

MultiCharts

Data Sheet

Version 4.0

www.tssupport.com

Performance	
General	Allows working simultaneously with over 100 RT tick charts for actively traded symbols
	All calculations are event-based (no timer-based actions)
	Compatible with 64-bit architecture (runs in the 32-bit mode)
	Supports hyper-threading
Multi-Core CPU	Indicator calculation on different charts is parallelized and distributed between available cores
	Strategy calculation (back-testing) on different charts is parallelized and distributed between available cores
	Optimization utilizes all available cores
	Calculations for different symbols within Scanner are parallelized and distributed between available cores
Data Feeds	
Multiple Datafeeds	Enables you to simultaneously work with several datafeeds
Supported Instruments	Supports stocks, futures, indices, FOREX, and other instruments
Datafeed Management	Datafeeds can be activated/deactivated (without being deleted), edited, cloned (copied), have their settings modified, and deleted
Custom Datafeeds	Datafeeds are developed as separate DLL files; datafeeds can be transferred from one computer to another
Two Modes for Adding Symbols	Symbols can be added automatically (from a symbol list provided by the datafeed, with all settings pre-defined by the datafeed) or manually (all settings are customizable)
AGN Futures	Symbol list and symbol search/lookup are available
ASCII Mapping	File selection within a folder, resolution auto-recognizing, and file update listening are available
Bloomberg	Symbol list, symbol search/lookup (by 5 symbol types), full symbology support are available
CyberTrader	Manual symbol adding, different settings for the server are available
DDE	Manual symbol adding, configurable templates, 20 preset templates (Bloomberg, CAIT, eSignal, FAINEX, FXCM, GL Trade, Hi SAT, Infobolsa.de, BOVESPA/EUREX/FUTURES BM&F/XETRA, IQLINK, MetaTrader, MSRTTEST, QLink, QuoteSpeed, Reuters, Taipan, Tradexpert), independent bid/ask/trade requests; pre-test, 2 DDE server modes, Excel integration are available
eSignal	Symbol list, symbol search/lookup (by 7 symbol types / by exchange) are available
Free Quotes	Quotes are taken from Yahoo Finance, MSN MoneyCentral, Google Finance, ProphetFinance.com
	DDE data feed support (Universal DDE)
	ASCII mapping and ASCII import are available
	Manual symbol adding, adjustable data provider list, adjustable data provider priority, separate lists for daily/intraday data, adjustable retry/timeout options are available
GlobalServer	Symbol list, symbol search/lookup (by 9 symbol types / by exchange / by symbol name /by symbol description), support for local/remote GlobalServer (via TSDataHub), possibility to save data from GlobalServer to QuoteManager are available
IQFeed	Symbol list, symbol search/lookup (by 3 symbol types / by exchange / by symbol name /by symbol description) are available
Interactive Brokers	Symbol list, symbol search/lookup (by 5 symbol types / by exchange), 13 TWS connectivity settings (launch at start, download history or / and real-time, RTH, zero price / volume filters, TWS bar timestamps, 1/5 seconds-as-tick, 1/15 minutes-as-minute, new tick on volume change) are available
MarketCast	Symbol list, symbol search/lookup (by 5 symbol types / by exchange), off-market data filter are available
MetaStock	Symbol list, data taken from MetaStock files, 3 options to plot minute/daily data, configurable time zone, adjustable data files priority
OpenECry	Symbol list, symbol search/lookup (by exchange) are available
OpenTick	Symbol list, symbol search/lookup (by 4 symbol types / by exchange), multiple servers support are available
Patsystems	Symbol list, symbol search/lookup (by 3 symbol types / by exchange), detailed connectivity settings are available
QFeed	Symbol list, symbol search/lookup (by 2 symbol types / by exchange) are available
TradeStation 8	Symbol list, symbol search / lookup (by 7 symbol types / by exchange / by country / by symbol name / by symbol description), possibility to save data locally to QuoteManager are available

