updated simultaneously with a check for software updates.

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TEST DATA

Smart Forex Tester supports both **Back testing** on historical market prices and **Forward testing** on streaming real-time prices. Live prices provided by TrueFX are available via an inbuilt data feed. In addition, you can import ticks from your Metatrader client terminal via a special connector - a proxy Expert Advisor.

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Back testing (Offline)

This mode is designed to test on the historical market data. Smart Forex Tester only works on the tick-by-tick data, which is loaded as a **.csv** file.

We recommend using historical tick-by-tick data from www.truefx.com. Their data is free and high quality; price archives for 15 main currency pairs are available as monthly files. You need to download them to your computer and unzip before using in the Tester.

TIP: you can easily split a monthly quote file into smaller (e.g., daily) files with [Data Manager](#).

To start back testing, click the **Offline** button on the Toolbar.

Next, load test data. One option is to use the **File** button and select a tick data file; it will be immediately loaded.

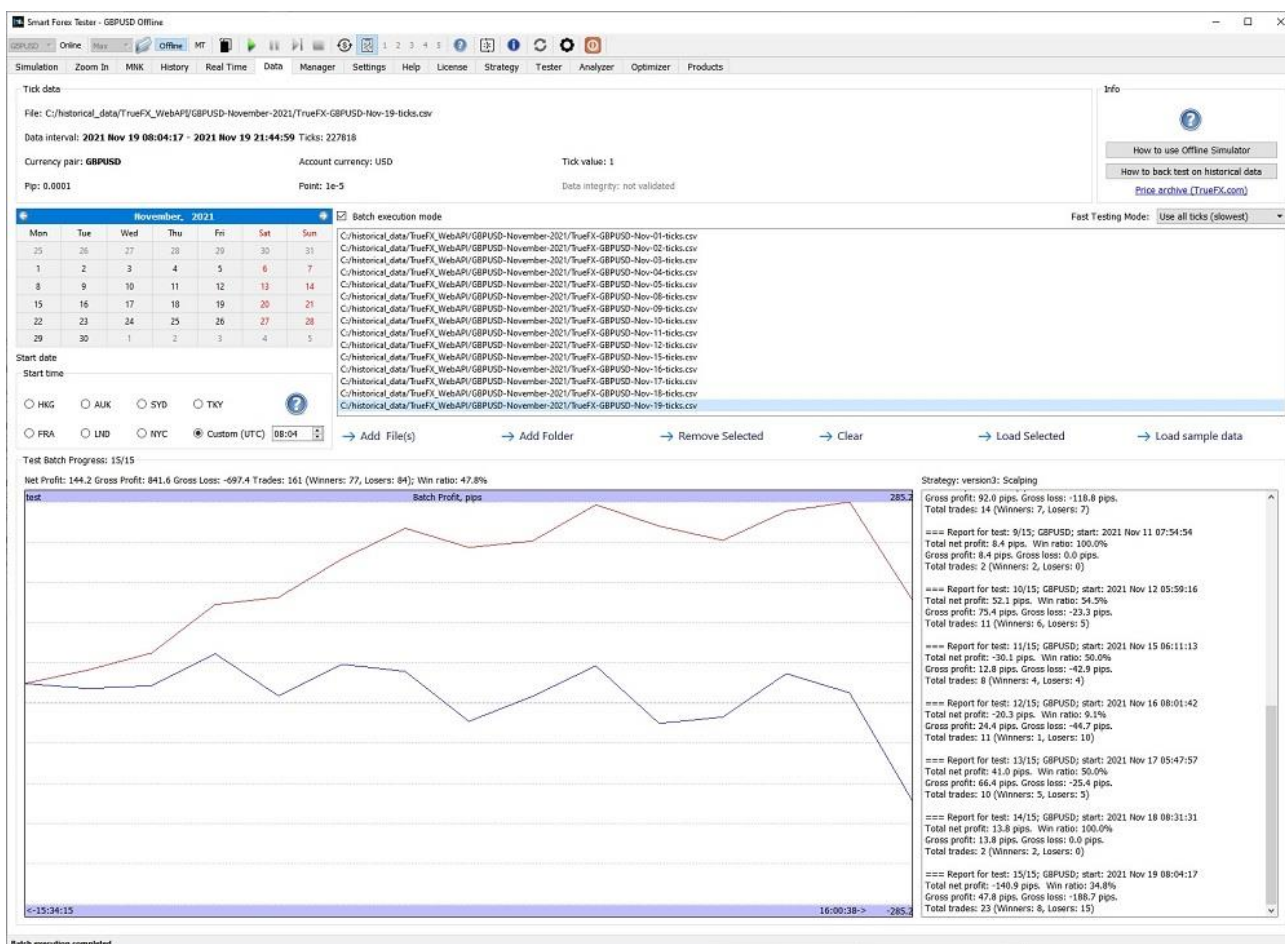
Alternatively, you can use the **Add File(s)** button on the **Data** tab. This way, you can simultaneously add multiple data files to the list (the software will remember this list on the next start-up). But adding to the list didn't load the data; you need to select one file from the list and click the **Load Selected** button.

For your convenience, the software also provides an inbuilt test data file. To use it, click the **Load sample data** button on the **Data** tab.

NOTE: make sure the **Batch execution mode** box is not checked. This option is used for automated testing only. See the [STRATEGY TESTER](#) section.

When the loading of your data file is complete, the calendar will show the first tick's date highlighted in blue. For the data file on the screenshot below, it is November 19. The rest of the data interval will be light colored. The parameters of the tick data will be also shown.

Note that tick data files can be large. On the example screenshot below you can see there were over 200K ticks for just one trading day.



You can select the desired simulation start date by clicking on it in the calendar. The start time can be entered as hours and minutes or, alternatively, selected from the preprogrammed opening times of the most important trading sessions worldwide.

NOTE: Times are UTC.

If you do not explicitly select date and time, a simulation will automatically start from the first tick in the data file.

When the test data is ready, click on the green **Play** button on the Toolbar to start a simulation. The focus will switch to the **Simulation** tab, where you can monitor the market action and place your orders.

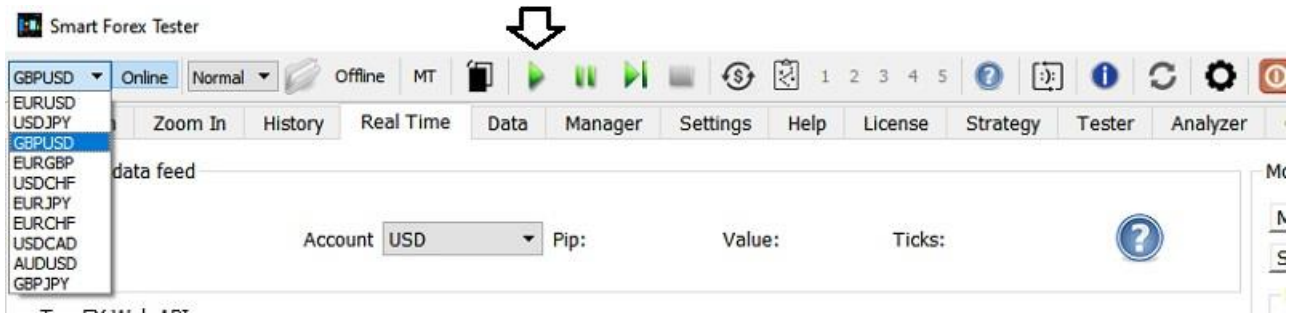
NOTE: while the calendar is for one month only, it does not mean test data files can't be larger. The calendar always shows the first month, thus only limiting the test start date. The data file size is only limited by the available RAM of your computer. Keep in mind that even one month of ticks requires hundreds of MB.

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Forward testing (Online)

This mode enables you to practice manual trading or test your automated trading strategy in real-time - when the markets are open. Streaming Forex price quotes (provided by **truefx.com**) are available for 10 main currency pairs via an inbuilt WebAPI client. In addition, using our **MT Connector**, you can import live price data (not only Forex) from your MT4 terminal running on the same Windows computer.

Live prices from TrueFX. To start live data feed, click the **Online** button on the Toolbar, select a currency pair from the drop-down list, and press the green **Play** button.

