ForexGridMaster

Intelligent Trading Strategies

ForexGridMaster Advanced Version 6.0 – User Manual

ForexGridMaster MetaTrader4 Expert Advisor User-Guide -- updated May 2018
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Introduction to ForexGridMaster Advanced

ForexGridMaster goes beyond the normal limits of MetaTrader 4 from MetaQuotes, and is built with Industrial Strength code to put it on the leading edge of automated Forex trading. It truly is the Rolls Royce of grid trading systems.

ForexGridMaster Advanced EA (Expert Advisor) was developed to enable traders to design and trade any number of their own automatic trading system strategies, as well as those created and shared by others. All ForexGM Advanced input settings are documented and easily configured by the trader. ForexGM was primarily designed as a tool to develop and fine-tune algorithmic grid trading strategies that profit from price movements, small or large, in either direction -- trend, counter-trend, range, scalping, news, or breakout trading. ForexGM is also very versatile for precision semi-automatic manual trading, especially scalping. We are open to your ideas and adding new features to ForexGM that promise higher and safer profits. Sample strategies and results are posted on the Performance Page of the ForexGM web-site. Optimization Reports with viewing and download links for some preset strategy files are provided for sharing at FORO (ForexGM Optimization Reports Online). Please note that these links refer to results from earlier versions of ForexGM.

Matching specific ForexGM strategies with the most appropriate brokers can make a big difference to your bottom-line, especially for scalping strategies. We have traded with more than twenty brokers since 2002, and the choices continue to improve in favour of traders. Brokers are becoming more competitive, traders more aware, and regulatory agencies more watchful. Now it is the norm to expect low spreads (1 pip or less for EURUSD), no or low commissions, no re-quotes, instant execution, no trade restrictions such as pending order distance from current price, 0-1 pip stop loss, 1 ms to 10 ms (or less) latency from VPS to broker server, etc. These are all important aspects of Forex to learn and use to your advantage.

ForexGridMaster Advanced is user-friendly, and is also a very sophisticated software program with many options that require time and practice for a user to fully appreciate all the possibilities. Be warned that the vast number of combined settings with endless scenarios that result, may trigger a lot of brain-storming and fun. Gamers, take note.

ForexGridMaster User Guidelines

ForexGM Latest Build:

At the time of writing, the current version of ForexGM Advanced is v6.01 build 44. It will run on MetaTrader 4.00 build 1090 and above.

ForexGM Licensing:

ForexGM Advanced (full version) is licensed to a trader's Account-Name, allowing up to 3 real-money accounts and 5 demo-accounts. ForexGM Advanced trial-version only works on demo-accounts. If any License changes are required, these can be made by logging into your account at [EAfactory](#).

Account Currency and Normalization:

ForexGM can trade any Account-Currency... USD, EUR, GBP, JPY, CHF, AUD, etc. ForexGM also integrates conversion-pair currency calculations (Normalization). This enables more accurate results when using different Account-Currencies trading the same strategy and same currency-pair on demo and real money accounts, or in Strategy Tester. MetaQuotes does not yet acknowledge this issue and consequently Strategy Tester results without Normalization can sometimes be inaccurate. For example, when trading AUDNZD using a USD Account-Currency, the NZDUSD is the conversion-pair (ratio of Account-Currency USD to the NZD Quote-Currency).

This means that in Strategy Tester the M1 historical data must be loaded for NZDUSD as well as AUDNZD so that ForexGM Advanced Normalization can provide the most accurate back-testing results. In Strategy Tester, the NZDUSD price action is displayed on the bottom right of the chart. Same example but on a real money account, the NZDUSD must also be listed in the Market Watch panel so that ForexGM will integrate the NZDUSD conversion-pair price action in real time as well. Trading AUDNZD with NZD as the account-currency does not require conversion, and when trading AUDNZD with AUD as the account-currency, the conversion-pair is AUDNZD itself.

Decimal Places and Pips:

ForexGM Advanced automatically detects whether the broker uses 2, 3, 4 or 5 decimal places for price quotes. As an example, Take-Profit Pips can be set to 17 pips regardless of whether the price quotes use 2, 3, 4 or 5 decimal places. In the case of the EURUSD as one example of 5th place decimal pricing, the 4th place decimal is the pip and the 5th a fraction of a pip (called a point). If the EURUSD moves from 1.37010 to 1.37020, then it has moved 1 pip or 10 points. If it moves from 1.37010 to 1.37011, then it has moved 1/10th of a pip or 1 point. For currency-pairs with 3 decimal places, such as the USDJPY, if the price moves from 95.700 to 95.710, then it has moved 1 pip or 10 points, and if from 95.700 to 95.701, then it has moved 1/10th of a pip or 1 point.

For trading instruments like Stocks, CFDs or crypto-currencies, the concept of a "pip" is less well defined. When dealing with anything other than Forex, ForexGM normally treats a pip as 1 unit of quote currency – e.g. BitCoin quoted in US dollars would use 1 pip = US$1.00.

Settings Changes:

When starting a new strategy or making major changes to an existing one beyond small variations to settings that can be changed on-the-fly, it is best to rely on the philosophy, "New Strategy >> New Chart". Removing ForexGM from an old chart is ULTRA important because it clears the Global Variables associated with that particular strategy on that particular chart. To close associated trades, use the MT4 "One-Click Trading Mode" for fast delete of trades or perhaps the CloseAllNow option if the ForexGM EA is still functional on the chart.

Time-Frames:

ForexGM Advanced strategies are not time-frame dependent, meaning that any ForexGM strategy can be traded on any time-frame and the only difference will be how well the trading action can be viewed. We recommend using ForexGridMaster on the M1 time-frame for maximum visibility, and switch time-frames as desired since this will not disrupt normal ForexGM function. Pending orders and open trades will also display on other charts using the same currency-pair.

Leverage:

Some brokers will allow as much as 1:500 leverage or more on their accounts. This means that ForexGM can trade a full standard lot of $100,000 using only $200 on margin, which is excellent for ForexGM, especially when trading for high profit. Most grid-trading strategies need a healthy margin for flexibility, especially for Portfolio trading. The leverage on the account that ForexGM is trading can be seen in the Experts log-file, usually a line or two after ForexGM has been initialized. High leverage can be dangerous if a trader is not experienced and well aware of potential negative consequences when setting strategies and managing money.

Closing Orders:

Whenever many open or pending orders are triggered to close at the same time by Close-Run settings, it takes time for the open trades and pending orders to all close. Price is moving continuously, so the closing prices will not always be exactly those requested. In normal market conditions, the difference is usually relatively small.

Many Simultaneous Transactions:

The more open-trades and pending-orders there are on an active chart, the greater the chance of delayed execution, especially if the latency of trade execution is more than 50 milliseconds. Also, not all brokers are the same. There are many levels of technology involved -- the broker and their server, their MetaTrader environment, the computer that ForexGM Advanced trades from, Internet connection, VPS environment, bank-feeds to the broker, etc. MetaTrader4 executes only one line of code at a time per chart, and although infrequent, glitches can occur, and it is important to keep a watchful eye until reliability has been proven.

We strongly recommend that all ForexGM strategies be first traded on a demo-account, and also back and forward-tested using Strategy Tester with at least 2 year's tick-data. This will allow the trader to become familiar with the large number of ForexGM settings and how they combine to produce effective and profitable strategies. Best to start small when trading a real-money account. MetaTrader brokers are not all equal, and different brokers may produce different results because of certain parameters they have set for their environment. However, ForexGM Advanced is capable of trading reliably on most broker platforms for an indefinite period of time.

ForexGM EA Smiley-Face: ☺ ⇨ ☹

While ForexGridMaster is active and able to successfully transact with the broker's server, a small smiley-face icon displays at the top right of the chart window. Click on that icon to open ForexGM's properties panel. Alternatively, right-click in any clear area of the chart and in the pop-up panel that shows, choose "Expert Advisors > Properties". If an emergency situation arises and ForexGM cannot be accessed through property settings, clicking the AutoTrading button on the top toolbar will disable ForexGM. Note that the AutoTrading button will disable all EAs currently attached to charts in the terminal, not just the EA on the active chart. A subtle change in the button-image indicates its status, and, because of its importance, ForexGM also displays additional information to alert the trader when trading is not permitted. If all else fails, simply close the chart window and any open trades and pending orders might need to be closed or deleted manually. When ForexGM is inactive, the smiley-face turns red to indicate some user intervention may be required.

Preset Strategy Files:

When creating strategies for ForexGM Advanced using the input settings described below, they can be saved as preset files in the "[MT4 Data Folder]\MQL4\Presets" default directory, or "[MT4 Data Folder]\tester" directory when using the Strategy Tester. To use a particular set-file for trading or testing, open ForexGridMaster on a chart and then "Load" the preset file from the "Inputs" tab. ForexGM preset files can also be saved and shared with others. It can be useful to name preset files to identify key elements of the strategies to which they relate.

As an example, a set-file could be named "audnzd_bsct5-s0.05_lsp0.015-ip16.2_tp21_m990-3_crppbts0.3-ts0.0001_ce25-us100k.set". This file would refer to a Buy-Sell Counter-Trend strategy for trading the AUDNZD pair with *Main Grid Spacing* = 5 pips, *Main Grid Spacing Step* = 0.05 pips, *Main Lot-Size(Proportional)* = 0.015, *Main Lot-Size Increase Percent* = 16.2, *Main Take-Profit Pips* = 21, *CR Profit Percent Before TS* = 0.3 with *CR Trail-Stop Percent* = 0.0001 and works best trading at least $25,000 Chart-Equity of US $100,000 Account-Currency. This might seem quite long-winded, but for a large number of strategies, it could be worth the effort.

Sharing Strategies:

Preset ".set" files can be shared directly with other traders, or online using the FORO system. Our hope is to have many traders creating, back-testing and optimizing reliable winning strategies for all to share.