Data Feeds	
TransAct	Only data for futures is provided. Symbol list, symbol search / lookup (filter by exchange) are available
Symbol Management	
General	<p>Customizable symbol sorting in the portfolio. 20 sorting parameters are available: symbol, description, exchange, category, data source, data collection status, root, margin, contract month/year, expiration date/rule/status, price scale, daily limit, min.movement, big point value, strike price, option type, CUSIP</p> <p>Filtering by symbol category / exchange name is supported</p> <p>All the datafeed events are recorded (in the Events Log window)</p>
Database	<p>The database capacity is over two billion tick records</p> <p>The database is comprised of 3 files; the database is not connected to a particular computer</p> <p>It is possible to switch between several different databases located on the same computer</p> <p>Databases can be transferred between computers</p> <p>Data is stored as 1-tick, 1-min, 1-day resolutions to improve performance</p> <p>Tick Cache with the Clear Cache option stores n-tick / n-volume / n-range requests to improve performance</p>
Operation Modes	<p>Online Database Mode: local data for history + real-time (with the optional gap filling with quotes from the data provider)</p> <p>Offline Database Mode: only local data is used</p>
Data Collection	<p>QuoteManager can collect data without a chart being plotted</p> <p>Customizable fields to collect (Bid/Ask/Trade for Tick/Minute/Day)</p>
Data Editing	<p>Data can be deleted manually</p> <p>Price records and bad ticks can be edited; records can be searched, inserted, edited, deleted</p> <p>Data range / Data settings filter is supported</p>
Session Templates	<p>31 preset templates are available</p> <p>Existing templates can be edited and new templates can be created</p> <p>Session settings can be customized. Each trading day can be up to 24 hours long.</p> <p>Overnight and multiple sessions can be created.</p>
Exchanges	<p>Over 350 exchanges with preset (customizable) properties are available</p> <p>Existing exchanges can be modified</p> <p>New exchanges can be created</p> <p>It is possible to have different properties for the same exchange (through using different abbreviations for the same exchange)</p> <p>The following exchange parameters can be modified: Name (customizable), Abbreviation, Holiday List, Price Scale, Daily Limit, Min.movement, Big Point Value, Sessions, Time Zone (System Time or Custom)</p>
Data Exchange	
ASCII Import Wizard	<p>Automatic recognition of more than 100 unique file formats</p> <p>Auto-parsing of the data file, with data structure preview</p> <p>Customizable file settings: resolution, field, time zone, start row, price multiplier, volume multiplier, start/end date/time, field delimiters, bar end time</p> <p>16 assignable columns: undefined, symbol, date, time, open, high, low, close, volume, up volume, down volume, unchanged volume, up ticks, down ticks, unchanged ticks, total ticks</p> <p>Custom 25+ preset date formats (e.g. 17-SEP-2008)</p> <p>Custom 9+ preset time formats (e.g. 07 AM)</p>
Data Export	<p>Data is exported as comma-separated text files</p> <p>It is possible to export data directly from the chart</p> <p>Indicator values can be exported together with the price values</p> <p>It is possible to export data from QuoteManager</p> <p>Customizable fields to export (Resolution, Field, Time/Date period, Symbol, Date, Time, Open, High, Low, Close, Volume, Up volume, Down volume, Unchanged volume, Up ticks, Down ticks, Unchanged ticks, Total ticks)</p>
MS Excel RTD Server Support	Supports up to 100 plots/50 strategies/10 000 RTD-requests at the same time
Charting	
General	<p>It is possible to run multiple instances of MultiCharts</p> <p>It is possible to work with multiple workspaces</p> <p>Up to 100 price series per chart window</p>