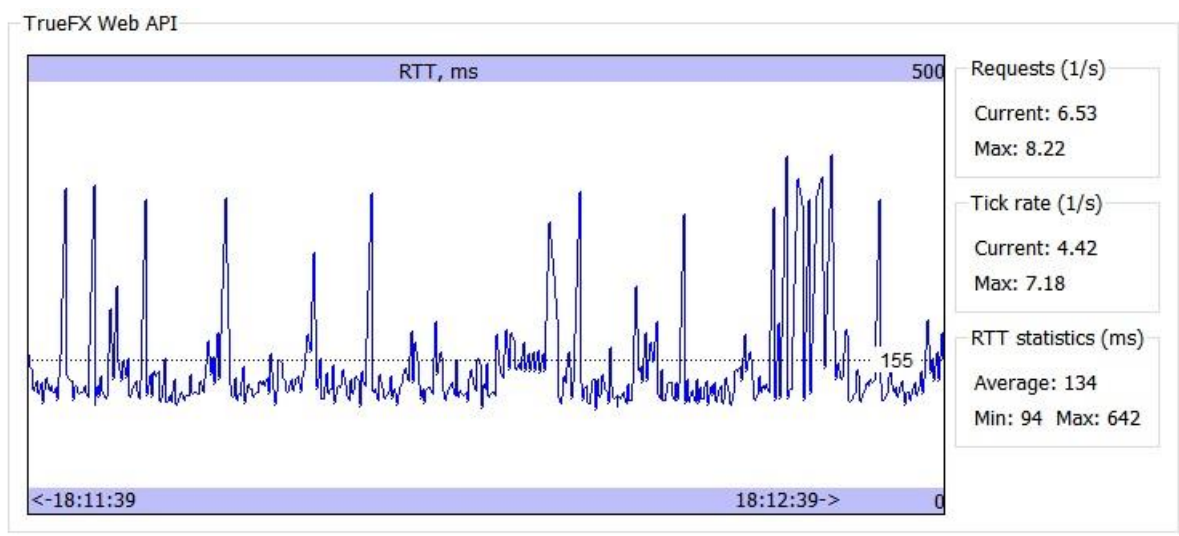


To change the currency pair, stop the running simulation by pressing the **Stop** button on the Toolbar, select a new pair as described above and press the green **Play** button again.

Internet access

Any real-time simulation requires a low-latency Internet connection, as the software is fetching the price quotes from the TrueFX server over the Internet.

To monitor the quality of the server connection, the software measures the round-trip time (RTT) and displays its last-minute real-time graph as well as longer term averages.



RTT is the time needed to request and receive one tick from the trading server over the Internet. The smaller the RTT value, the closer your environment is to the real market. If you run the software on a VPS located close enough to the TrueFX server, you can get up to 30 ticks per second. In any case,

we recommend that the average RTT value would not exceed 200 ms.

The software also reports the request rate. This is always higher than the tick rate since not every request fetches a new tick.

If the Internet connection is lost while in real-time mode, the simulation will be paused. Connection loss will be logged on the **History** tab and the market charts will show the **DATA LOSS** warning.

As soon as the Internet connection is restored, the simulation will resume automatically, but there will be gaps in the graphs. On the candlestick graph, the gaps may be indicated by thin gray vertical lines. The restoration of the connection will also be logged.

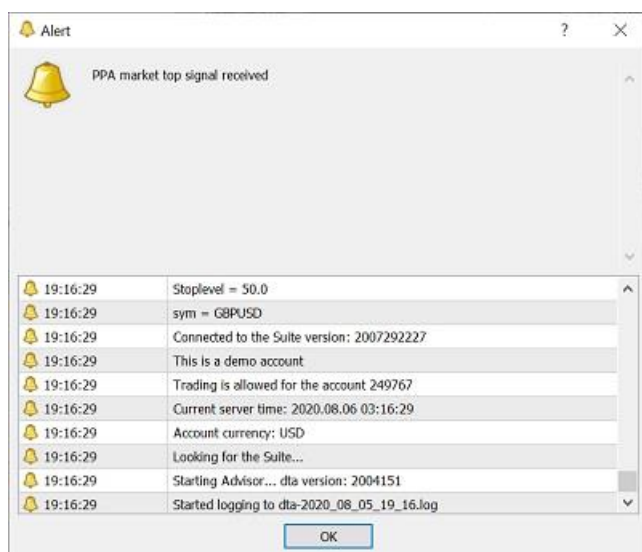
NOTE: the result of a real-time simulation can only be reliable if your Internet connection was not interrupted.

Live prices via MT Connector. You can use data from your MT4 terminal, which is running on the same computer. To establish a connection between Metatrader and Smart Forex Tester, you need to use a special proxy EA. You can download the EA from the link provided on the **Data** tab. For the details, see the [Real Trading](#) section.

NOTE: the software also provides a **Copier** functionality, where trade signals are generated on the TrueFX data feed, but the trades are executed in Metatrader via the MT connector. For more details, see the [Automated Trader](#) section.

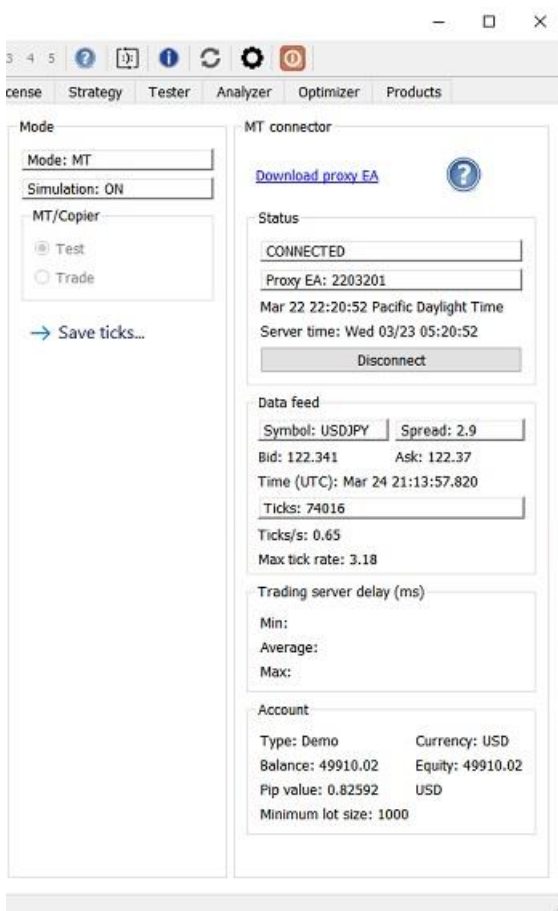
To use the MT connector, first click the **MT** button on the Toolbar to make the Tester wait for a connection. Then go to your MT4 terminal and deploy the proxy EA on a chart.

You can monitor the connection status in the Metatrader Alert log. Below is an example sequence of messages that you should see (note that software versions may differ from those in your installation).



The connection establishment only takes a fraction of a second. If the EA fails to connect, try restarting both Metatrader and Tester and repeat. Once the connection is established, on the **Data** tab

the Tester will report the status as **CONNECTED** and you will see ticks coming in.



To trade via the MT connector, select the **Trade** mode. In this case, all trading commands - both manual and from your automated strategy - will be sent for execution to your MT4 terminal. You can pause and resume live trading with a help of the **Enable trading** box.

In the **Test** mode, Metatrader is used as a live data feed only and all trading is done internally in the Simulator. You can save live tick data locally and use it later for back testing.

Now, you can start a simulation by pressing the green **Play** button on the Toolbar.

NOTE: to switch between the connector modes, you need to stop a running simulation. However, when the simulation is stopped, the connector will remain in the **CONNECTED** state. So, you can start a simulation again.

To switch to another currency pair, click the **Disconnect** button first. This will remove the EA from the Metatrader chart. If you do this during a running simulation, it will be stopped. Then use the connect procedure for another currency pair.

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Quote Saver

Enables you to simultaneously record live prices for all 10 currency pairs provided by TrueFX.com via their real-time WebAPI data feed. You can use saved quotes for back testing. If you use our free software, you need to install the Online Simulator license to use the Quote Saver.

Quote Saver is the easiest way to get the latest historical tick by tick data. It is handy to record data during the whole trading week and test on the acquired weekly tick data files.

How to record. On the **Toolbar**, click the **Online** button. On the **Real time** tab, in the **Quote saver** box, click the **Start** button.

You will be shown a dialog window to select a directory where to save the price quote data. When you do that and click OK, the quote recording starts. Price quotes will be saved as 10 separate .csv files with names matching the currency pairs (e.g. EURJPY.csv).

Keep in mind that if the folder you specify to save recorded tick data already contains previously recorded data, old files will be rewritten!

To stop recording, click the **Stop** button at any time.

NOTE: make sure you have the rights to write in the selected directory! The Quote Saver might not throw an error when the folder is write-protected.

NOTE: When the Quote Saver is running, other products of the Suite are unavailable. But during recording you can access the saved data and use it to test on another computer.