Back-Testing:

For back-testing ForexGM, use the M1 time-frame (Tick-data) to obtain the most accurate and reproducible results. In the Tools > History Center menu, select Currency-Pair > 1 Minute (M1) and click "Download" to load the data from MetaQuotes into the terminal. Trading a real-money account without having done any back-testing is certainly not recommended. However, be aware that the history-data downloads for some currency-pairs from MetaQuotes are not always accurate and complete.

The MetaTrader 4 Strategy Tester is known for its peculiarities, not the least of which is the way it interprets Spread values. Theoretically, Spread is specified in "Points", which should refer to the least-significant digit in the quoted price. Some brokers offer trading in crypto-currencies, and this can result in very high Point values for Spread causing the Tester to behave unpredictably. Best method to check if a chosen Spread is realistic is to set both Bid and Ask lines visible on the test chart, and compare those with the Bid-Ask lines shown on an active chart.

ForexGridMaster Input Settings Summary

These trader input settings listed here are linked to their detailed descriptions below. The value shown for each setting corresponds to the default setting in ForexGM at the time of writing. The AUDNZD default strategy is for demonstration purposes only, but can be traded as is on the AUDNZD and also the NZDCAD and AUDCAD with minor adjustments. When correctly installed, ForexGM Advanced EA robot will show in the Experts folder on the Navigator panel, which is normally displayed on the left side of the MetaTrader4 terminal. Drag and drop the robot on the chart with the currency-pair you want to trade, and the Properties panel will open allowing modification of any of the settings listed below. When set as desired, click the OK button and the ForexGM strategy will start trading Run 1 on arrival of the next tick from the broker's server.

GENERAL CHART SETTINGS

EA Number	65282
Strategy File	a6_audnzd_bsct5-s0.05_lsp0.015-ip16.2_tp21
Strategy Info	m990-3_crppbts0.3-ts0.0001_ce25-us100k
Chart Equity Percent	100
Main Grid	(Disabled; Fixed-Center; Moving-Center)
Hedge Grid	(Disabled; Fixed-Center; Moving-Center)

MAINGRID GENERAL INPUTS

Main Order Type	(Buy-Sell; Buy-Full; Sell-Full; Buy-Half; Sell-Half)
Main Trend Direction	(Trend; Counter-Trend)
Main Grid Spacing	5
Main Max Pending Buy Orders	1
Main Max Pending Sell Orders	1
Main Max Open Buy Trades	60
Main Max Open Sell Trades	60
Main Center-Zone Pips	0
Main Grid Order Replacement	true
Main Open At Current Price	(Not-Used; Buy-Order; Sell-Order)
Main Hedging Option	(Hedging-Option-Off; Pause-Main-On-Hedge; Close-Main-On_Hedge)

MAINGRID ORDER INPUTS

Main Lot-Size	0.015
Main Lot-Size Scaling	(LotSize-Constant; LotSize-Proportional)
Main Take-Profit Pips	21
Main Stop-Loss Pips	0
Main Break-Even Stop (BES)	false
Main Profit Pips Before BES	0
Main Break-Even Stop Plus Pips	0
Main Trail-Stop Pips (TS)	0
Main Profit Pips Before TS	0
Main Take-Profit Percent	0.0
Main Stop-Loss Percent	0.0
Main Trail-Stop Percent (TSP)	0.0
Main Profit Percent Before TSP	0.0
Main Take-Profit Money	0.0
Main Stop-Loss Money	0.0
Main Trail-Stop Money (TSM)	0.0
Main Profit Money Before TSM	0.0

MAINGRID FIXED-CENTER INPUTS

Main Grid-Spacing Step	0.05
Main Grid-Increment Percent	0.0
Main Lot-Size Increase Amount	0.0
Main Lot-Size Increase Percent	16.2
Main Lot-Size Increase Fibonacci	false
Main Take-Profit Pips Step	0.2

HEDGEGRID GENERAL INPUTS

Hedge Order Type	(Buy-Sell; Buy-Full; Sell-Full; Buy-Half; Sell-Half)
Hedge Trend Direction	(Trend; Counter-Trend)
Hedge Grid Spacing	6
Hedge Max Pending Buy Orders	1
Hedge Max Pending Sell Orders	1
Hedge Max Open Buy Trades	6
Hedge Max Open Sell Trades	6
Hedge Center-Zone Pips	360
Hedge Grid Order Replacement	true

HEDGEGRID ORDER INPUTS

Hedge Lot-Size	3.0
Hedge Lot-Size Scaling	(LotSize-Constant; LotSize-Proportional)
Hedge Take-Profit Pips	21
Hedge Stop-Loss Pips	0
Hedge Break-Even Stop (BES)	false
Hedge Profit Pips Before BES	0
Hedge Break-Even Stop Plus Pips	0
Hedge Trail-Stop Pips (HTS)	0
Hedge Profit Pips Before HTS	0

HEDGEGRID FIXED-CENTER INPUTS

Hedge Grid-Spacing Step	0.1
Hedge Lot-Size Increase Percent	6.0

GRID MOVING-CENTER INPUTS

Moving-Center Buy-Sell Overlap	false
Moving-Center Buy-Sell Offset Pips	0

TIME AND DAY INPUTS

Grid Start Time	ignore
Grid Stop Time	ignore
Trade Monday	true
Trade Tuesday	true
Trade Wednesday	true
Trade Thursday	true
Trade Friday	true
Trade Sunday	true
Close For Sunday-Friday Time	ignore
Friday Close Time	ignore
Friday Close Profit Only	true
Friday Close Time Period	120

MISCELLANEOUS INPUTS

Lot-Size Normalized	true
Show Comments	true
Log Activity	true
Log Debug Info	false

SPIKE CONTROL INPUTS

Spike Option	(Spike-Main-Off; Pause-While-Active; Pause-Until-Reset; Pause-Until-Retrace; Close-Main, Close-Run)
Spike Hedge Option	(Spike-Hedge-Off; Open-Hedge-On-Spike; Open-Hedge-On-Spike-Up; Open-Hedge-On-Spike-Down)
Spike Interval Seconds	990
Spike Pips per Interval	0
Spike Trades per Interval	3
Spike Pause Retrace Pips	0

AUTO-RESTART OPTIONS

Auto Restart After Profit	(Restart-Enabled; Restart-Disabled; After-Pips-Movement; After-Pips-Retrace)
Restart Seconds	0
Restart Pips Up or Down	20
Restart Pips Retrace	10
Auto Restart After Loss	(Restart-Enabled; Restart-Disabled; After-Pips-Movement; After-Pips-Retrace)
Restart Seconds	0
Restart Pips Up or Down	20
Restart Pips Retrace	10

CLOSE-RUN OPTIONS

CR Include Closed Trades Net	true
CR Total Profit Percent	0.0
CR Total Loss Percent	70.0
CR Trail-Stop Percent (TSP)	0.0001
CR Profit Percent Before TSP	0.3
CR Loss Money	0.0
CR Trail-Stop Money (TSM)	0.0
CR Profit Money Before TSM	0.0
CR Profit Pips	0
CR Loss Pips	0
CR Trail-Stop Pips	0
CR Hedge Profit Percent	0.0
CR Hedge Loss Percent	70.0
CR Price Maximum	0.0
CR Price Minimum	0.0

IMMEDIATE-CLOSE OPTIONS

Close Greater-Profit-Than	0
Close Greater-Loss-Than	0
Close Grid-Type	(Main-and-Hedge; Main-Grid-Only; Hedge-Grid-Only)
Close Orders-Type	(Buys-and-Sells; Buys-Only; Sells-Only)
Close Orders Now	(Close-None; Delete-Pending; Close-Trades; Close-At-Specified-Profit-Loss; Close-Run-Now)

Important - Some of the above settings can be changed on-the-fly. This means that if the EA properties-panel is opened while ForexGM is active, specific input settings can be modified without the need to remove the EA and reapply it to a chart. Settings that can be changed on-the-fly are generally those that will not change the basic trading strategy.

Important - There are more options in the ForexGM_Advanced.prf file to control various aspects of ForexGM – the information displayed on the chart; setting of Alerts; Aesthetics and more. A separate instance of this file is located in the Tester/File folder that applies to Strategy Tester runs. Note that the settings in this file apply to all instances of ForexGM that are installed on the various charts in the MT4 terminal.

Important - Be sure to back-test and walk-forward-test your strategies extensively in Strategy Tester for a year or more to fully appreciate the functionality of the settings and their combined effects. Trade with a demo-account before you trade a real money account. Please do not underestimate how important these steps really are. Be the master of your destiny. "Risk comes from not knowing what you are doing." -- Warren Buffet.

ForexGridMaster Input Settings Detail

ForexGM Advanced trades two types of grids, a Main-Grid and a Hedge-Grid (or second grid). Main-Grid and Hedge-Grid settings are mostly independent, except that Close-Runs are triggered by the net profit and loss calculations of both Main-Grid and Hedge-Grid trades combined. In addition, there are a few settings that connect the Main and Hedge grids, e.g. Main Hedging Option. Please note that the Hedge-Grid system is really a second grid system that doesn't have to be used for hedging, meaning that two grids can be traded on the same chart with each grid having its own unique characteristics. As a simple example, two grids could have the same settings except for different take-profit values – *Hedge Take-Profit Pips* = 15 and *Main Take-Profit Pips* = 21 could cover price action more effectively than a single grid strategy.

The values of settings listed below are those built in as the default for ForexGM Advanced at the time of writing. This Buy-Sell Counter-Trend strategy was tuned at some stage to be suitable for trading the AUDNZD pair. With a slight adjustment to the settings, it may work for other currency-pairs that have similar price action. In any case, the default strategy is for demonstration purposes only. Back-test and walk-forward test all ForexGM strategies over at least a 3 year historical period to gain a thorough understanding of how the strategy works and what the risks are before trading real money.