Charting	
General	More than 5 million bars per chart (the maximum number is limited by the computer resources) Unlimited number of indicators per Chart window Any object in the chart can be selected and formatted Context menus vary depending on the chosen object Any visual setting can be saved as default In realtime, all objects on the chart are redrawn / recalculated on the fly as soon as a new tick is received Price series / indicators visual order can be changed Numbers are displayed according to the OS local settings Different resolutions can be mixed: tick-based and time-based price series can be plotted within the same chart Two datafeeds can be merged to plot a single price series (one feed for history and another feed for real-time) Global cursor: Tracking by Price Global cursor: Tracking by Time and Price Natural hours / Hours based on the session start supported
Object Management	Centralized control / display of all the objects plotted on the chart (Data series / Drawing tools / Indicators / Signals) All drawings plotted on the chart can be removed with one click All studies plotted on the chart can be removed with one click
Resolution	Raw Ticks N-tick bars - up to 1,000,000 ticks per 1 bar Constant volume bars - up to 2,000,000,000 contracts/ticks per bar Volume based on trade volume Volume based on tick count Range bars - up to 10,000 points per bar Change bars - up to 1,000,000 changes per bar Second bars - up to 86,400 seconds per bar (1 day) Minute bars - up to 1,440 minutes per bar (1 day) Hour bars - up to 24 hours per bar (1 day) Daily bars - up to 30 days per bar Weekly bars - up to 52 weeks per bar Monthly bars - up to 12 months per bar Quarterly bars - up to 4 quarters per bar Yearly bars - up to 10 years per bar
Multi-Symbol Charts	Multiple Resolutions can be combined within the same chart Multiple Symbols can be combined within the same chart A unique data number is assigned to each price series within a chart
Quote Fields	Bid Ask Trade
Sessions	24 hour Regular (configurable in QuoteManager)
Data Requests	Based on the Number of Bars/Days back Based on the specified Data range
Time Zones	Local Exchange GMT
Subcharts	Each chart window can accommodate up to 50 subcharts (up to 20 visible) Each subchart can have multiple data series and indicators Ability to maximize / restore an individual subchart Ability to hide / show an individual subchart Each data series or indicator can be assigned a subchart to be displayed in
Style	OHLC Bar HLC Bar Candlestick
Style	Hollow candlestick Dot on close Line on close

Charting	
Style	<p>Invisible chart</p> <p>The last price marker can be turned on to be displayed on the chart</p> <p>Bar weight can be adjusted</p> <p>Each bar element can be modified independently (open, high/low, close - color/width, last price marker, candlestick border)</p>
Scaling	<p>One or two price scales (on the Y-axis) can be either shown or hidden (on the right and the left sides of the chart window)</p> <p>The values of any of the price series / indicators that are overlaid in a given subchart can be displayed on the price scale (Y-axis)</p> <p>Values of different price series / indicators can be displayed on different price scales (the left and the right one)</p> <p>Range: Screen (actually visible)</p> <p>Range: Entire Series (all available data)</p> <p>Range: User Defined (range is defined by user)</p> <p>Type: Linear Scale</p> <p>Type: Semi-Log Scale</p> <p>Center Last Price feature</p> <p>It is possible to modify visual elements of the price scale</p> <p>It is possible to modify the width of the price scale margins (top and bottom)</p> <p>Scale labels: it is possible to assign a letter to a specific number of digit places</p> <p>Scale Labels: it is possible to adjust the increment size between labels</p> <p>Scale Labels: it is possible to select the number of labels to be displayed</p>
Volume Profile	<p>Calculation for a dataseries can be based on: Open, Close, High, Low, or MidPrice</p> <p>Data range for volume profile calculations can be based on: Screen, Entire Series or Bars Number</p> <p>The width of the volume profile area on the right and the left side of the chart can be adjusted separately (in pixels)</p> <p>Bar step (bar width) of the volume profile can be modified (in units/pixels)</p>
Command Line	<p>Can be used to change the symbol</p> <p>Can be used to change the resolution</p> <p>Can be used to reload charts (3 modes): all charts / active chart / all charts with the specified resolution</p>
Study Templates	<p>It is possible to save the currently applied indicators as a template</p> <p>Study templates can be automatically applied to newly created charts</p> <p>Study templates can be imported and exported (as *.TML files)</p>
Alerts	<p>Alerts on studies/drawing tools</p> <p>Audio/visual/e-mail alerts</p> <p>Alerts can be triggered either on bar close or on every tick</p> <p>Audio alert: Beep</p> <p>Audio alert: Sound (custom file) with sound pre-test</p> <p>Audio alert: Sound (can be played once or repeatedly)</p> <p>Visual alert: display for 5/15/30/60 sec or always</p> <p>E-mail alert: sender (optional), recipient (multiple recipients are supported; the senders input field can accommodate up to 1024 characters), SMTP server (name or IP format)</p> <p>E-mail alerts contain: date, time, study/drawing name/number, symbol, resolution, price, message</p> <p>E-mail messages can be tested; in case of an error, an error notification will be generated</p>
Alert Popup Hint	<p>Appears when an alert is triggered</p> <p>Displays symbol name, symbol resolution, indicator name, alert message (as coded in the PL script)</p> <p>A click on the popup hint activates the chart window where the alert was triggered</p>
Chart Navigation	
Horizontal Scrolling	<p>Mouse wheel can be used for horizontal chart scrolling</p> <p>It is possible to drag data series with the mouse</p> <p>It is possible to drag the chart with the mouse while holding the space bar</p> <p>It is possible to use the keyboard to scroll charts (Page Up / Page Dn or arrow keys)</p> <p>The chart can be scrolled by clicking on the corresponding toolbar icons</p>
Vertical Scrolling	<p>It is possible to drag the chart with the mouse while holding the space bar</p> <p>It is possible to scroll the chart by using the keyboard (arrow keys)</p>