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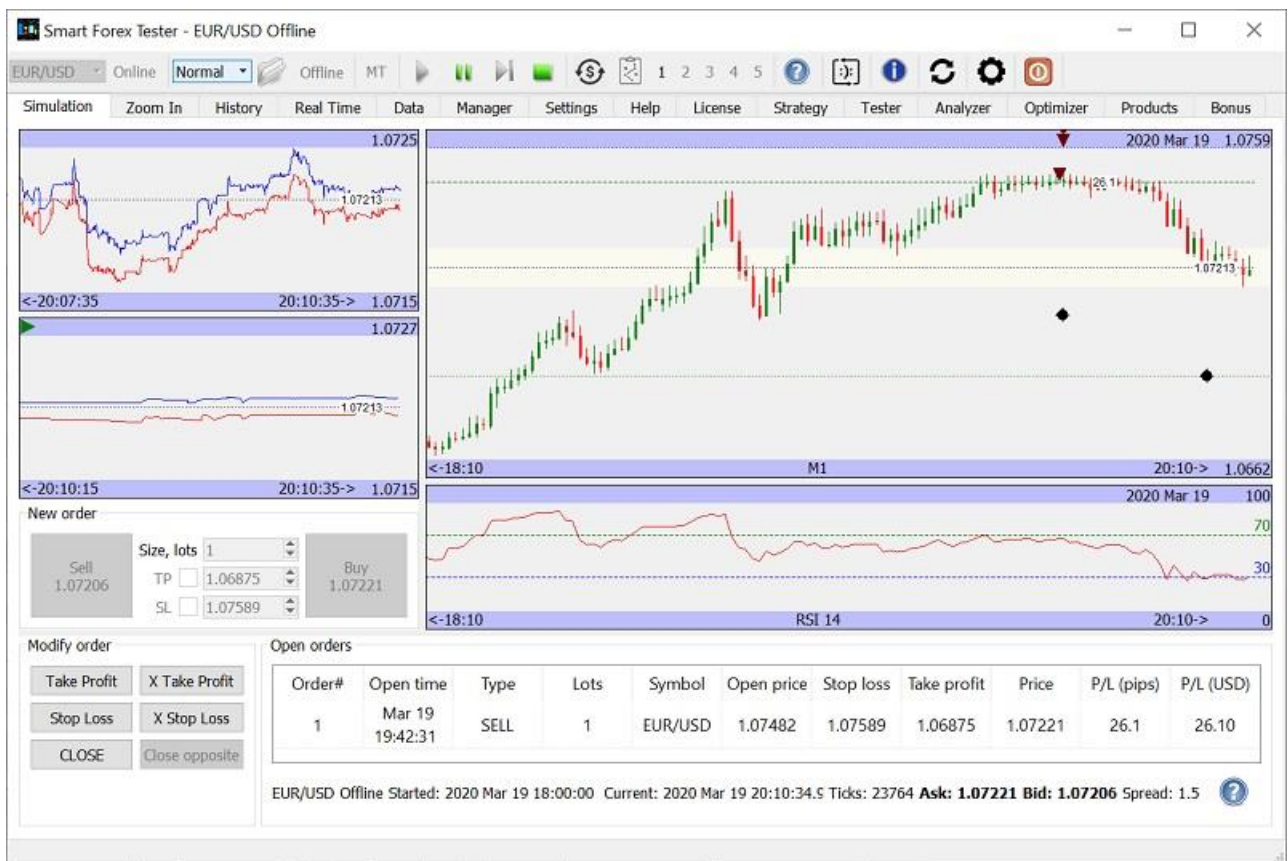
TRADING SIMULATOR

Is designed for both manual trading practice and back- and forward testing of automated strategies. Includes a tick data engine and a trading server.

Data feed controls are located on the **Toolbar**. Green **Play** button is used to start a simulation, and the **Stop** button ends a running simulation.

With advanced features like **Fast Forward/Slow Motion** and **Time Shifting**, the tick data engine enables you to save a lot of your time when practicing manual trading.

The tool's dashboard is the **Simulation** tab, where main controls and graphs are located.



The status string in the bottom shows the symbol, the simulation type (online or offline), the start date/time of the running simulation, current tick count and current time (for an Online simulation). For an Offline simulation, all times are taken from the historical data.

Graphs

Real-time tick graphs on the left-hand side are updated with every new incoming tick. Both **Bid** (red) and **Ask** (blue) lines are plotted. The upper tick graph can display a time interval from 2 min to 2 hrs. The other tick graph is a close-up, with a minimum time window size of 10 s. You can configure the time window sizes for both graphs on the **Settings** tab.

NOTE: you can resize all graphs. Place the cursor on the separator between any two graphs, and when the slider sign appears, click, and drag the slider to resize the graphs, then release. New sizes will be remembered after software restart.

Top right graph displays averaged quotes, starting from M1. By default, candlesticks are plotted. You can switch to line graph on the **Settings** tab.

Right-click on the graph activates the context menu, where you can select the indicator to plot, adjust the visible data window size, and select the averaging interval.



Light-gray horizontal bar shows the value range of the close-up tick graph. Dashed horizontal line shows the current market price. Dashed vertical line marks the date change. The graph can also plot **SMA** or **EMA**, whose periods you can change on the **Settings** tab.

NOTE: left click on each graph will activate **Zooming mode** and focus will switch to the **Zoom In** tab. To return, double click on the graph. For more details, check the [Trade Analysis](#) section.

The right bottom graph is reserved for indicators. Currently supported are RSI, ATR, and MACD.

Right-click on the graph activates a context menu, where you can select the indicator to plot, adjust the visible data window size, and select the averaging interval.



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Trading Operations

Trading controls are located on the bottom left of the **Simulation** tab.

Currently, Smart Forex Tester supports one active **market order**, with linked **Stop-loss** and **Take profit** orders. **Pending orders** and multiple orders will be supported in later releases.

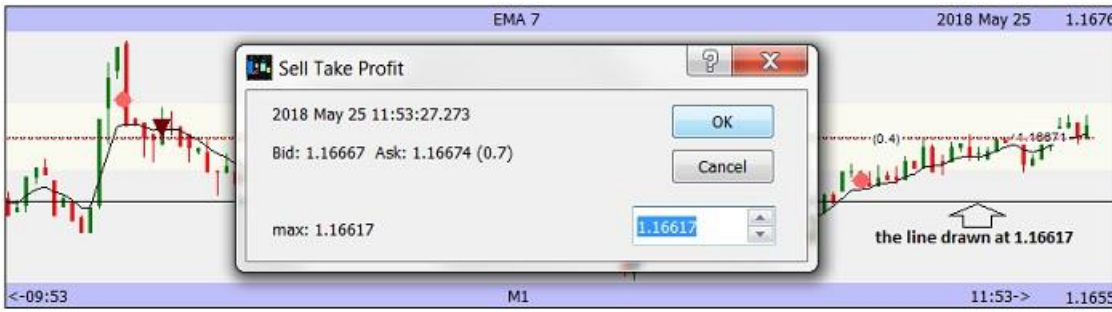
You can place a market order in one click using the **Buy** and **Sell** buttons. A trade size is measured in lots, where the **Lot size** is configured on the **Settings** tab and can be changed between simulations. By default, lot size is set to Mini (10,000). Maximum trade size is 100 lots.

On the graphs, orders are marked with a green triangle pointing up (BUY) and a black triangle pointing down (SELL). For the active order, a horizontal dashed line is drawn at the price the order was opened. The line is green colored if the position is profitable and red otherwise. Profit (loss) value is written on the line.

You can place **Take profit** and **Stop Loss** orders simultaneously with the market order. For that, before you press the **Sell** or **Buy** buttons, you need to check the **TP** or/and **SL** boxes, then set the

desired price by using arrow buttons or by entering it manually. The solid horizontal line is drawn at the price level entered in the control.

Stop orders can also be placed at any time after the market order using **Take Profit** and **Stop Loss** buttons. Clicking a button opens a dialog window where you can select a desired price level by using arrow buttons or by entering it manually and pressing the **OK** button. A solid horizontal line on the graph helps you adjust the price. When the price is set, press the **OK** button to place the order.



The same buttons can be used to modify active stop orders.

The **X Take Profit** and **X Stop Loss** buttons are used to cancel stop orders.

NOTE: every time you try to place or move a stop order, its distance to the market is checked. If the price entered is too close to the current market price, the order fill error will be returned. Minimum distance to the market is configured by the **Stoplevel** parameter on the **Settings** tab.

If you use a dialog box to add or modify stops for an active market order, the Simulator automatically calculates the minimum possible distance to the prevailing market price and does not accept incorrect values. For your convenience, the arrow buttons are also colored. A red button indicates that the price is too close and order placing command will not be accepted.

All your trading activity is shown on the **History** tab. See the details in the [Trade history and log](#) section.

NOTE: when you start a new simulation, previous trading history will be deleted.

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Data Speed Control

Trading practice with our Simulator is much more efficient than on a conventional practice account. Thanks to variable data speed and time shifting features, you can fully concentrate on the market action, forget interruptions and as a result spend much less time practicing. This is impossible to do on any demo.

You can vary the speed of the data feed during an offline simulation and even in real-time, when **Time Shifting** is used.

Online simulation can be put on hold with the red **Record** button. To unhold the simulation, press the blue **Play** button.

Offline simulation can be put on hold with the green **Pause** button. To unhold the simulation, press the **Pause** button again.

NOTE: Do not press **Play** button when pausing an offline simulation! It will start a new simulation on the same test data.

By default, an offline simulation is always started at **Normal** speed. It means that ticks are sourced at exactly the same intervals as they appeared on the market.



In the **2X (4X)** mode, the ticks are sourced twice (4 times) faster compared to the **Normal** mode. These modes are useful to save time when practicing trading in quiet markets. E.g., in Asian sessions the time intervals between ticks can sometimes exceed 1 min.