A few videos have been uploaded to the ForexGridMaster YouTube Channel to illustrate ForexGM in action. There is a demonstration of a back-test for a previous strategy that ran live YTD until August 30, 2014, with an explanation of the methodology as it trades. Also included is a video which goes into detail about the Spike Protection mechanism. Some of these videos may refer to previous versions of ForexGM, but we plan to provide updates in the near future.

We strongly recommend following the processes illustrated in the videos – it should help when customizing the strategies for a particular trading style, risk-tolerance, and goals. You may also want to activate the Hedge-Grid settings to hedge the Main-Grid, or use it as a second grid trading on the same chart. Portfolio trading can be set up by trading a second instance (or more) of ForexGM on a second chart (or more) and dividing Account deposit into sub-accounts using the Chart Equity Percent setting.

EA Number:

This input enables each instance of ForexGridMaster Advanced (ForexGM) to independently keep track of its own trades and calculations without influence from other instances of ForexGM, other EAs, or any manual trades. The *EA Number* should be unique for every EA instance running on the terminal, and because only one EA can be attached to a chart, the *EA Number* also uniquely identifies a chart. ForexGM's input settings affect only orders associated with the *EA Number* of the particular ForexGM instance. The *EA Number* can have any numeric value up to a maximum of 9 digits, as long as there is no conflict with other EAs.

ForexGM has several mechanisms to help prevent duplicate EA numbers – before accepting any modification to the settings, a check is made to see if there are other ForexGM instances already running with the chosen number. Any attempt to change an *EA Number* assigned to chart by a previous run of ForexGM will be rejected, thus helping to prevent unintentional loading of unrelated set-files. Global Variables are used to store persistent data related to each ForexGM instance, and it is recommended that ForexGM EAs and possibly their related charts are removed when no longer required. This setting cannot be changed on-the-fly.

Strategy File [STF]:

This field can contain any text up to a maximum of 64 characters. Text entered here will be displayed in the top line of the comments at the top right of a chart. You can type anything here, but a meaningful description can help when screen-shots are archived for future study. Text might relate to the set-file name and also contain some reference to the parameters driving the strategy. This setting can be changed on-the-fly.

Strategy Info [STI]:

As with the *Strategy File* setting above, any text can be entered, and it will be displayed on the second line of the chart comments. It might be useful to include additional details describing the particular strategy. This setting can be changed on-the-fly.

Chart Equity Percent [CEP]:

ForexGM instances can trade with a specific Chart Equity, which can be any amount from 0 to 100% of Account Equity. At the start of each run, Chart Equity is calculated from the current Account Equity and the CEP value. When set to the default 100%, all funds in the trading account are available to ForexGM for trading. Please note that this differs from the way Chart Equity was handled in previous versions where Chart Equity was set to a specific monetary value. CEP provides a simple mechanism to control money-management. Because Chart Equity is only determined at the start of a run, it can be changed on-the-fly to take effect when the next run commences.

Main Grid: (Disabled; Fixed-Center; Moving-Center)

When trading a *Fixed-Center* strategy, the center-line for the grid will be the current market Bid price when ForexGM starts each Run. However if Main Open At Current Price is enabled for either a Buy or a Sell, then the center-line will be half the Main Grid Spacing pips value away from the price that the Buy or Sell trade opened, and exactly between the first Buy or Sell slots of the Grid. For *Fixed-Center,* the grid center-line will remain at the same price for the duration of the Run and the rest of the grid will be based on that price. There are six settings specifically related to Fixed grids – MainGrid Fixed-Center Inputs The Grid Type cannot be changed on-the-fly.

Trading a *Fixed-Center* strategy, the Buy and Sell pending orders are kept separated from each other, Buys on one side of center-line price and Sells on the other, with no overlap allowed. As an example, when ForexGM Advanced trades a Buy-Sell Trend strategy, only pending Buy Stop orders can be placed above the center-line price and only pending Sell Stop orders can be placed below. If ForexGM was trading a Buy Trend Half-Grid, then only pending Buy Stop orders would be placed above the grid center-line. For a Buy Counter-Trend Half-Grid strategy, only pending Buy Limit orders are placed below the center-line.

A *Moving-Center* will change to always be the current moving market Bid price when you trade either a Buy or a Sell grid, or a Buy-Sell grid combined with *Buy-Sell Overlap* = true and *Buy-Sell Offset* = true. However, when trading a Buy-Sell grid with *Buy-Sell Overlap* = false, the *Moving-Center* option will place the center-line between the Buy and Sell orders, and will continue moving to maintain that relative position. Buy and Sell pending orders will be placed as close as possible to the moving center-line price according to the *Grid-Spacing* and the *Center-Zone Pips* settings. See the section illustrating how this works -- FixedCenter and MovingCenter Scenarios.

Some brokers do not allow pending orders to be placed within 5 - 20 pips (more or less) of market price, and so, depending on the *Grid-Spacing*, the initial grid position slots adjacent to grid center may not be filled with pending orders until the current price has moved away far enough to allow it. In the meantime, grid slots further away from the grid center-line are filled where possible according to the already established initial center-line price and other input parameters.

Hedge Grid: (Disabled; Fixed-Center; Moving-Center)

Disabled is the default where the Hedge-Grid is not activated, and all related hedge settings are ignored. A *Fixed-Center* or *Moving-Center* Hedge Grid can be created to either hedge an active Main-Grid or trade a second grid in parallel. The Hedge-Grid can also be traded on its own, the advantage being that for a *Fixed-Center* Hedge-Grid, the *Hedge Max Open Buy Trades* and *Hedge Max Open Sell Trades* can be set to zero and the number of grid slots is limited internally to 100, double the number permitted for the main grid. In most other respects, Main and Hedge grids operate in much the same way. This setting cannot be changed on-the-fly.

Note that Main-Grid and Hedge-Grid cannot both be disabled or no trading would take place. If the Spike Hedge Option is set to open the Hedge-Grid on a spike, the Hedge-Grid must be either *Fixed-Center* or *Moving-Center*.

MAIN GRID GENERAL INPUTS

These settings are used to create the structure of the Main Grid.

Main Order Type [MOT]: (Buy-Sell; Buy-Full; Sell-Full; Buy-Half; Sell-Half)

This input determines whether the trade orders placed by ForexGM Advanced are either All Buy orders, All Sell orders, or Both Buy and Sell orders, and also whether they are Half-Grid or Full-Grid. As an example, if the default *Buy-Sell* is selected to trade a Trend grid to capture profit in the direction of the price trend, then Buy Stop orders will be placed above grid center and Sell Stop orders below. If *Buy-Sell* is chosen with the Counter-Trend option, then Buy Limit orders will be placed below grid center and Sell Limit orders above. This setting cannot be changed on-the-fly.

Orders will be placed symmetrically on both sides of grid center when set to *Buy-Full* or *Sell-Full*, or one side only when set to *Buy-Half* or *Sell-Half*. *Buy-Sell* grids automatically trade two half-grids, with one half Buy orders and the other half Sell orders. This setting cannot be changed on-the-fly.

Here are some basic examples …

- You might wish to trade a Buy Trend grid to profit on price that is trending upwards. Choosing full-grid will place pending Buy Stop orders above the center-line price and pending Buy Limit orders below for either a *Moving-Center* or *Fixed-Center* strategy. For a half-grid, pending Buy Stop orders will be placed above the center-line price, but no Buy Limits below. Using half-grids when trend-trading in only one direction will reduce the number of open negative trades that accumulate over long price runs or spikes in the opposite direction of the trend. Depending on the *Grid-Spacing* and the strength of the market trend, you might be able to reduce the number of losing trades caused by retracements which open Buy Stops that follow the price downwards.
- If the price is expected to initially drop and then turn up shortly afterwards, an appropriate strategy would use a Buy, Counter-Trend, Half-Grid. This would place a half-grid of pending Buy Limit orders below the center-line, but no Buy Stops above.
- For a price that stays within a relatively well defined range, a strategy set for *Buy-Sell* and *Counter-Trend* should work well. The *Buy-Sell* strategy trades two half-grids, placing pending Sell Limit orders above the center-line, and pending Buy Limit orders below.

Main Trend Direction [MTD]: (Trend; Counter-Trend)

This input determines whether the grid is for a *Trend* or a *Counter-Trend* strategy. If *Main Order Type* is set to either Buy-Full or Sell-Full, the option is ignored. A *Trend* grid places Buy Stops above grid center (Buy Trend), or Sell Stops below grid center (Sell Trend) or both (Buy-Sell Trend). A *Counter-Trend* strategy places Buy Limits below grid center (Buy Counter-Trend), or Sell Limits above grid center (Sell Counter-Trend) or both (Buy-Sell Counter-Trend). If *Main Center-Zone Pips* is set non-zero, the top and bottom levels of the center-zone will be used instead of the grid center. This setting cannot be changed on-the-fly.

Main Grid Spacing [MGS]:

This input sets the distance in pips between each pending order grid-slot and the next grid-slot for orders of the same type (Buys or Sells). If the Main Center-Zone Pips setting is used, the first pending orders are placed at the edge of the zone, and *Grid-Spacing* applies from there. This setting cannot be changed on-the-fly.

Main Max Pending Buy Orders [MMPBO]:

This input determines both the number of pending Buy Limit or Buy Stop orders that the strategy will place at grid start, and the maximum number of pending Buy orders permitted at any one time. If either or both *Main Max Open Buy Trades* and *Main Max Open Sell Trades* are set to be greater than the default 1, then their values are used to determine the limit of open trade slots allowed, and the number of pending orders will be controlled accordingly. This means you cannot set MMPBO to a higher value than set for *Max Open Buy Trades*. If the number of open Buy or Sell trades reaches the limit but then decreases (one or more open trades are closed), then ForexGM will resume opening pending orders as dictated by the other strategy settings. ForexGM also limits the total number of open pending orders to a maximum of 100. However, be aware that some brokers may not allow that many open trades. This setting can be changed on-the-fly to a higher value but not lower.