Chart Navigation	
Changeable Bar Spacing	Bar spacing can be changed by dragging the time scale with the mouse
	Bar spacing can be changed by clicking toolbar icons
	Bar spacing can be changed by using the keyboard (hotkey combination)
	Bar spacing can be precisely set (in pixels) from the Menu
Changeable Price Scaling	The price scale can be adjusted by dragging the Y-axis with the mouse
	The price scale can be adjusted by clicking toolbar icons
Scales Restoring	The time scale can be restored to the default settings
	The price scale can be restored to the default settings
	Both scales can be restored at the same time
Zooming	Multi-step zooming in/out is available
	The number of zoom steps is virtually unlimited (up to a single bar per chart)
Pointers	Conventional (with the Hand option)
	Cross
	Cross with the Tracking time option
	Cross with the Tracking time and price option
	8 different cursors - depending on the current working mode
	21 different cursors depending on the drawing tool that is currently being used
Chart Hint	Hint: permanent display
	Hint: display on mouse click
	Transparent hint
	Hint for drawing tools
Chart Window	
General	Chart and scanner windows can be copied and pasted
	Charts can be printed out
	Chart and scanner windows can be detached and attached
	Multiple monitors are supported
	Chart window title bars can be removed
	Chart window scrollbars can be removed
	Subchart dividers can be removed
	Style formatting dialog can be accessed with a double-click
	All format changes are implemented and displayed on the fly
	40 preset colors and over 16 million colors from the full true color palette are available for any chart object
	Each line object has 6 line styles
	Each line object has 7 weights for the solid line
Screenshots	Copying to clipboard is supported
	Images can be sent via e-mail
	Chart windows can be saved as image (.PNG or .BMP)
	Workspaces can be saved as image (.PNG or .BMP)
	It is possible to reduce the image size
Background	Independent color settings for any chart window are available
Grid	The grid can be shown or hidden
	Point Grid
	Solid Grid
	Horizontal Grid
	Dotted Grid
	Detailed Dotted Grid
Session Breaks	Session breaks can be shown or hidden
	6 line styles for session breaks are available
	6 weights for the solid line are available
Subcharts Dividers	Subchart dividers can be shown or hidden
	It is possible to choose the subchart divider line style
	3D style
Chart Window Title Bar Behavior	Displayed
	Hidden
	Auto-hide
Chart Window Scroll Bar Behavior	Displayed
	Hidden
	Auto-hide

Chart Window

Price Scale	Scale on the left side
	Scale on the right side
	Scale both on the left and right sides
	Adjustable price scale area width
	Automatic price scale area width
	Adjustable price scale line color
	Adjustable price scale line style
	Adjustable price scale label color
	Adjustable price scale label font
Time Scale	The chart can be stretched horizontally by moving the mouse while holding the space bar
	Adjustable bar spacing - any number of pixels
	It is possible to display empty periods
	It is possible to hide empty periods
	Adjustable right margin (space to the right) - any number of bars
	Adjustable price scale line color
	Adjustable price scale line style
	Adjustable price scale label color
	Adjustable price scale label font
Status Line	Appropriate status line fields in each subchart
	Data series can be moved between subcharts by dragging the status line
	Hidden mode
	Cursor tracking mode
	Multi-line mode
	Auto trading control switch
	3 price series control fields are available: remove price series, symbol link, resolution link
	20 price series information fields available: Backfilling, Symbol, Description, Resolution, Field, Exchange, Data Source, Category, Date, Time, Bid, Ask, Open, High, Low, Close, Last, Net Change, Net % Change, Total Volume
	1 indicator series control field: Remove Indicator series
	3 indicator series information fields available: Study Name, Study Inputs (virtually unlimited), Study Values for each study plotted
	Separate colors for normal, positive, negative and unchanged values
	Any field can be displayed or hidden
	Adjustable field order
	Adjustable field font
Volume Profile	Volume profile on the left or right side
	Volume profile both on the left and right sides
	Adjustable width in pixels
	Independent width settings for each side
	Adjustable color
Linking	Linking by Symbol - up to 14 color categories
	Linking by Resolution - up to 14 color categories
	"Not linked" mode
	"Linked to all" mode
	Cross-workspace symbol and resolution linking
BackTesting	
General	Strategies can be created by simply combining separate signals
	It is possible to create strategies without any PowerLanguage knowledge
	Intraday price movement is simulated for calculations
	Intraday order generation is supported
	4 separate PL functions for entries and exists into/from long and short positions
	Pyramiding is supported (either taking into consideration an entry generated by a different signal or not)
	Trade size: can be specified either in contracts or in dollars
	Commission on the 'per Trade' or 'per Share/Contract' basis
	Slippage on the 'per Trade' or 'per Share/Contract' basis
	When an order is filled, an arrow is plotted on the chart (indicating the signal and volume)
Portfolio-Level Backtesting (Dynamic Portfolio)	True portfolio-level backtesting (not a mere summary of several separate strategies)
	It is possible to use up to 1000 tradable symbols per portfolio
	It is possible to have up to 4 information symbols per each tradable symbol