The **Max** mode does not limit the time intervals between ticks anyhow, so the feed speed depends solely on your hardware. This option is used mainly for debugging and demonstrations.

In the **1/2X (1/4X)** mode, the ticks are sourced twice (4 times) slower compared to the **Normal** mode. These modes can be used during fast-paced markets, e.g., to practice news trading.

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Time Shifting

Time Shift feature makes it possible to pause/resume live data feed during an online simulation. Time Shift is helpful when your real-time practice is interrupted. E.g., during an important phone call, you can simply put your simulation on hold and the software will continue receiving live market data and storing it in the memory; so that you could resume the simulation when you are free.

To pause an online simulation, press the red **Record** button on the Toolbar. The Simulator will start storing streaming prices internally. A red circle on the close-up tick graph will indicate the recording is on, and the duration of the recording will be also shown.



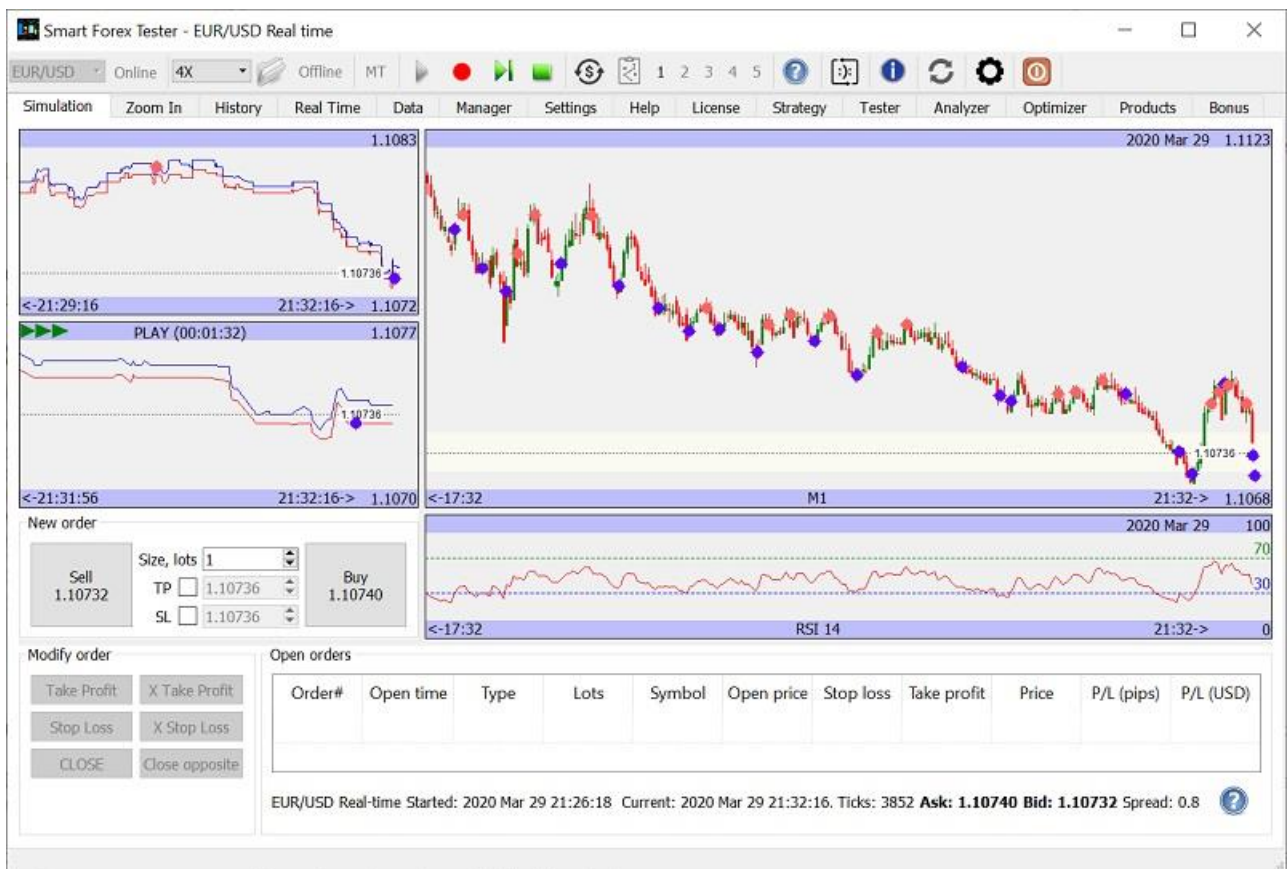
NOTE: Trading operations are not possible during recording.

To resume the simulation, press the blue **Play** button on the Toolbar. The simulation will continue from the next tick after the last one shown before the pause. The playback symbol will be displayed, along with the current recording duration (i.e., the delay from current time).

As prompted by the feature name - time shifting - all the recorded ticks will be rendered with the same delay.

During the playback, you can fast forward the recorded data by selecting the **2X** or **4X** speed from the drop-down menu on the Toolbar. In this case, the delay will be decreasing, and eventually, the data feed will become real-time again.

To switch to real-time immediately, press the **Live** button or select the **Max** speed on the Toolbar.



Alternatively, you can slow down the playback of the recorded data: available are **1/2X** or **1/4X** speeds. In this case, the delay to real-time will be increasing.

All trading operations are possible during both fast forward and slow-motion playback, which makes the combination of time shifting and variable data speed an extremely effective practice tool.

If the markets were slow moving during the time of recording, fast forwarding lets you catch up with real-time without losing anything significant. This saves a lot of time because you can only concentrate on essential market action - instead of waiting for it.

In turn, slow-motion playback can be extremely helpful for practicing trading fast market action that happens e.g., around the time of major news releases.

You can also pause the playback at any time and at any speed. To pause, click the red **Record** button on the Toolbar.

NOTE: If you want to use the recorded data offline, leave the **Record** button pressed before switching off the network (e.g., before enabling the **Airplane** mode).

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Trade History and Log

The **History** tab is divided into 2 panes: trade history and log. You can resize the panes by dragging the separator with the mouse.

The table on the upper pane shows all the trades of the last simulation. For each trade, its size, open/close time/price, and profit are shown. Profit is calculated in both pips and account currency.

In addition, account balance and maximum draw down are shown. If the test is run via the MT connector, the initial balance is taken from the Metatrader account. For all offline simulations and online simulations on the TrueFX live feed, the balance is set to USD 10,000.

The screenshot shows the 'Smart Forex Tester' application window. The 'History' tab is active, displaying a table of trade history. Below the table is a log pane showing simulation details.

Order ID	Open time	Type	Size	Symbol	Open price	Stop loss	Take profit	Time	Price	P/L (pips)	P/L (USD)	Total P/L (pips)	Balance (USD)	Max DD (%)
12	Mar 07 20:59:06	BUY	0.1	GBPUSD	1.38235			Mar 07 21:08:16	1.38254	1.9	1.90	8.6	10008.60	0.000
11	Mar 07 20:05:57	BUY	0.1	GBPUSD	1.38129			Mar 07 20:41:41	1.38185	5.6	5.60	6.7	10006.70	-0.018
10	Mar 07 19:38:33	BUY	0.1	GBPUSD	1.38159			Mar 07 20:04:28	1.38085	-7.4	-7.40	1.1	10001.10	-0.074
9	Mar 07 18:57:41	SELL	0.1	GBPUSD	1.38217			Mar 07 19:38:27	1.38160	5.7	5.70	8.5	10008.50	0.000
8	Mar 07 18:20:12	SELL	0.1	GBPUSD	1.38437			Mar 07 18:34:28	1.38340	9.7	9.70	2.8	10002.80	0.000
7	Mar 07 17:45:25	BUY	0.1	GBPUSD	1.38525			Mar 07 18:19:17	1.38443	-8.2	-8.20	-6.9	9993.10	-0.082
6	Mar 07 16:57:18	SELL	0.1	GBPUSD	1.38538			Mar 07 17:32:30	1.38488	5.0	5.00	1.3	10001.30	0.000
5	Mar 07 16:23:32	BUY	0.1	GBPUSD	1.38505			Mar 07 16:56:05	1.38542	3.7	3.70	-3.7	9996.30	-0.037
4	Mar 07 15:59:26	SELL	0.1	GBPUSD	1.38498			Mar 07 16:20:24	1.38444	5.4	5.40	-7.4	9992.60	-0.074
3	Mar 07 15:40:40	SELL	0.1	GBPUSD	1.38570			Mar 07 15:55:49	1.38552	1.8	1.80	-12.8	9987.20	-0.128
2	Mar 07 15:38:16	SELL	0.1	GBPUSD	1.38541			Mar 07 15:39:46	1.38621	-8.0	-8.00	-14.6	9985.40	-0.146
1	Mar 07 15:12:57	BUY	0.1	GBPUSD	1.38604			Mar 07 15:38:16	1.38538	-6.6	-6.60	-6.6	9993.40	-0.066

Simulation log (bottom pane):

```

Mar 13 16:17:46.270 TRD Active strategy: Strategy: full-auto 24/5 prototype (version1)
Mar 13 16:17:46.272 TRD Trader parameters: TP=5 SL=8 MaxSpread=2
Mar 13 16:17:46.273 TRD Deposit currency: USD
Mar 13 16:17:46.274 TRD Starting balance: 10000
Mar 07 14:14:12.499 PPA calling a bottom: 1.38374 idx 103
  
```

The bottom pane shows the simulation log. Each log record starts with a time stamp. For online simulation, time stamp is current time. In the back testing mode, the time stamps are copied from the ticks in the historical data file.