Main Max Pending Sell Orders [MMPSO]:

This operates exactly like *Main Max Pending Buy Orders* above, but applies to pending Sell orders.

Main Max Open Buy Trades [MMOBT]:

When set to the default 0, then no Buy trades can be opened. Any other numeric value sets a limit on the maximum number of open Buy trades that ForexGM allows at any one time. Manual trades or other EAs with their own unique *EA Number* can operate on the same account without influence from this setting. Many brokers limit the total number of open orders in an account, but some do not -- check with your broker if you plan on heavy trading. This setting can only be changed on-the-fly when Main-Grid is set for *Moving-Center*. In this situation, for example with *Main Max Open Buy Trades* = 20, the total number of grid Buy slots (positions) that can be occupied by Buy orders on the Buy side of the grid is fixed at 20. Trade orders occupying any of those 20 positions can be opened, closed and replaced within a Run according to values set for other ForexGM inputs.

Main Max Open Sell Trades [MMOST]:

This operates exactly the same as *Main Max Open Buy Trades* above, but applies to Sell orders.

Main Center-Zone Pips [MCZP]:

When set to the default 0, this input is ignored. For a *Moving-Center* or *Fixed-Center* grid with *Center-Zone Pips* set to a number greater than 0, the Buy and Sell orders will be separated by at least the specified number of pips. For example, if *Center-Zone Pips* = 30, then no grid orders (pending or open) can occupy a slot inside that 30 pip zone. If a *Moving-Center* strategy is deployed, then the center-zone can move as the position of the Buys and Sells move. However, no grid orders (open or pending) can occupy a position within the MCZP. When trading a Half-Grid, say a Buy Trend strategy, then the exclusion zone extends to half the MCZP value from the grid center-line. This setting cannot be changed on-the-fly.

When trading a *Moving-Center* strategy, MCZP moves in the direction of price and closing orders -- if orders are closed within the current Run, the center-zone will be adjusted to maintain the separation between the Buy and Sell orders. For a *Moving-Center* grid on a Buy-Sell strategy with [Main Buy-Sell Overlap](#) set to true, MCZP must be disabled to allow overlaps to occur. However, when trading a *Fixed-Center* strategy, the center-zone will remain fixed in place for the duration of the Run, keeping Buys and Sells separated by the value set. There are a few examples of *Main Center-Zone Pips* for both *Fixed-Center* and *Moving-Center* grids in a later section – [FixedCenter and MovingCenter Scenarios](#).

Main Grid Order Replacement [MGOR]:

If set to true, when a Grid order has closed it will be replaced if the price returns to that same grid slot within the same Run. If false, then each order within a Run will only be activated once for any given grid position. This setting can be changed on-the-fly.

Main Open At Current Price [MOCP]: (Not-Used; Buy-Order; Sell-Order)

When set to *Not-Used*, this setting is ignored. Set to either *Buy-Order* or *Sell-Order*, an order is opened immediately at current price at the start of each Run. All other pending grid orders placed during the Run are adjusted to that price position. In other words, the immediately opened trade is part of the grid being traded, and therefore determines where the *Grid-Spacing* is anchored. For example, if *Main Center-Zone Pips* = 20 and a Buy is opened at 1.3000 for a *Buy-Sell Trend* strategy, then the center-zone is from 1.3000 to 1.2980 and the grid is structured around that price, the first pending Sell order slot being set at 1.2980.

Main Hedging Option [MHO]: (Hedging-Option-Off; Pause-Main-On-Hedge; Close-Main-On-Hedge)

Hedging is normally used to counter the negative effects of a long loss-making stretch in the main grid. It can be triggered to start trading after the main grid has reached some threshold. If hedging is set for a delayed start, for example with a wide *Main Center-Zone Pips* on a *Fixed-Center* grid, the MHO can be used to specify what happens to the Main-Grid when the first hedge trade is opened. The options available are to Pause or Close the Main-Grid, or just continue trading the Main-Grid as before. Note that it is probably unproductive to control the Main-Grid this way if the Hedge grid is configured to start trading almost immediately. This setting can be changed on-the-fly, but care should be taken if opting for *Close-Main-On-Hedge* if a Hedge-Grid is already active.

MAIN GRID ORDER INPUTS

These settings apply to all individual orders for both *Fixed-Center* and *Moving-Center* scenarios in the main grid. Some extra settings which apply specifically to *Fixed-Center* or *Moving-Center* are covered in following sections.

Main Lot-Size [MLS]:

This input sets the base lot-size for individual Buy and Sell orders placed within a particular Run. Most brokers allow a minimum lot-size of 0.01 which is 1/100th of the standard $100,000 lot-size, or $1,000 (using USD as example) and for ForexGM, 0.01, a micro lot, is the minimum lot-size that can be set. Some brokers require minimum lot-sizes 10 times higher to 0.10 ($10,000, a mini lot) in which case ForexGM will display a message that the value needs to be within broker limits before trading can continue. Brokers sometimes provide Mini Accounts with minimum lot-size of 0.01 which is 1/100th of the Mini Account lot-size of $10,000, or $100 in trade, a Nano lot. Brokers sometimes offer the option to trade Micro-Accounts with a minimum lot-size of 0.01 which is 1/100th of the Micro Account lot size of $1,000, or $10 in trade, a pico lot.

For *Fixed-Center* grids, the actual lot-size for individual orders within a Run can be controlled by *Main Lot-Size Increase Amount*, *Main Lot-Size Increase Percent*, or *Main Lot-Size Increase Fibonacci*. This setting cannot be changed on-the-fly for *Fixed-Center* grids. However, it can be changed for *Moving-Center* grids, but it will only affect new pending orders and not pending orders already placed.

Main Lot-Size Scaling [MLSS]: (LotSize-Constant; LotSize-Proportional)

The base lot-size for trade orders can remain constant for all Runs, or can change from Run to Run depending on the *Main Lot-Size Scaling* setting, either *LotSize-Constant* or *LotSize-Proportional*. *Main Lot-Size Scaling* cannot be changed on-the-fly.

If *LotSize-Constant* is selected, the base lot-size at the beginning of each Run is reset to *Main Lot-Size* [MLS]. When set to the default *LotSize-Proportional*, lot-size is set to MLS for the very first Run. On all subsequent Runs, the base lot-size is set at the start of each Run to be MLS increased or decreased by the ratio of Current-Chart-Equity to Original-Chart-Equity. However, if the calculated value is less than the MLS value set above, the lot-size will be set to MLS for each new pending order placed until the new calculations result in a lot-size larger than MLS. An exception to this rule could occur for Main_Grid *Fixed_Center* where lot-sizes are predefined for the slots and there might be a dip in equity causing a new lot-size calculation lower than MLS. The absolute minimum value for lot-size for any order is set by the broker, and ForexGM will apply this restriction if necessary.

LotSize Proportional can allow profits to compound when the equity curve is following an upward trend. On the other hand, it can also reduce losses for a less-positive equity trend. As an example, suppose account-equity starts Run 1 at $10,000 with Lot-Size = 0.10; *LotSize-Proportional*; *CR_ProfitPercent* = 10; and *CR_LossPercent* = 30. If the Close-Run is positive and reaches its equity increase profit target of 10% net of all open and closed trades within the Run (*CR Include Closed Trades Net* = true), then start equity for Run 2 will be $11,000, and Lot-Size will automatically be increased to 0.11. If the Close-Run was negative and the equity reduced 30% to $7,000, the Lot-Size for Run 2 would be decreased to 0.07.

Main Take-Profit Pips [MTPP]:

This input determines how many pips profit each of the individual trade orders will target. For example, you might be trading the EURUSD, and a pending Buy order is open at 1.3700 with *Main Take-Profit Pips* = 35. If the price reaches 1.3735, the trade will be closed by the broker capturing 35 pips profit (ignoring slippage). When set to 0, this input is ignored. For *Moving-Center* grid only, this setting can be changed on-the-fly, although it will only affect new pending orders and not pending orders already in place.

Main Stop-Loss Pips [MSLP]:

This determines the Stop Loss for each individual trade order. If set to the default 0, this input will be ignored. If for example you are trading the EURUSD and a trade order opens at 1.3700 with Stop-Loss Pips = 50, and if the price then drops to 1.3650, the trade will be triggered to close at a loss of 50 pips. This setting can be changed on-the-fly when trading a *Moving-Center* grid, and will affect new pending orders only, not pending orders already in place.

Main Break-Even Stop [MBES]:

When set to true, a break-even Stop-Loss will be set for each order according to the rules dictated by the additional settings *Main Profit Pips Before Break-Even Stop* and *Main Break-Even Stop Plus Pips*. Set to false, MBES is disabled and the associated settings are ignored. These settings can work in conjunction with *Main Profit Pips Before Trail-Stop Pips* described below. These settings cannot be changed on-the-fly.

Main Profit Pips Before Break-Even Stop [PPBBE]:

When MBES = true, this setting is enabled. If set to 10 as an example for an open pending order, and the price moves 10 pips into profit, a break-even stop is placed on the order so that a price retrace will close the order at break-even plus the value of the following BESPP parameter. This value can only be set to whole pips, not fractional pips.

Main Break-Even Stop Plus Pips [BESPP]:

The value in pips set here adds to the break-even stop. For example, if BESPP is set to 3 pips and PPBBE = 10 pips, it means that when an open order reaches its 10 pip profit target and MBES is triggered, a price retrace of 7 pips (10 – 3) will cause the order to close 3 pips in profit. This setting is useful to offset commission, swap fees or slippage.

Main Trail-Stop Pips [MTSP]:

This input determines the number of pips the trail-stop should be placed away from the open price. As an example, if MTSP = 50 and MPPBTS = 0, then a stop-loss is immediately set at 50 pips away from the pending order open price. That stop-loss will then trail pip by pip as the price moves in a profitable direction. If price moves in a losing direction then the trailing stop-loss will remain stationary and close the order when the stop-loss price is reached. Another example -- if MTSP = 9 and MPPBTS = 36, when each individual order is 36 pips into profit, the trail-stop of 9 is triggered and 27 pips of profit will be locked in. If the price keeps moving in a profitable direction, the trail-stop will follow pip by pip. Let's say that an individual order moves 50 pips into profit and then retraces 9 pips. The trade would then close out with 41 pips profit.