BackTesting	
Portfolio-Level Backtesting (Dynamic Portfolio)	<p>Positions are Entered / Exited / Scaled In / Scaled Out based on overall portfolio performance</p> <p>Global portfolio settings (capital limits, money management/risk management) are taken into account</p> <p>14 portfolio-related functions are available in PowerLanguage: GrossLoss, GrossProfit, MaxIDDrawDown, NetProfit, NumLossTrades, NumWinTrades, PercentProfit, StrategyDrawdown, TotalTrades, OpenPositionProfit, CurrentEntries, Max % of Equity at Risk per Position, Portfolio Equity Exposure %, Entries Priority. Global portfolio values are Evaluated on Each Instrument/Each Bar</p> <p>The user can define the priority of symbols for order entry</p> <p>Pyramiding is supported (either taking into consideration an entry generated by a different signal or not)</p> <p>3 trade size options are available: fixed shares/contracts, dollars per trade (rounded down to nearest number of contracts or min. number of contracts), percent of equity</p> <p>3 portfolio capital options: per cent of exposure, max per cent of capital at risk per position, initial portfolio capital</p> <p>Portfolios can be loaded and saved (*.PWS files)</p>
BackTesting Report	
General	<p>Backtesting report can be updated on each new tick / each new generated order</p> <p>Local currency display with the adjustable rate</p> <p>Adjustable number of digits after decimal</p> <p>Export to .XLS format</p> <p>Printing (on the page basis)</p> <p>Trades List</p> <p>Long/Short/Total trades filter</p> <p>List of trades with the 14-criteria search</p> <p>Detailed analysis parameters description with one click</p> <p>Zoomable graphs</p> <p>Cross/Pan cursors for graphs</p>
Performance Parameters	<p>Over 100 performance parameters with 160 report fields</p> <p>16 relative performance parameters (in %)</p> <p>Upside Potential Ratio, Sharpe Ratio, Sortino Ratio, Fouse Ratio, Calmar Ratio, Sterling Ratio are available</p>
Graphs	<p>28 graphs in 3 sections</p> <p>Trades profit/loss graph</p> <p>Period-based net profit graphs</p> <p>Maximum adverse/favorable excursion graphs</p> <p>Cumulative profit and drawdown graphs</p> <p>Includes: Equity Curve Detailed (4 versions), Equity Run-Up and Drawdown (Absolute and Relative), Equity Curve Close to Close (2 versions), VAMI, Maximum Adverse/Favorable Excursion Absolute and Relative), Run-Up/Drawdown, Monthly/Annual Returns and Drawdowns (Absolute and Relative) and more...</p>
Automated Trading	
General	<p>Multiple broker support: Interactive Brokers, FXCM</p> <p>Script-based (algo-based) automated order generation</p> <p>Auto trading mode currently in use is displayed on the chart</p> <p>Auto trading can be enabled or disabled with one click (through the AT status switch)</p> <p>Order status informational message popups</p> <p>Automated/Manual order confirmation modes</p> <p>Audio alerts</p> <p>It is possible to set timer to disconnect auto trading on connection loss after the specified period</p>
Auto Trading Switch in the Status Line	<p>Shows auto trading status: On/Off, Sync/Async</p> <p>Fast access to AT settings from the chart. Auto trading can be turned on/off with one click</p> <p>Centralized access to AT/Strategy Properties</p> <p>Auto trading status switch can be displayed, hidden, dragged to a new position</p> <p>Settings can be saved for every chart window; it is possible to save them as the default ones.</p> <p>The switch hint contains the following information: Auto trading - On/Off/Disabled; Require order confirmation - On/Off; Mode - Sync/Async; Current Broker - Name</p>