Time stamp is followed by the log level (**INF/ERR/DBG**), or the ID of the product that printed the message. As an example, on the screenshot below, the line with the ID **PPA** is printed by the Pivot Points Analyzer, **SFT** - by the active strategy, and **TRD** - by the trading engine.

```

Mar 07 19:38:12.246 PPA calling a top: 1.3815 idx 62746
Mar 07 19:38:12.400 SFT got new PPA dot; tick# 62747 -- rangebound: -1
Mar 07 19:38:27.354 SFT TRD Risk limit exceeded! Tick: 62806; Closing the active SELL order at Ask: 1.3816
Mar 07 19:38:27.354 TRD TICK: 62806 BID: 1.38149 ASK: 1.38160 REQUEST TO CLOSE ORDER AT 1.38160; TICKET: 9; SIZE: 0.1; CONTACTING SERVER...
Mar 07 19:38:27.354 TRD TICK: 62806 BID: 1.38149 ASK: 1.38160 SELL ORDER CLOSED AT 1.38160; TICKET: 9 SIZE: 0.1; PROFIT: 5.7 PIPS (5.70 USD); BALANCE: 10008.50 USD; SERVER DELAY: 1 MS
Mar 07 19:38:27.354 SFT last trade: max potential profit: 10.8 pips - 10273 ticks after entry; ticks to profit: 119
Mar 07 19:38:27.354 SFT Profitable trades: 8; total max profit: 67.7 pips
Mar 07 19:38:33.266 SFT Tick: 62831; we have a BOTTOM, opening a BUY at Ask: 1.38159
Mar 07 19:38:33.266 TRD TICK: 62831 BID: 1.38149 ASK: 1.38159 REQUEST TO OPEN BUY MARKET ORDER AT 1.38159 SIZE: 0.1; CONTACTING SERVER...
Mar 07 19:38:33.266 TRD TICK: 62831 BID: 1.38149 ASK: 1.38159 BUY ORDER OPENED AT 1.38159 TICKET: 10 SIZE: 0.1 SERVER DELAY: 1 MS
Mar 07 19:38:33.266 SFT Tick: 62831; opened a BUY at: 1.38159; rangebound=-1, SL=0.00061
  
```

In addition to the simulation related, the log also contains information about software start-up or stopping, data downloading or saving, etc. For debugging purpose, the log can also be written to disk.

NOTE: when you start a new simulation, its log will be appended to the existing one.

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TRADE ANALYSIS

To study market price action, investigate your trades and troubleshoot your automated strategy, Zooming is provided.

To go to the zooming mode, left click on any graph on the **Simulation** or **Analyzer** tabs.

Alternatively, you can select an area to zoom into by clicking and holding the left mouse button on the one side and releasing it on the opposite side. The selected area will be shown on the **Zoom In** tab.

Regardless of the graph where you activate zooming, the graph on the **Zoom In** tab always shows ticks, so you can see all the details with a 100% accuracy. Both Bid (red) and Ask (blue) lines are plotted.



Once in the zooming mode, you can continue to zoom in by selecting a smaller area with the mouse

as described above. To zoom out, use left click.

You can also move the graph as a whole by clicking and holding the right button. Double click will return you to the tab where you started from.

The vertical and horizontal lines drawn from the cursor help you find the price quotes and trades. All the information is shown in the status line in the bottom.

On the above example screenshot, the cursor is positioned on the PPA bottom signal (blue dot). The status line shows the tick # when it happened (43671), its timestamp with a millisecond precision (18:30:06.038), Bid (1.38288) and Ask (1.38299).

The numbers in square brackets show the ticks interval that is currently plotted (40398 thru 44225). The date of the test is also shown (2021 Mar 07).

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STRATEGY TESTER

It is an all-in-one tool to evaluate automated trading strategies both offline on historical data and in real-time. Provides a number of prebuilt strategies and enables you to automate your strategy in a fully-fledged C++ environment.

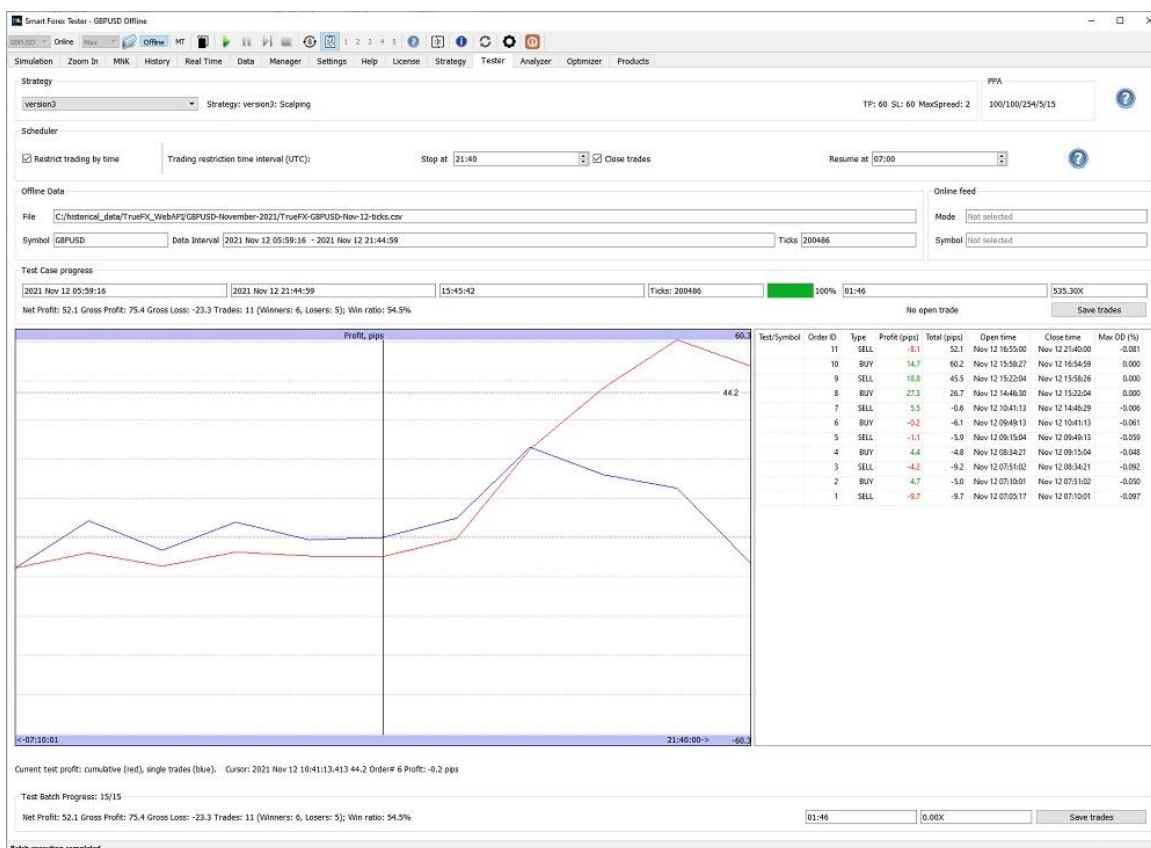
The Tester uses the same advanced tick data engine as the Simulator. In addition, back testing is possible to do in the [Batch Testing](#) mode. Forward testing is supported on both live TrueFX feed and via the MT Connector.

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Tester Dashboard

During a running test, the **Tester** tab displays all the essential information: the strategy under test, the test data used and the test progress and results. In addition, on the **History** tab, you can find full trading history and the Strategy Tester log - see the details in the [Trade history and log](#) section.

NOTE: it is recommended to monitor a running test from the **Tester** tab or others not having tick graphs: otherwise plotting the tick graphs might significantly increase overall testing time.



Strategy control shows the strategy under test and its current parameters, like SL or TP, in pips. All available prebuilt strategies can be selected from the draw-down list.

NOTE: to test your own strategy, select the **custom** option. For the details of how to develop a custom strategy, check the [Trading Strategies](#) section.

Offline data control is used in the back testing mode: you can see the tick data file name, the symbol and the time interval the tick data file spans. Data selection procedure is described in the [Batch Testing](#) section.

Online feed control is used in the forward testing mode: you can see the symbol and the testing mode, which can be **TrueFX**, **MT/Test** or **MT/trade**. In the latter case, trades are executed in a MT4 terminal via our MT connector.

Test Progress control enables monitoring of the test completion, time elapsed in the historical file, physical test run time, and the test speed as the ratio of the two. If forward testing is in progress, it is indicated by the **Live** sign and the current time is displayed.