Main Profit Pips Before Trail-Stop Pips [MPPBTS]:

If set to the default 0 pips, this setting is ignored. Set to a value such as 36 as an example, each of the individual orders that are opened will need to move 36 pips into profit before *Main Trail-Stop Pips* is activated. If MPPBTS = 0 then MTSP will determine the initial trailing stop-loss. This functions differently to Stop-Loss Pips which fixes the Stop-Loss on the broker's server. This setting cannot be changed on-the-fly.

Main Take-Profit Percent [MTPPC]:

If set to the default 0, this setting is ignored. For a non-zero value, the order will close when profit for the particular order reaches this percentage of the current chart-equity. As an example, if MTPPC = 1.5, 1.5% of chart-equity is the profit target for the order.

Please note an important difference here – *Main Take-Profit Pips* is a target registered on the broker's server, whereas *Main Take-Profit Percent* is controlled by ForexGM in stealth-mode and is not visible to the broker.

Main Stop-Loss Percent [MSLPC]:

If set to the default 0, this setting is ignored. For a non-zero value, the order will close when loss related to the particular order reaches this percentage of the current chart-equity. As an example, MSLPC = 1.0 would cause the order to close when the money-amount loss equals 1.0% of chart-equity. This stealth-mode setting can be changed on-the-fly.

Main Trail-Stop Percent [MTSPC]:

This setting is similar to Main Trail-Stop Pips, but both settings cannot be active at the same time. It defines the trail-stop in terms of Chart-Equity percentage, and can be used in conjunction with the *Main Profit Percent Before Trail-Stop Percent* setting. As an example, if MPBTPC = 0.35 and MTSPC = 0.05, then the stop-loss money value would be equal to 0.05% of the current chart-equity. That money stop-loss determined by 0.05% percent of equity will then trail if the price moves in a profitable direction. If the price moves in a losing direction, the trailing percent stop-loss will remain fixed and close the order when the target is reached. Now if MPBTPC = 0.55 and MTSPC = 0.05, then when each individual order has attained an amount of profit equal to 0.55% of current chart-equity, the trail-stop is triggered and profit is locked in. If the price keeps moving in a profitable direction, the trail-stop will follow by a value equal to 0.05% of the chart-equity. This stealth-mode setting cannot be changed on-the-fly.

Main Profit Percent Before Trail-Stop Percent [MPBTPC]:

If set to the default 0 percent, then this setting is ignored. For a non-zero value, such as 0.35 as an example, then each of the individual open orders must be 0.35% of chart-equity into profit before the *Main Trail-Stop Percent* is activated. If MPBTPC = 0, then MTSPC becomes active as soon as the order is opened. This percent setting also operates in stealth-mode and cannot be changed on-the-fly.

Main Take-Profit Money [MTPM]:

This setting is similar to *Main Take-Profit Percent* except that the profit target is a fixed amount rather than a percentage of chart-equity. If set to the default 0, this setting is ignored. For a non-zero value, the order will close when profit for the particular order reaches the money amount specified. It is important to appreciate that this quantity will not automatically scale with equity, and may need to be adjusted manually as equity changes. As an example, if MTPM = 50, the order will close when profit reaches 50 units of account-currency. *Main Take-Profit Money* is a target maintained within ForexGM and is not visible to the broker. It can be changed on-the-fly.

Main Stop-Loss Money [MSLM]:

If set to the default 0, this setting is ignored. For a non-zero value, the order will close when loss related to the particular order reaches this amount in account-currency units. As an example, MSLM = 75 would cause the order to close when the money-amount loss equals 75 units of account-currency. This stealth-mode setting can be changed on-the-fly.

Main Trail-Stop Money [MTSM]:

This setting is similar to *Main Trail-Stop Pips* and *Main Trail-Stop Percent*, but these settings are mutually exclusive and should not be used together. If *Main Trail-Stop Percent* and *Main Trail-Stop Money* are both specified, MTSPC will take precedence. MTSM dictates the number of account-currency units used for the trail-stop money value, and can be used in conjunction with the following MBTSM setting. As an example, if MTSM = 50 and MBTSM = 100, then the stop-loss money value would be equal to 50 units of account-currency. If price moves in a profitable direction, the actual profit required to close the order on a retrace, is increased. If the price moves in a losing direction, the trailing money threshold will remain constant and the order will close when the target is reached. This stealth-mode setting cannot be changed on-the-fly.

Main Profit Money Before Trail-Stop Money [MBTSM]:

If set to the default 0, this setting is ignored. For a non-zero value, such as 200 as an example, then each of the individual open orders must reach a profit of 200 account-currency units before *Main Trail-Stop Money* is activated. If MBTSM = 0, then MTSM becomes active as soon as the order is opened. This setting also operates in stealth-mode and cannot be changed on-the-fly.

MAIN GRID FIXED-CENTER INPUTS

The following parameters modify grid orders when the Main-Grid = *Fixed-Center*, and are ignored for a *Moving-Center* grid. All these settings depend upon the slot position where an order is initially placed. If Main Grid Order Replacement is true, then any order replacing one that was closed earlier in the Run will have exactly the same characteristics as the order it replaces.

Main Grid-Spacing Step [MGSS]:

When set to the default 0, this input is ignored. Set to a non-zero value, the space between grid-slots is increased incrementally by that amount as the grid moves out from its center-line. The value can be either a whole number or a decimal representing fractional pips. For example, if trading a Buy-Sell grid with *Grid-Spacing* = 10 and *Grid-Spacing Step* = 0.2, the separation between the first Buy and first Sell slot positions will be 10 pips. The interval between the first and second Buy slots will be 10.2 pips, then 10.4 pips for the next, and so on. Same formula applies to the Sell orders in the other half of the grid. Whenever a new Run commences, *Grid-Spacing Step* starts to increment the spacing again from scratch. This setting cannot be changed on-the-fly.

Main Grid-Increment Percent [MGIP]:

MGIP works in a similar way to the MGSS setting above. The default of 0 means this setting is ignored. As an example, suppose *Grid-Spacing* is set to 10 with MGIP = 10% for a Buy-Sell grid. Separation between center-most slots will be 10 pips. Next slots will be spaced 11 pips apart, then 12.1, and so on. This setting should not be changed on-the-fly.

Main Lot-Size Increase Amount [MLIA]:

Default for this setting is 0, which means the input is ignored. When non-zero and Main-Grid = *Fixed-Center*, the base lot-size as determined by either *LotSize-Constant* or *LotSize-Proportional*, is increased incrementally from one pending order slot to the next by that amount. For example, if the base lot-size for a grid is 0.15 and MLIA = 0.01, then lot-size for the next pending order placed at slot #2 will be 0.16, the next one 0.17, next 0.18, and so on. When a Run is closed (all open trades closed and pending orders deleted) and a new Run begins, the lot-sizes are allocated as previously either by Lot-Size or Lot-Size Percent. This setting cannot be changed on-the-fly.

Main Lot-Size Increase Percent [MLIP]:

When set to the default 0, this input is ignored. When set to a percent and Main-Grid = *Fixed-Center*, the lot-size as determined by either *LotSize-Constant* or *LotSize-Proportional*, is increased incrementally by that percentage from one pending order slot to the next. This setting may be useful for Martingale strategies made famous by professional gamblers. For example, if the starting pending order lot-size is say 1.20 and MLIP = 100%, then the next pending order lot-size would be increased by 100% to 2.40, the next to 4.80, then 9.60, and so on. For a starting lot-size of 1.20 and MLIP = 50%, the next pending order lot-size would be increased by 50% to 1.80, followed by 2.70, 4.05, etc. As a new Run begins for a *Fixed-Center* grid, lot-sizes are again calculated using the formula described above. This setting cannot be changed on-the-fly.

Main Lot-Size Increase Fibonacci [MLIF]:

Default is false and this input is ignored. When set to a true and Main-Grid = *Fixed-Center*, the lot-size set by either *LotSize-Constant* or *LotSize-Proportional*, is increased incrementally from one pending order slot to the next in accordance with the Fibonacci series... 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, etc. The series is based on the formula "next number = current number + previous number". For example, if the base lot-size is 1.2, then the next lot-size will be 1.2 (1.2 + 0, the previous lot-size); next lot-size will be 2.4 (1.2 + 1.2), next 3.6 (2.4 + 1.2), then 6.0 (3.6 + 2.4), 9.6, and so on. When a fresh Run starts, these lot-sizes are again calculated using the formula with whatever base lot-size applies at the time. This setting cannot be changed on-the-fly.

Main Take-Profit Pips Step [MTPPS]:

When set to the default 0, this input is ignored. For a non-zero value, *Main Take-Profit Pips* is incremented by MTPPS from one pending order slot to the next. For example, if MTPP = 20, MTPPS = 0.5 and there are 6 *Fixed-Center* slot Buy positions (created with *Main Max Open Buy Trades* = 6), then the order at Buy slot 1 (closest to grid center) has Take-Profit Stop = 20; the Buy order at slot 2 position has Take-Profit Stop = 20.5; Buy 3 to Take-Profit Stop = 21; Buy 4 Take-Profit Stop = 21.5; Buy 5 Take-Profit Stop = 22; and Buy 6 (furthest from grid center) has Take-Profit Stop = 22.5. Not only can the lot-size be increased for grid orders moving out from grid center, but their Take-Profit pips can increase as well – this might prove useful for Counter-Trend strategies stretched over a large range where larger retracements are required. This setting cannot be changed on-the-fly.