Automated Trading	
Auto Trading with Interactive Brokers	Supported order types: Market / Stop / Limit / OCO / Bracket (or stop-loss and profit target)/take profit)
	AON execution support for entries/exits (separate)
	3 options for time in force: DAY, GTC, IOC
	It is possible to use data from any provider to execute orders via InteractiveBrokers
	Trading through advisor accounts is supported
	It is possible to trade the same symbol from different charts
Sync Trading Mode	Orders in MultiCharts are fully synchronized with orders at the broker
	Order execution time and price are guaranteed
Async Trading Mode	Orders in MultiCharts are independent of orders at the broker
	Unfilled limit and stop orders can be converted into market orders (Entries/Exits separated)
	Conversion timer
	Customizable initial market position
Optimization	
Optimization Modes	Exhaustive (Brute-force)
	Genetic algorithm (with 11 adjustable parameters)
General	The number of simulations is calculated before optimization is started
	Time remaining till optimization completion is calculated and displayed
	In the brute-force optimization, it is possible to limit the number of the best results to be displayed (up to 100,000 based on 18 parameters) for better view
Custom Fitness Function	It is possible to run optimization based on any user-defined formula comprised of any of the 18 optimization criteria (in combination with any operators/structures available in MSFT JScript)
	No limitations on the code length
	Custom functions can be different for genetic and exhaustive algorithms
Strategy Optimization Report	18 optimization criteria, inputs, and custom criteria
	Optimization results can be sorted by 3 criteria at the same time
	Ascending/descending sorting is supported
	Optimization results can be exported to .CSV files (with auto date and time in the file name)
3D Optimization Charts	18 plotting criteria (+ inputs)
	Free 3D optimization chart rotation
	Adjustable water level
	3D optimization chart can be saved and imported
	Several 3D charts can be overlaid
Drawing Tools	
General	Drawing tools maintain their coordinates when the chart interval is changed to another resolution and then back to the original one
	Snap mode (automatic snapping) / drawing mode are supported
	Every drawing tool has its own cursor
	Every tool can be previewed before being placed
	Drawing tools support alerts
	Drawing tools can be used in any subchart within a chart window
	The time coordinate of drawing tools is calculated up to the seconds
	Drawing tools can be hidden and then re-displayed
	It is possible to create multiple instances of the same drawing tool type (the number of instances is virtually unlimited)
	Each drawing tool instance can have individual settings
	21 built-in drawing tools are available
	16 of the available drawing tools can be cloned (all tools except: Time Line, Regression Channel, Fibonacci Time Zones, Fibonacci Trend-based Time Lines, and Retracement Calculator)
Custom Text Labels	Font/font style/font size; 4 effects; font color/back color; horizontal/vertical alignment; 6 character sets are available
Andrews' Pitchfork	Takes 3 clicks to plot; handle and tines: the drawing tool coordinates and style can be modified
Arc	Takes 2 clicks to plot; the full arc can be displayed; trendline and arcs: co-ordinates and style can be modified
Arrow Down	Takes 1 click to plot; arrow style: 14 styles, 7 sizes, color; text label: complete formatting set available; arrow coordinates can be modified
Arrow Up	Takes 1 click to plot; arrow style: 14 styles, 7 sizes, color; text label: complete formatting set available; arrow coordinates can be modified