Test Batch Statistics control shows trading statistics for the closed trades from the beginning of the batch, as well as the profit of the currently open order.

Save trades... button is used at any time to store a snapshot of all the closed trades as a .csv file.

NOTE: when you open a saved trades file in Excel, you might not see the timestamps with full accuracy. In this case, you need to change the date/time format for the timestamp columns.

Profit graph shows the results of each trade (blue line) and cumulative test profit (red line). The graph covers the time interval between the closure of the 1st and the last trades. Use cursor to select a trade and its time and profit will be shown in the status bar under the graph.

Summary of all closed trades is shown in the table to the right of the profit graph. Full information is available on the [History](#) tab.

Test report control shows the test statistics (profit, trades, etc.). If you run multiple tests as a batch, the numbers for each test file are displayed.

NOTE: you can resize the graph and the table by dragging the separators with the mouse.

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Batch Testing

This is a handy feature to run a series of tests on multiple data files in one go. To start batch testing, click on the **Offline** button on the Toolbar. Then, on the **Data** tab enable the **Batch execution mode** checkbox. Next, specify the test data: all the files present in the control will be run as a batch.

Edit the list of files you want to test on with a help of the **Add File(s)**, **Add Folder** and **Remove Selected** buttons. The **Add File(s)** button allows multiple selection. The **Clear** button erases the entire list.

NOTE: the software will remember the batch content after restart.

When the batch is ready, on the **Tester** tab, select the trading strategy to test from the **Strategy** drop-down list. Now, you can start the test with the green **Play** button. All the test data files that you added in the batch will be executed one after another and the results for each test will be shown on the graph on the **Data** tab. Trading statistics for each batch will also be shown on the **Tester** tab.

In the Batch testing mode, you can use the **Fast Testing Mode** that can speed up your testing up to ten times, by running the tests only on a part of the ticks from the original test data file. Of course, the more ticks you skip, the less reliable the test result will be. So, you might want to run the tests multiple times with decreasing speed and monitor the consistency of the results.

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Trading Strategies

Smart Forex Tester comes with multiple pre-built trading strategies that use market timing signals from our [Pivot Points Analyzer \(PPA\)](#). In addition, a development environment is provided to automate your trading strategy in standard C++ language.

For strategy customization, we provide a number of interfaces to the Tester engine to get relevant market data and also send trading commands to either the inbuilt market simulator or a live trading

server (via the MT connector). PPA signals are also made available to any custom strategy.

You can load a strategy from a ***.cpp** file or type it in the edit window. Once ready, click **Check strategy** button. This starts the inbuilt C++ compiler. The Compiler messages are shown in the resizable window in the bottom.

Compiled trading strategy will be used when you start manual simulation or automated test. You can temporarily disable and re-enable an active strategy by toggling the **Strategy** button on the Toolbar.

You can edit and recompile your strategy even if a simulation is running. If the **Reload on the fly** flag is set, the currently running strategy will be immediately updated with the recompiled version.

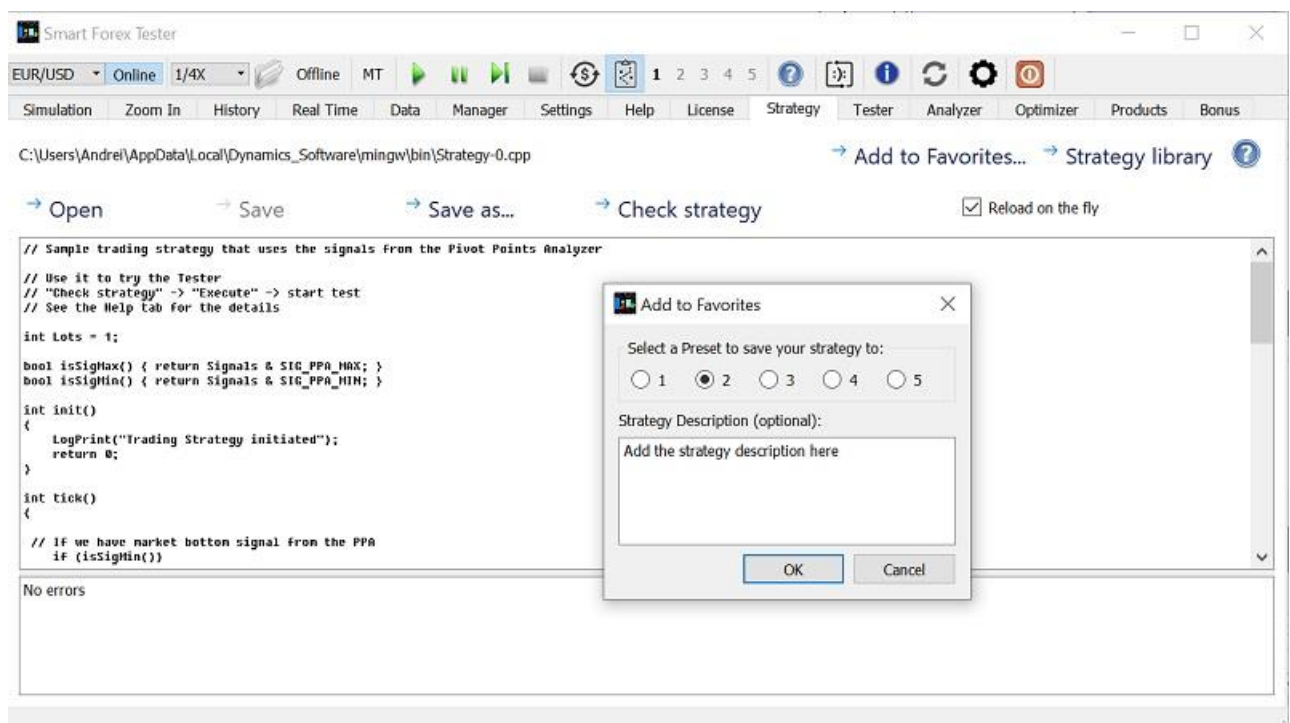
NOTE: to use your custom strategy in testing and trading, you need to select the **Custom** option in the control on the **Tester** tab.

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Favorite Strategies

You can save up to 5 of your trading strategies as Favorites. This enables you to switch strategies on the fly - both during testing and live trading.

To save a strategy: after successful compilation, click on **Add to Favorites...** button. In the dialog window that opens, select a favorite button to save to. You can also store the strategy details as a comment. When you hover the mouse over a favorite button, your saved comment will be shown as a tooltip.



Switching between the favorite strategies happens when you press a favorite button on the toolbar.

This will load the strategy's source code into the strategy editor and the strategy itself into the Tester ready for execution. If you press a favorite button when a simulation is running, the strategy will be reloaded on the fly and it will be effective already from the next tick.

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Interfaces between the strategy and the Tester

To program the logic of your strategy, you can use the standard C++ language. But to get the market data from the Strategy Tester and work with the orders, you need to use the internal interfaces.

Currently, the following interfaces are supported. We are going to add others on need basis.

```
extern double Ask, Bid;  
extern int Bars;  
extern const char *Symb;  
extern void LogPrint(const char *fmt, ...);  
extern void PausePrint(const char *fmt, ...);
```

```
enum {  
  M1 = 60,  
  M5 = 300,  
  M15 = 900,  
  M30 = 1800,  
  H1 = 3600  
  H4 = 14400  
  D1 = 86400};
```

```
enum {  
  OP_BUY = 1,  
  OP_SELL = 2  
};
```

```
enum {  
  SIG_PPA_MAX = 1,  
  SIG_PPA_MIN = 2  
};
```

```
extern int PlaceOrder(int Operation, int Lots, double Price, double slip, double sl, double tp);  
extern int CloseOrder(int ticket);
```

```
extern int Ticket;  
extern int ErrorCode;  
extern int OrderType();  
extern double OrderPrice();  
extern int OrderLots();
```

```
extern double RSI(int period, int Idx);
```

```
extern double StopLevel();
extern int GetTickCnt();
extern int GetTickTime();
```

```
extern void RefreshRates();
extern double GetVar(const char *v);
extern int Report(const char *v);
```

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PIVOT POINTS ANALYZER

Pivot Points Analyzer (PPA) is a unique market timing tool. PPA uses our proprietary algorithm to detect market extremes in real-time. PPA signals are used to time market entries and exits.

PPA signals can be used in manual trading, for example as reversal signals for scalping. But most important application for PPA signals is automated trading, where complex trading strategies can be developed based on patterns of PPA signals or using the confirmation of real-time PPA signals by lagging indicators.

On the graphs, PPA signals are plotted as dots. Red dots denote market tops, and blue dots correspond to the bottoms. PPA dashboard is the **Analyzer** tab.



The upper graph shows ticks (average line). You can resize the graphs by dragging the separator with the mouse. Bottom graph is duplicated from the **Simulation** tab.

Pivot Points Detector pane provides the controls to tune the detector sensitivity. In general, the greater are the parameter values, the fewer signals are generated. You can set the values by moving the sliders with the mouse and then fine-tune with the arrow keys.