HEDGE GRID GENERAL INPUTS

Hedge-Grids are controlled by settings that largely mirror those for Main-Grids. The logic behind having a Hedge-Grid is to allow a rapid (and automatic) switch of strategy when a significant change in price trend is identified. Main-Grids and Hedge-Grids can operate independently, although they work in conjunction when controlled by the Close-Run mechanism.

As the name suggests, the primary purpose for the Hedge-Grid is to counter possible negative outcomes when trading only the Main-Grid. However, they also allow a second strategy to trade simultaneously with the Main-Grid strategy, both in the same ForexGM instance (i.e. both in the same Chart). By using Hedge-Grid settings that differ slightly from those of the Main-Grid, an even higher level of control is available than for a single grid. An example of a secondary grid might have *Hedge Center-Zone Pips* = 0 and *Main Center-Zone Pips* = 400, which would result in a Hedge-Grid inside the grid created by Main-Grid settings.

Another example could have Fixed-Center Main and Hedge Grids with the Hedge-Grid set to trade in a Trend direction, and configured to start once the price moves outside the 'comfort zone' of a Main-Grid trading a Counter-Trend strategy. The threshold for the start of a Hedge-Grid is controlled by setting *Hedge Center-Zone Pips*. If the Main and Hedge Grids are intended to work in conjunction with each other, Fixed-Center options would be appropriate.

One subtle difference between Main and Hedge Grids is the way they can respond to a Spike event. Normal usage for a Spike event in the Main-Grid is to either Pause or Close a Run once it has already commenced. For a Hedge-Grid, there is also an option to delay the start of a Run until a Spike condition occurs. A delayed-start Hedge can run quite independently, and does not require the Main-Grid to be enabled.

Hedge Order-Type [HOT]: (Buy-Sell; Buy-Full; Sell-Full; Buy-Half; Sell-Half)

This input specifies that trade orders placed for Hedge-Grids are either All Buy Orders, All Sell Orders, or Both Buy and Sell orders, and also if the grid is a Half-Grid or Full-Grid. Pending orders (Limit and Stop orders) will be placed symmetrically on both sides of grid center when set to Full-Grid for Buy or Sell grids, or one side only when set to Half-Grid for either Buy or Sell grids. *Buy-Sell* grids automatically trade two Half-Grids with a Half-Grid of Buy orders plus a Half-Grid of Sell orders. As an example, if the default *Buy-Sell* is selected to trade a *Trend* grid to capture profit in the direction of the price trend, then Buy Stop orders will be placed above grid center or at the top of the *Hedge Center-Zone Pips* (if set), and Sell Stop orders below. If *Buy-Sell* is chosen with the *Counter-Trend* option, then Buy Limit orders will be placed below grid center and Sell Limit orders above. Some basic examples can be found in the Main section describing Order-Type – Main Order Type. This setting cannot be changed on-the-fly.

Hedge Trend Direction [HTD]: (Trend; Counter-Trend)

This input determines whether the Hedge-Grid will be for either a *Trend* or *Counter-Trend* strategy. If *Hedge Order Type* is set to either Buy-Full or Sell-Full, the option is ignored. A *Trend* grid places Buy Stops above grid center (Buy-Trend), or Sell Stops below grid center (Sell-Trend), or both (Buy-Sell Trend). A *Counter-Trend* strategy places Buy Limits below grid center (Buy Counter-Trend), or Sell Limits above grid center (Sell Counter-Trend) or both (Buy-Sell Counter-Trend). If Hedge Center-Zone Pips is set non-zero, the top and bottom levels of the center-zone will be used instead of the grid center. This setting cannot be changed on-the-fly.

Hedge Grid Spacing [HGS]:

This input sets the distance in pips between each hedge grid-slot and the next grid-slot for orders of the same type (Buys or Sells). The Hedge-Grid and the Main-Grid share a common center-line. If the Hedge Center-Zone Pips setting is used, the first pending orders are placed at the edge of the center-zone, and HGS applies outwards from there. This setting cannot be changed on-the-fly.

Hedge Max Pending Buy Orders [HMPB]:

This input determines the number of pending Buy Limit or Buy Stop orders that the hedge strategy will place at grid start, and the maximum number of pending Hedge Buy orders permitted at any one time. If either HMPB or HMPS is set to be greater than the default 0, then HMOB and HMOS will limit the number of open trade slots, and the number of pending orders will be controlled accordingly – this means HMPB cannot be set to a value higher than HMOB. If the number of open Hedge Buy or Sell trades reaches the limit but then decreases (one or more open trades are closed), then ForexGM will resume opening pending Hedge-Grid orders as dictated by the other strategy settings. ForexGM also limits the total number of open pending orders to a maximum of 100. However, be aware that some brokers may not allow that many open trades. This setting can be changed on-the-fly to a higher value but not lower.

Hedge Max Pending Sell Orders [HMPS]:

This operates the same as *Hedge Max Pending Buy Orders* above, but is for Sell orders. It specifies the number of pending Hedge Sell Limit or Sell Stop orders placed at grid start, and also the maximum number permitted at any one time. If either HMPB or HMPS is set to be greater than the default 0, then HMOB and HMOS will limit the number of open trade slots, and the number of pending orders will be controlled accordingly – this means HMPS cannot be set to a value higher than HMOS. If the number of open Hedge Buy or Sell trades reaches the limit but then decreases (one or more open trades are closed), then ForexGM will resume opening pending Hedge-Grid orders as dictated by the other strategy settings.

Hedge Max Open Buy Trades [HMOB]:
Hedge Max Open Sell Trades [HMOS]:

When set to the default 0, these inputs are ignored. When set to a number such as 3 for example, then the maximum number of Hedge-Grid open Buy/Sell trades at any one time is limited to that number (3). These settings operate differently from *Main Max Open Buy Trades* and *Main Max Open Sell Trades* which not only limit the maximum number of Main-Grid open Buy/Sell trades at any one time, but also limit the number of Buy/Sell order positions in a *Main Fixed-Center* grid that can be filled by Main-Grid orders. HMOB/HMOS will continue placing Hedge-Grid orders as the price moves outwards further and further away from grid-center, but will also limit the number of Hedge-Grid Buy/Sell orders allowed open at any one time, such as 3 in this example.

Hedge Center-Zone Pips [HCZP]:

If set to the default 0, this setting is ignored. For a whole pip value greater than 0, Hedge Center-Zone Pips works almost the same way as does Main Center-Zone Pips. *Hedge Center-Zone Pips* is centered around the Hedge center-line, which corresponds to the Main center-line at the start of the Run if Main-Grid is active. This HCZP determines the minimum separation between the center-line and the innermost Hedge Buy and Sell orders. For example, if HZCP = 100 then no Hedge orders can be placed within that 100 pip range. Main-Grid orders are unaffected by this setting and can be placed inside that zone if desired. The initial Hedge-Grid orders are placed immediately at the extremes of HCZP – the distance between the first Hedge-Grid order at the top of the zone and the first Hedge-Grid order at the bottom is exactly 100 pips. When trading a Hedge Half-Grid, say a Buy Trend strategy, then the spacing is half the value of HCZP. This setting cannot be changed on-the-fly.

Hedge Grid Order Replacement [HGOR]:

If HCZP is set to true then whenever a Hedge-Grid order closes, it will always be replaced when possible within the same Run. If set to false then each Hedge-Grid order within a Run will only be placed once. This setting operates independently from *Main Grid Order Replacement*.

HEDGE GRID ORDER INPUTS

Hedge Lot-Size [HLS]:

This input determines the base lot-size for the Hedge grid orders. If the next setting, *Hedge Lot-Size Scaling*, is set to *LotSize-Constant*, the lot-size is set to HLS for all grid orders. By fixing a minimum HLS, ForexGM can detect a potential margin-call situation, and take the appropriate action. Please note that the chosen HLS value cannot be less than the minimum lot-size required by broker.

Hedge Lot-Size Scaling [HLSS]: (LotSize-Constant; LotSize-Proportional)

If HLSS is set to the default *LotSize-Proportional*, the HLS value is used when initiating ForexGM for Run 1. For all subsequent Runs, the base lot-size will be increased or decreased by the ratio of Start-Run Equity to Start-

Run1 Equity. When set to *LotSize-Constant*, the lot-size at the beginning of each Run (and within the Run if *Fixed-Center* Lot-Size Increase settings are not used) will remain the same from one Run to the next.

For example, say the account-equity starts at $10,000 for Run 1 with HLS = 0.10, Lot-Size Scaling = *LotSize-Proportional*, *CR-ProfitPercent* = 10 and *CR-LossPercent* = 30. If the Close-Run is positive and reaches its equity increase profit target of 10% net of all open and closed trades within the Run (with default *CR Include Closed Trades Net* = true), then Run 2 start equity will be $11,000, and the base lot-size will automatically be increased to 0.11. If Run 1 closes when equity has reduced 30% to $7,000, then base lot-size is decreased to 0.07 for Run 2. Regardless of whether *Hedge Lot-Size_Scaling* is *LotSize-Proportional* or *LotSize-Constant*, the lot-size can be automatically increased from slot to slot going out from the grid center-line within a Run by using the *Hedge Fixed-Center* input, *Hedge Lot-Size Increase Percent*. HLSS cannot be changed on-the-fly.

Hedge Take-Profit Pips [HTPP]:

This input determines how many pips profit each of the pending hedge orders will target and capture. If for example, the EURUSD is traded, and a pending Hedge-Grid Buy order is set to open at 1.3700 and it opens, and *Hedge Take-Profit Pips* = 35, then when price reaches 1.3735, the trade will close capturing 35 pips of profit. When set to 0, this input is ignored.

Hedge Stop-Loss Pips [HSLP]:

This determines the stop-loss for each individual Hedge-Grid order. If set to 0 then this input is ignored. If for example, the EURUSD is being traded, and a Hedge-Grid Buy order is open at 1.3700, and Hedge Stop-Loss Pips = 50, and then the price drops to 1.3650 triggering the 50 pip stop loss, the trade will close at a loss of 50 pips. This setting can be changed on-the-fly, although it will only affect new pending orders, not those already placed.