Drawing Tools	
Ellipse	Takes 2 clicks to plot; line (border) style: color/line style/line width; fill style: color, 8 fill patterns; coordinates can be modified (for diagonal points)
Equidistant Channel	Takes 2 clicks to plot; line style: color/line style/line width; extend left/right feature; changeable direction; reflections feature (up to 10); coordinates can be modified; distance between lines can be modified
Fibonacci Time Zones	Takes 1 click to plot; configurable line style for baseline/lines: color/line style/line width; configurable line labels (3 alignment types, font style); base line coordinates can be modified
Fibonacci Trend-Based Price Extension Lines	Takes 3 clicks to plot; independent line style for each of the 13 lines: display/color/line style/line width; configurable line labels (3 alignment types, font style); show price/percent value feature; trend start, trend end, retracement end coordinates can be modified
Fibonacci Trend-Based Time Lines	Takes 2 clicks to plot; independent line style for each of the 11 Lines: display/color/line style/line width; configurable line labels (hide/display, 3 alignment types, 2 orientation types, font style); 2 coordinates can be modified
Fibonacci Retracement Price Lines	Takes 2 clicks to plot; independent line style for each of the 12 lines: display/color/line style/line width; extend left/right feature; configurable line labels (3 alignment types, font style); show price/percent value feature; 2 coordinates can be modified
Fibonacci Speed/Resistance Arcs	Takes 2 clicks to plot; independent line style for each of the 12 lines: display/color/line style/line width; display full arcs/divide time/price separately feature; configurable line labels (hide/display, font style); show price/percent value feature; 2 coordinates can be modified
Fibonacci Speed/Resistance Fan	Takes 2 clicks to plot; independent line style for trendline/grid/8 lines: display/color/line style/line width; divide time, divide price, hide time, hide price options; configurable line labels (hide/display, font style); 2 coordinates can be modified
Gann Fan	Takes 2 clicks to plot; independent line style for each of the 9 lines: display/color/line style/line width; configurable line labels (hide/display, font style); coordinates can be modified; configurable points per bar value
Gann Square	Takes 2 clicks to plot; independent line style for each of the 11 lines: display/color/line style/line width; configurable line labels (hide/display, font style); 2 coordinates can be modified
Horizontal Line	Takes 1 click to plot; line style: color/line style/line width; custom text label/current price value; coordinates can be modified
Rectangle	Takes 2 clicks to plot; line (border) style: color/line style/line width; filling style: color, 8 filling patterns ; diagonal points coordinates can be modified
Regression Channel	Takes 2 clicks to plot; independent line style for regression/upper channel/lower channel lines: display/color/line style/line width; extend left/right feature; configurable line labels (hide/display, font style); 4 prices as calculation base; 4 calculation types; coordinates can be modified
Retracement Calculator	Takes 3 levels plotted; symbol/price 1/price 2/price 3/retracement values displayed
Text	Takes 1 click to plot; custom text field; font/font style/font size; 4 effects; font color/back color; horizontal/vertical alignment; 6 character sets
Time Line	Takes 1 click to plot; line style: color/line style/line width; configurable line labels (3 alignment types, font style); coordinate can be modified
Trend Line	Takes 2 clicks to plot; line style: color/line style/line width; extend left/right feature; 4 calculation types; coordinates can be modified
Studies	
General	Over 180 built-in indicators are available
	Over 120 signals are available
	22 built-in show-me studies with alerts are available
	19 built-in paint bar studies with alerts are available
	Codes of built-in indicators (studies) can be modified
	Inputs of built-in indicators (studies) can be modified
	World's largest library of studies is available: 5000+ indicators and signals (free and commercial on the Internet)
	Supports show me/ paint bar behavior
	MarketProfile (available on the Internet for free)
	Alerts on studies are available
	Study on study calculation (through inputs) is supported
	Silent calculation/alert mode (hiding/re-displaying)
	Changeable visual order: 4 actions - Send to back/Send backward/Bring forward/Bring to front
	Virtually unlimited number of inputs
	3 input types: Numeric, True/False and String