If you are just starting with PPA, it is recommended to begin with the parameters shown on the above screenshot (100/100/254/5/15). Market timing signals for these values have been tested on multiple Forex pairs, Gold and Silver and showed consistently high (70%+) potential win ratio. See more details in the [Automated Trader](#) section.

NOTE: it is not possible to change PPA parameters on the fly - remember to set the values before starting a simulation.

Play sounds control enables you to duplicate every PPA signal with a short audio tone.

To get more understanding how PPA signals are generated, we suggest using zooming - see more in the [TRADE ANALYSIS](#) section.

PPA signals are made available in the C++ environment, so you can use them in your automated trading strategy. On every tick the signals are accessible as follows:

```
bool isSigMax() { return Signals & SIG_PPA_MAX; }  
bool isSigMin() { return Signals & SIG_PPA_MIN; }
```

The **isSigMax()** is triggered when a market top is identified, and the **isSigMin()** signals about a market bottom.

NOTE: in C++ code, PPA parameters are taken from the **Analyzer** tab. In later releases, strategies will be able to change the parameters programmatically.

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PPA OPTIMIZER

While the default Pivot Point Analyzer parameters values have been tested working well enough, the detection of market extremes can be made more accurate by adjusting the parameters to the recent market price action.

A convenient way to get recent market data to optimize on is to save the ticks acquired from a real-time data feed during an online simulation. The procedure is described in the [Tick Data Recorder](#) section.

The tick data file for optimization needs to be loaded the same way as for the offline simulation. Then, on the **Optimizer** tab, select the ranges for the parameters you want to optimize, and the accuracy you want (number of iterations). When done, click on the **Optimize parameters** button and the Optimizer window will open.

PPA parameters optimization

#	Magnitude	Time	Combo	Algo1	Algo2	Result	Pivots	Quality
13	250	250	377	5	15	38105	10	3810.5
12	100	250	377	5	15	39296	8	4912.0
11	400	100	377	5	15	38105	10	3810.5
10	250	100	377	5	15	35581	12	2965.1
9	100	100	377	5	15	36819	12	3068.3

PPA calling a top: 1.09774 idx 2083
 PPA peak quality (partial): -19237 idx 2083
 PPA peak quality: 0 idx 2178
 PPA calling a top: 1.09784 idx 2445
 PPA peak quality: 0 idx 2563

Graphs

Enabled (slowest) Data interval M1 Average window: 2 hours Tick window (s): 180

Iterations

Steps
 Total: 27 Completed: 18 To go: 9

Time (seconds)
 Elapsed: 8 To go: 18 Last step: 2

Optimization progress: [1/3] [1/3] [3/3] [1/1] [1/1]

66%

Cancel Close ?

The upper table shows the optimization results, and you can also monitor the process on 2 inbuilt graphs. To speed up calculations, turn off the graphs plotting by unchecking the **Enabled (slowest)** box. When calculations are completed, you can plot the graphs for each set of the parameters. For that, select a row in the table and click the **Plot selected** button.

For each price extreme, the optimizer calculates its quality. The algorithm evaluates the extent and speed of the price change after the PPA signal. Maximum quality corresponds to the situation when the price immediately goes in the direction opposite to the signal: e.g., decreases for a market top signal. The **Quality** parameter in the result table is an average of all the extremes detected in a single test.

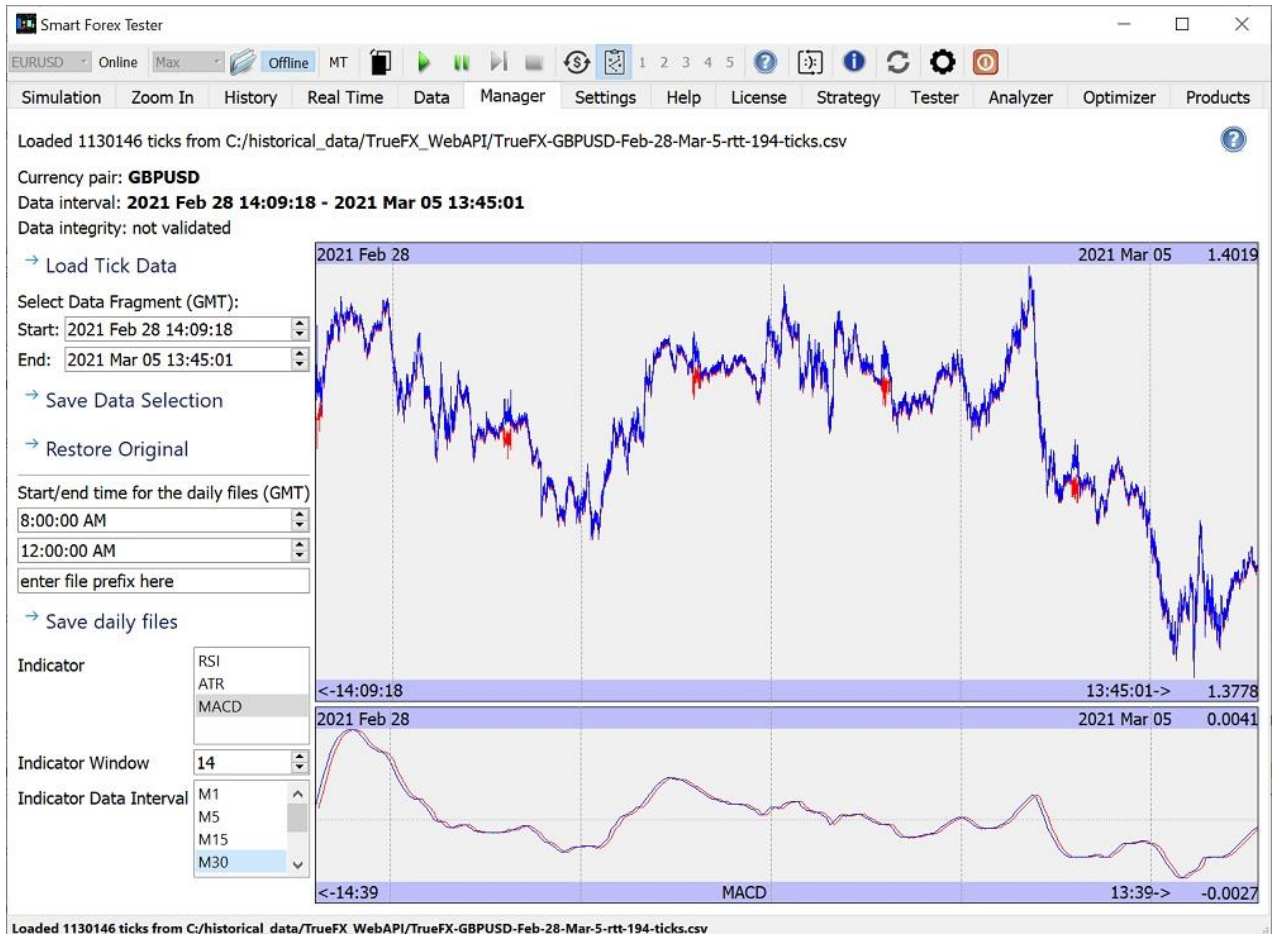
When you finish, click the **Close** button. The Optimizer window closes but the results will be copied into the table on the **Optimizer** tab. There you can select the best parameter set and make your strategy use it by clicking the **Apply parameters** button.

NOTE: if you are just starting with the PPA, it is recommended to stick to the default parameter values first. The market timing signals for these values have been tested on multiple Forex pairs, Gold and Silver and showed consistently high (70%+) potential win ratio. See more details in the [Automated Trader](#) section.

DATA MANAGER

It is a handy tool for back testing data preparation. A major use case for the **Data Manager** is the splitting of one large tick data file into multiple smaller ones, which can be included into different test batches.

Start with opening a price data file using the **Load Tick Data** button. After loading, the price graph and the selected indicator will be shown.



To review the price action and select the data interval you want to test on, you can zoom in with the mouse. Click and hold the left button on one side of the fragment being selected and release it on the other. The graphs will be refreshed with only the selected fragment plotted. Repeat as needed.

Zoom out with the left click. At any time, you can return to view the loaded file as a whole - using the **Restore Original** button or mouse double click.

To store the selected data interval as a separate file, click the **Save Data Selection** button and specify the file name.

Save daily files: this convenient feature is intended to help preparing test data for the batch testing. For example, you can upload a monthly data file, and save all the UK trading sessions during this month as separate files - with one button click.

NOTE: you can use the Data Manager simultaneously with any running simulation.

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TICK DATA RECORDER

At any time during a running simulation, you can store its price data on your computer using the **Save ticks...** button on the **Real Time** tab. This feature is especially handy when testing on live market.

When the button is pressed, a file save dialog will open. After you specify a file name, all the ticks acquired from the start of the simulation until the current moment will be saved as a **.csv** file.

Ticks are saved in the format supported by the Offline Simulator. So, you can keep an online simulation running for some time, record and save the tick data and use it later for the offline testing.