Hedge Break-Even Stop [HBES]:

When set to true then a break even stop-loss can be set on each individual Hedge-Grid order, which will be triggered according to the values set by the next two settings, HPBBES and HBESPP.

Hedge Profit Pips Before Break-Even Stop [HPBBES]:

When HBES = true then this setting is enabled. As an example, if HPBBES is set to 10 and a pending order is opened followed by a price-move 10 pips into profit, a break-even stop is placed on the order so that if the price retraces 10 pips, the open trade is closed at its opening or break-even price (plus the value of the next setting, HBESPP). This value can only be set to whole pips, not fractional pips. This setting cannot be changed on-the-fly.

Hedge Break-Even Stop Plus Pips [HBESPP]:

The value in pips set here adds to the break-even stop. If HBESPP is set to the default of 1 as an example, it means that if HPBBES = 10 and an open order reaches 10 pips of profit to trigger the *Hedge Break-Even Stop*, a price retrace of 9 pips (10 – 1) will close the order 1 pip in profit. This setting is useful to offset commission charges or slippage.

Hedge Trail-Stop Pips [HTSP]:

This input determines how many pips the Hedge Trail-Stop will be. As an example, if HTSP = 50 and *Hedge Profit Pips Before Trail-Stop Pips* = 0, then a stop-loss is immediately set 50 pips away from the price the order opened. That stop-loss will then trail pip-by-pip behind the price if it moves in a profitable direction. If price moves in a losing direction then the trailing stop-loss will remain fixed. Another example -- if HPPBTS is 36 and HTSP is set to 9, then when each individual order is 36 pips into profit, the trail-stop of 9 is triggered and 27 pips of profit will be locked in. Let's say that an individual order moves 50 pips into profit and then retraces 9 pips, the trade will then close out with 41 pips of profit. This setting cannot be changed on-the-fly.

Hedge Profit Pips Before Trail-Stop Pips [HPPBTS]:

This setting is used in conjunction with Hedge Trail-Stop Pips. It specifies the threshold of pips in profit to be reached before a trail-stop becomes active. When set to the default 0 pips, the HTSP trail-stop comes into effect immediately. For example, if HPPBTS = 36, each of the individual open hedge orders need to move 36 pips into profit before the trail-stop is activated. It differs from Hedge Stop-Loss Pips which fixes the stop-loss at a given price. This setting cannot be changed on-the-fly.

HEDGE GRID FIXED-CENTER INPUTS

Hedge Grid-Spacing Step [HGSS]:

When set to the default 0, all grid slots are spaced evenly apart. For a non-zero value, the space between hedge-grid slots is increased incrementally by that amount as the grid moves out from its center-line. The value can be either a whole number or a decimal representing fractional pips. For example, if trading a Buy-Sell grid with *Grid-Spacing* = 10 and Grid-Spacing Step = 0.2, the separation between the first Buy and first Sell slot positions will be 10 pips. The interval between the first and second Buy slots will be 10.2 pips, then 10.4 pips for the next, and so on. Same formula applies to the Sell orders in the other half of the grid. Whenever a new Run commences,

Hedge Grid-Spacing Step starts to increment the spacing again from scratch. This setting cannot be changed on-the-fly.

Hedge Lot-Size Increase Percent [HLSIP]:

When set to the default 0, this input is ignored and all orders placed in the grid for the particular Run will have the same lot-size. When set to a percent value and Hedge-Grid is *Fixed-Center*, then the lot-size as determined by either *Hedge LotSize-Constant* or *Hedge LotSize-Proportional*, is increased incrementally from one Hedge-Grid pending order to the next by that percentage. For example, if the starting Hedge-Grid pending order lot-size is say 1.2 and HLSIP = 100, then the next pending order lot-size would be increased by 100% to 2.4, the next one to 4.8, the next to 9.6, and so on.

If starting with a lot-size of 1.2 and HLSIP = 50, then the next pending order lot-size would be increased by 50% to 1.8, the next one to 2.7, then 4.05, and so on. When a Run is closed (all Main-Grid and Hedge-Grid open trades closed and pending orders deleted) and a new Run begins automatically (see Auto-Restart Options), the Hedge-Grid lot-sizes are again set according to HLSIP and the rules for lot-size scaling – Hedge Lot-Size Scaling. This setting cannot be changed on-the-fly.

GRID MOVING-CENTER INPUTS

The following two settings apply to Moving-Center strategies for both Main-Grids and Hedge-Grids. They are ignored for *Fixed-Center* grids.

Moving-Center Buy-Sell Overlap [MCBSOV]:

When set to true, grid Buy orders and Sell orders can overlap. *Moving-Center Buy-Sell Overlap* = false ensures all pending or open Buy orders on one side of the grid will remain separated from all Sell orders on the other side (see examples below). This setting cannot be changed on-the-fly.

Moving-Center Buy-Sell Offset Pips [MCSOP]:

This option prevents Buy and Sell orders from occupying the same price slot positions when trading a *Buy-Sell* strategy involving *Moving-Center Buy-Sell Overlap* set to true. When set, it applies to both the Main-Grid and the Hedge-Grid. If Buy and Sell orders are placed at the same price, it can be difficult to identify them by their graphical representation on a chart. A slight offset can make them more distinguishable without greatly affecting trading outcomes. MCSOP specifies how many pips Sell orders will be placed below Buy orders in a Buy-Sell grid where Buys and Sells overlap. This does not affect Grid-Spacing or Center-Zone Pips for either type of grid. This setting cannot be changed on-the-fly.

Here are a few examples using EURUSD prices...

Grid-Spacing = 6 Center-Zone Pips = 0 Buy-Sell Overlap = true Buy-Sell Offset Pips = 3	Grid-Spacing = 6 Center-Zone Pips = 0 Buy-Sell Overlap = true Buy-Sell Offset Pips = 1	Grid-Spacing = 3 Center-Zone Pips = 6 Buy-Sell Overlap = false Buy-Sell Offset Pips = 0
------------ 1.37070	------------ 1.37070	------------ 1.37070
--- **Buy** --- 1.37060	--- **Buy** --- 1.37060	--- **Buy** --- 1.37060
------------ 1.37050	--- **Sell** --- 1.37050	------------ 1.37050
------------ 1.37040	------------ 1.37040	------------ 1.37040
--- **Sell** --- 1.37030	------------ 1.37030	--- **Buy** --- 1.37030
------------ 1.37020	------------ 1.37020	---- **CZ**---- 1.37020
------------ 1.37010	------------ 1.37010	---- **CZ**---- 1.37010
--- **Buy** --- 1.37000	--- **Buy** --- 1.37000	---- **CZ**---- 1.37000
------------ 1.36990	--- **Sell** --- 1.36990	---- **CZ**---- 1.36990
------------ 1.36980	------------ 1.36980	---- **CZ**---- 1.36980
--- **Sell** --- 1.36970	------------ 1.36970	--- **Sell** --- 1.36970
------------ 1.36960	------------ 1.36960	------------ 1.36960
------------ 1.36950	------------ 1.36950	------------ 1.36950
--- **Buy** --- 1.36940	--- **Buy** --- 1.36940	--- **Sell** --- 1.36940
------------ 1.36930	--- **Sell** --- 1.36930	------------ 1.36930

TIME AND DAY INPUTS

These settings apply to both Main-Grids and Hedge-Grids.

Grid Start Time: (default = "ignore")

When set to the default "ignore", this setting has no effect. This input determines the time of day when ForexGM will open a grid of pending orders. It is the 24-hour time relative to Market Watch time which is displayed on the title-bar of the Market Watch panel of the terminal when connected with a broker and the market is open. If *Grid Start Time* = 00:01 as one example, then ForexGM is activated at 00:01 (midnight) Market Watch time. If set to 08:30, then ForexGM will start placing orders automatically at 8:30 am. If set to 20:30, then orders will be placed from 8:30 pm onwards. *Grid Start Time* can work independently, or in conjunction with *Grid Stop Time*. If *Grid Start Time* is set to any value and *Grid Stop Time* = "ignore", all orders will be closed at midnight on the day they opened, ready to start again the next day if required. This setting can be changed on-the-fly anytime before it has been triggered.

Grid Stop Time: (default = "ignore")

When set to the default of "ignore", this setting is ignored as one might expect. This input determines what time ForexGM will stop the present Run and close out all open trades and delete all pending orders. The format is the same as for *Grid Start Time*, and these two settings work in tandem to control the daily period for trading. For example, if *Grid Start Time* is set to 23:00 and *Grid Stop Time* is set to 07:25, then ForexGridMaster will trade through the night and shut down at 07:25 (7:25 am) in the morning to start a new Run at 23:00 (11:00 pm). This cycle is repeated for all trading days that are enabled (all days are enabled by default). Another scenario might have the time period set by *Grid Start Time* / *Grid Stop Time* as 08:05 to 19:35, which would result in active trading from 8:05 am through the day until 7:35 pm. This setting can be changed on-the-fly anytime before it has been triggered.

Trade Monday: (default = true)
Trade Tuesday: (default = true)
Trade Wednesday: (default = true)
Trade Thursday: (default = true)
Trade Friday: (default = true)

When one or more of the *Trade Day* input settings are set to their default values of true, trading is enabled for those particular days, week after week, continuously until these settings are changed. *Trade Day* settings are based on Market Watch time which is displayed on the title-bar of the Market Watch window on the MetaTrader 4 terminal. The time period for each *Trade Day* starts at 00:00:00 Midnight and ends 24 hours later at 23:59:59. Whenever one or more of the *Trade Day* settings are set to false, then trading is disabled for those days, and a complete Close-Run is triggered at 00:00:00 on the specified days to close all open trades and delete all pending orders. If *CR Auto-Restart* = true, a new Run will start automatically, but not until the next enabled *Trade Day*. If *CR Auto-Restart* = false, the EA must be manually restarted. These Trade Day settings can be changed on-the-fly anytime before their trigger time.