Studies	
Indicators	Configurable scaling
	Configurable alerts
	Configurable volume profile based on the indicator
	Configurable max number of bars the study will reference
	It is possible to choose which price series the indicator will be based on
	It is possible to choose which subchart the indicator will be plotted in
	Update-on-every-tick mode is supported
	Update-on-every-bar mode is supported
	40 preset and over 16 million colors for the full true color palette are available for any indicator plot
	8 plot types: line, histogram, point, cross, bar high, bar low, left tick, right tick
	Each line plot type has 6 line styles
	Each plot type has 7 weights for solid line plot type style
	Last price marker (independent settings for each plot)
Signals	Independent styles for buy entry/sell entry/buy exit/sell exit marks
	Intra-bar order generation is supported
	3 intra-bar order generation modes (limit each order command per bar/limit signal per bar, unlimited)
	Arrow style: 14 styles, 7 sizes, 40 preset/16 million colors
	Tick style: 14 styles, 7 sizes, 40 preset/16 million colors
	Signal label: visible/invisible mode, 40 preset/16 million colors
	Number of contracts label: visible/invisible mode, 40 preset/16 million colors
Power Language	
Performance	Power Language supports over 430 built-in keywords/functions that can be used to develop indicators and strategies
	14 portfolio backtesting functions are supported
	33 arrow drawing functions are available
	The number of inputs in a study is unlimited
	The number of variables in a study is unlimited
	The size of a study file can be up to 1 MB
	A study can be up to 10,000 lines long
	A study can have up to 999 plots
	Studies are stored as compiled/executable code (no interpreted code is used)
Study Protection	It is possible to protect studies with a password
	It is possible to have indicators compiled as a binary code (making it impossible to fully restore the source code)
Supported Interfaces	COM interface is supported
	DLL interface is supported
	TS2000i DLL SDK is supported
	TS8 DLL SDK is supported
	Custom DLLs are supported (written in C/C++/C#/VB/Delphi)
Add-Ons	AccuracySR, CurrenSys, Decision Bar, Jan Arps, Jerry War, HawkEye, NexGen, PowerSwings, Roy Kelly, Trade Mechanics, TrendLine Trader
Miscellaneous	Programmable arrow drawing for drawing tools
	Programmable font properties for drawing tools
	Dynamic file names when the data is printed into a file
Power Language Editor	
General	There are no limitations on the length of code lines
	Intellisense behaviour
	Inline syntax checking
	It is possible to open several EL files with one click
Study Formats Supported by Study Import	ELA
	ELS
	ELD
	PLA
	XML
Study Formats Supported by Study Export	Studies can be exported as PLA (with the optional password protection) or XML files
	Studies can be exported as highly secure read-only SEF files (compiled as a binary code)

Real-time Market Scanner and Screener	
Multi-Core CPU support	All available processors (cores) are used to calculate indicators
Real-Time Data	Timer-based calculations are supported (the interval length can vary from 1 sec up to 600 sec)
Window Grid Capacity	Up to 5000 symbols (rows)
	Up to 10 indicators (each indicator can have up to 10 plots)
	Up to 100 plots in total
Windows Copying	It is possible to copy scanner windows with all their settings and properties
	A copied scanner window can be pasted into any MultiCharts instance
Detachable Windows	Scanner windows can be detached
Grid Features	The insert/format/remove actions can be applied to separate symbols and studies
	The remove action can be applied to all symbols and all studies
	The following keys are supported for moving across the grid: LEFT ARROW \ RIGHT ARROW \ UP ARROW \ DOWN ARROW \ PAGE UP \ PAGE DOWN \ HOME \ END \ CTRL+HOME \ CTRL+END
	It is possible to use hot keys to insert symbols, insert indicators, delete symbols
	Configurable grid columns: columns can be dragged and dropped, the column width can be changed manually or auto-adjusted
	It is possible to link scanner windows to chart windows (activating any of the scanner symbol cells results in this symbol being displayed in the linked chart)
Symbol Sorting	It is possible to sort symbols within scanner by up to 3 criteria at the same time
	Symbols can be sorted in ascending or descending order
Sorting Trigger	Double-clicking on the table header results in symbols being sorted
	Time-based sorting is available (if automated sorting is enabled)
Multi-Editing	It is possible to bulk-insert symbols
	An indicator can be formatted for all the symbols in the scanner window
	The resolution can be formatted for all the symbols in the scanner window (as well as QuoteField, Sessions, BuildVolumeOn, time zone)
Indicator Features	10 default studies are available: Last, Net Chg, Net % Chg, Bid, Ask, High, Low, Volume Today, ADX, Average True Range
	Adjustable precision for indicator values; it is possible to display 0 to 9 decimal places
	Text color (displayed indicator value colors) in each cell is regulated through PowerLanguage Editor (the Indicator Properties dialogue)
	It is possible to open an indicator code in PLEditor with one click
	Each plot of each indicator is displayed in a separate column
	Each plot can be displayed/hidden
Alerts	The same indicator can have different parameter settings for different symbols with the same scanner window
	A click on the popup hint activates the scanner window where the alert was triggered

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