NOTE: After you stop the simulation, all its ticks are still available for saving - until you start a new simulation.

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LIVE TRADING

In Smart Forex Tester Suite 3.0 live trading is performed via a MT4 terminal running on the same Windows computer as the Suite. This requires a MT Connector - a special Expert Adviser (EA) to be deployed in the Metatrader. The EA works as a proxy between the Automated Trader in the Suite and the Metatrader trading server.

Let's explain live trading flow in more detail. When our proxy EA is deployed on a chart in the MT4 Terminal, the EA establishes a two-way connection with the Suite. The EA forwards to the Suite every tick it receives from the Metatrader. The Suite passes the tick to the automated trading strategy running in the Tester. If this tick triggers a trading decision (e.g., to place an order at this price), the Tester responds to the Suite with the corresponding command. The Suite forwards the command to the EA. Which, in turn, sends it to the Metatrader server for execution.

The EA is blocking in the **onTick()** method until it gets the response from the Suite, so the trading command is always sent in reply to the same tick that triggered the trading decision. Communication delay between the EA and the Suite rarely exceeds 10 mks, which is negligible compared to the trading server delay. So, in most cases the EA has time to return from the **onTick()** method before the next tick comes.

The MT connector can be switched to the **test mode**, which differs from live trading in that the trading commands are never sent to the EA, but instead all the trades are executed in the internal trading simulator - the way it is done for back testing and TrueFX real-time test feed.

You can switch modes in the **MT/Copier** control on the **Real Time** tab. Mode selection must be done before starting a simulation. However, in the trade mode, you can pause sending new trades to the Metatrader terminal by unchecking the **Enable trading** box.

Regardless of the MT connector mode, at any time you can save the ticks from live feed to the file to use later for back testing. See the details in the [Tick Data Recorder](#) section.

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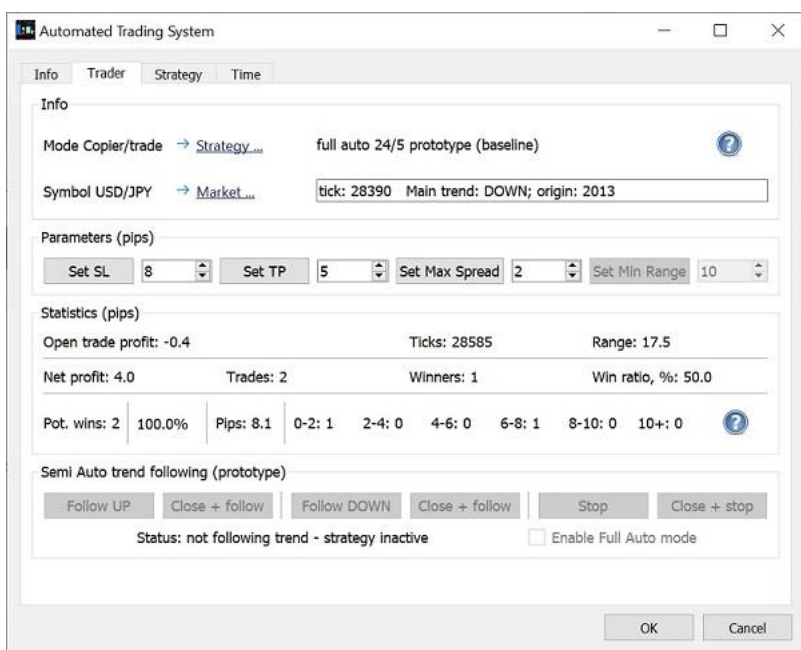
AUTOMATED TRADER

The newest component of our Smart Forex Tester Suite 3.0, **Automated Trader** uses patterns of the PPA market timing signals to build successful automated trading strategies.

With an appropriate license installed, the Trader is always enabled. You need to select an automated strategy before starting any supported data feed.

For the strategy selection, use the drop-down menu in the **Strategy** groupbox on the **Tester** tab. All the strategies in the list are hard-coded - except for the **custom** one, which you can code yourself in the provided C++ framework (see the **Strategy** section).

You can open the Trader GUI by clicking the \$ button on the **Toolbar**.



The GUI shows the trading statistics and provides the controls to change the parameters of currently running strategy. You can configure StopLoss (SL), TakeProfit (TP) and MaxSpread.

NOTE: After you change a value in the control, it remains highlighted - you need to click the corresponding **Set** button to make the change propagate to the strategy.

You can change the parameters on the fly. The changes will be in effect from the next tick. However, in the case when there is an active trade, new values will be active from the next tick after the closure of this trade.

Potential Wins is an indicator of market entry and exit quality. At every tick after a market entry and until the position close, the software monitors maximum possible profit. After each closed trade, the following cumulative statistics is displayed:

- number of trades that could have been closed with profit and potential win ratio
- maximum possible total profit (in pips)
- breakdown of total profit by the potential wins' size

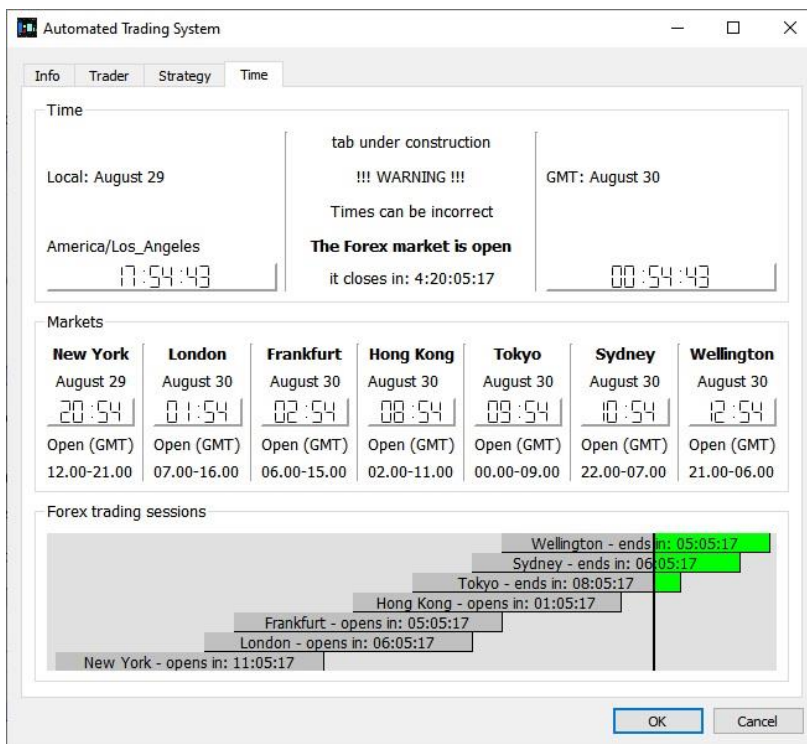
These statistics are valuable metrics of the quality of both market entry (potential wins vs total trades) and exit (net profit vs potential profit).

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Real-time map of Forex markets

The Forex markets are open 24 hours 5 days a week. A trading week starts Monday morning in Wellington and ends Friday afternoon in New York.

On the **Time** tab of the Trader GUI, you can find a convenient real-time map of trading session worldwide. To access the GUI, click the \$ button on the Toolbar.



The map shows 7 main trading sessions as horizontal bars which are painted green if trading is open, and gray otherwise. Each bar also shows the time left to the end of the session or until the trading starts.

NOTE: the session map is still under construction, so times shown can be incorrect.

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Scheduler

Is intended to prevent the automated strategy from opening new trades during a specified time interval - even if all market entry criteria are met.

If there is an active trade when the time restriction starts, the position will be closed.

To use the Scheduler, on the **Tester** tab set the times (in UTC) with the **Stop at** and **Resume at** controls, then check the **Restrict trading by time** box.

The maximum duration of the restriction is 24 hours. If you enter the same time into both controls, there will be no restrictions.

NOTE: you can enable/disable the Scheduler and change the times also during a running simulation.

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TRADE COPIER

Free real-time data feed by TrueFX used in online simulations is high quality dealable prices. However, only institutions can live trade on these prices. Trade Copier's idea is to use excellent TrueFX real-time data feed to generate market timing signals while executing trades in your Metatrader terminal via your broker.

Since the signals are generated on free TrueFX WebAPI feed, the Copier can only work on 10 main currency pairs that this data feed supports. You can see the list of supported pairs in the drop-down list on the **Toolbar**.

Technically, the Copier is a combination of two simultaneously running online simulations: one on the TrueFX feed and the other in the MT mode via the MT Connector.

To use the trade copying functionality:

1. Click the **Copy** icon on the **Toolbar**.
2. On the **Real time** tab, select between the **Test** or **Trade** mode.
3. Deploy the MT connector onto a MT4 chart.
4. Select the same currency pair in the dropdown list on the **Toolbar**.
5. Click on the green **Play** button.

NOTE: if the MT4 symbol and TrueFX symbol are not identical, it is OK. But both feeds must naturally be run on the same currency pair.