As an example, if *Trade Monday* is set to false, trading will be disabled for Mondays from 00:00:00 to 23:59:59 Market Watch time. If a Run is open and trading on the preceding Sunday, then that Run will close at 00:00:00 midnight Market Watch time between Sunday and Monday, and a new Run will not start up automatically until the next enabled Trade Day. When Close-Run is triggered, all open trades and pending orders are closed.

Trade Sunday: (default = true)

Sundays are handled differently from the other days because the market can sometimes be closed to reopen on a Sunday. This is the case for most Forex instruments that cease trading over a weekend. So, if *Trade Sunday* = false and *Trade Friday* = true, then any Run in progress on Friday actually needs the Close-Run function triggered at least 15 minutes before market closing-time on Friday (see *Close For Sunday-Friday Time*). This will ensure all open trades and pending orders are closed before the Friday market close. The *Trade Sunday* setting can be changed on-the-fly anytime before its trigger time.

Close For Sunday-Friday Time: (default = "ignore")

This setting is activated when *Trade Sunday* = false. It is important to check the Market-Watch times that the market is open for your particular broker. Forex trading is normally closed on Fridays by the broker, and any time set here should be at least 15 minutes before the Friday market close to allow sufficient time for all trade orders to close. For example, one account we have with GoMarkets in Australia closes on Friday afternoons at the Market-Watch time of 22:59:59, so in this case we use the setting *Close For Sunday Friday Time* = 22:30. This setting is useful to close out orders on Friday afternoon to avoid the weekend gap that shows up at the Sunday evening market-open. This setting can be changed on-the-fly anytime prior to its trigger time.

Friday Close Time: (default = "ignore")

When set to "ignore", this setting and the next two, *Friday Close Profit Only* and *Friday Close Time Period,* will be ignored, no matter what values they are set to. When set to a close time according to the MetaTrader 4

Market-Watch time, 08:25, 11:45, or 14:00 as examples, and in the same 24-hour clock 'hh:mm' format, the current Run will be closed at the specified *Friday Close Time* unless cancelled or modified by the following two settings.

If the current Run is closed by *Friday Close Time* and the setting *CR Auto-Restart* = true, the restart will be ignored and ForexGM will be stopped and can only be started again manually. This setting is useful to avoid possible large unexpected price gaps that can occur over the weekend, or simply just to close ForexGM at the end of the trading week. Depending on activation of the next two settings, *Friday Close Profit Only* and *Friday Close Time Period*, this setting can continue to operate from week to week until it triggers a Close-Run. This setting can be changed on-the-fly any time before its trigger time.

Friday Close Profit Only:

If set to true, the Run will close at the *Friday Close Time* set, but ONLY if the current Run net profit of all Main-Grid and Hedge-Grid trades, both open and closed, is positive either at that exact time, or within the period specified by *Friday Close Time Period*. If set to false, then this setting is ignored and the current Run will be closed immediately at the set *Friday Close Time*. This setting can continue to operate from week to week until it triggers a Close-Run. It can be changed on-the-fly any time before its trigger time.

Friday Close Time Period:

This setting works in combination with *Friday Close Time* and *Friday Close Profit Only*. If set to zero then this setting is ignored. If set to 120 minutes for example, it means that during the 120 minute *Friday Close Time Period* commencing from the *Friday Close Time*, ForexGM will monitor the current Run net profit, and will close the Run if and when it reaches profit within that 120 minute window. Otherwise, the Run will not be closed. Using *Friday Close Time* = 14:00 as an example, at 14:00 ForexGM examines the current situation and will immediately activate a Close-Run if the Run is in profit. If the Run does not go into profit during the set *Friday Close Time Period* of minutes, then the Run will continue trading when the market next opens. This setting can continue to operate from week to week until it triggers a Close-Run. It can be changed on-the-fly any time before its trigger time.

MISCELLANEOUS INPUTS

The settings in this section apply to the overall strategy.

Lot-Size Normalized: (default = true)

Whenever Account-Currency is not the same as Quote-Currency, a lot-size adjustment that depends upon current Conversion-pair price might be required. Consider an example where Account-currency is USD and the AUDNZD pair is being traded (NZD being the Quote-currency), then the current price of the Conversion-pair NZDUSD is taken into account when calculating lot-size. A lot-size adjustment is made immediately at the start of Run 1, and adjustment is also applied at the start of each follow-up Run according to changes in the NZDUSD price. The Conversion-pair (NZDUSD in this case) must be in the Market-Watch panel so that current Conversion-pair price is tracked. Not all currency pairs and Account-currencies are supported yet. If something similar to the above image is seen on the right lower corner of the chart window, then it indicates that normalization is active and displays the relevant rate used for conversion. When back-testing in Strategy Tester, Conversion-pair M1 data must also be downloaded or imported into History Center, NZDUSD in this case. If not present, check in the Experts Log for related error messages.

Show Comments: (default = true)

ForexGridMaster displays very useful information in comments at the top right corner of a chart, including Strategy File-Name and Info, Current Run Statistics, Max Equity Drawdown, etc. If *Show Comments* is set "false", then no comments are displayed. The display of comments is also controlled by a parameter in the ForexGM_Advanced.prf file. If *Show Comments* is set to "true" or "false", it will take precedence over any option set in the Profile.

Log Activity: (default = true)

The default is set "true" to allow extra information to be saved to the system log-file in the [MT4 Data Folder]\MQL4\Logs directory. These details can help troubleshoot problems when ForexGridMaster does not appear to be functioning correctly. When there is a problem, log-file entries can be viewed in the "Experts" tab at the bottom of the Terminal window. Right click on an entry and choose "Open" to view the whole log-file for that day or any previous days.

Log Debug Info: (default = false)

Like the setting above, this input can be set to "true" to record even more detail in the system log-file saved at the [MT4 Data Folder]\MQL4\Logs. See Testing and Problem Solving below for more information.

SPIKE CONTROL INPUTS

In ForexGM parlance, a "spike" occurs whenever a preset limit for either price-range or number-of-trades is reached within a predefined period. Note that a Spike is handled quite differently for the Main-Grid and the Hedge-Grid. It is possible to configure ForexGM to open a Hedge-Grid on a Spike, and pause or close the Main-Grid at the same time. There are many subtleties in the use of this Spike Protection mechanism. It is strongly recommended to experiment with various scenarios in the Strategy Tester before applying the techniques to a live account.

Spike Option: (default = Spike-Main-Off)

- **Spike-Main-Off** – This setting will disable all spike actions related to the Main-Grid. It does not influence the *Spike Hedge Options* which are quite independent.
- **Pause-While-Active** – There are several options that cause ForexGM to Pause. What differentiates them is the manner in which the Pause is cancelled and processing continues. With this particular option, processing continues after the spike condition no longer exists. See illustration in Figure #1
- **Pause-Until-Reset** – When a Spike is detected, a Cancel Spike button appears on the lower right of a chart. If this option is chosen, the only method of cancelling the Pause is with this button. See illustration in Figure #3.
- **Pause-Until-Retrace** – This option allows a Pause to automatically reset after the price retreats a set number of pips from either the maximum or minimum price, depending on whether a spike-up or spike-down is in play. It requires the input *Spike Pause Retrace Pips* to be set. See illustration in Figure #4.
- **Close-Main** – If a strategy requires the Main-Grid to be closed when a spike is detected, this option is set. Note that the following *Close-Run* option will also close the Main-Grid and the Hedge-Grid as well.
- **Close-Run** – This option closes the Main-Grid and also the Hedge-Grid if it is active.

Spike Hedge Option: (default = Spike-Hedge-Off)

- **Spike-Hedge-Off** – If this is set, a spike has no influence on a Hedge-Grid.
- **Open-Hedge-On-Spike** – A spike can be set to trigger the opening of a Hedge-Grid when it is an upward-spike, a downward-spike or either of these. This option will open a Hedge-Grid for either type of spike.
- **Open-Hedge-On-Spike-Up** – A Hedge-Grid will open only when a spike-up is detected.
- **Open-Hedge-On-Spike-Down** – A Hedge-Grid will open only when a spike-down is detected.

Spike Interval Seconds:

This parameter specifies the period of time in seconds back from the current time that monitoring takes place, checking to see if *Spike Pips per Interval* and *Spike Trades per Interval* thresholds have been reached. A value for *Spike Interval Seconds* between 5 seconds and 86400 (24 hours) is required if either *Spike Option* or *Spike Hedge Option* is enabled. For example, if set to the 990 seconds (16.5 minutes) with *Spike Pips per Interval* = 30 pips and *Spike Trades per Interval* = 5, then ForexGM examines the price-range and number of trades within the preceding 990 seconds. If 5 trades have been opened or the price-range reaches 30 pips, a spike is registered. The action to be taken when a spike is detected is determined by the values set for *Spike Option* and *Spike Hedge Option*.

Spike Pips per Interval:

If set to the default zero, ForexGM does not monitor the price-range to determine if a spike has occurred. Note that *Spike Pips per Interval* and *Spike Trades per Interval* cannot both be zero when Spike Options are set. If both methods are used, the first to reach its respective threshold will trigger a spike.

Spike Trades per Interval:

If Spike Options are set and *Spike Pips per Interval* = 0, this parameter is required. Valid values for *Spike Trades per Interval* are from 2 to 50. If set to a value such as 3 for example, this means that no more than 3 trade orders can be opened within the time period specified by the previous *Spike Interval Seconds* setting, and the opening of order number 3 will trigger a spike. These Spike Protection settings are used to counteract large price spikes and swings by reducing the number of accumulated negative trades. Please note that the tally of open trades includes those in both profit and loss. This setting can be changed on-the-fly, but exercise extreme caution to avoid setting values that will immediately trigger a spike.

Spike Pause Retrace Pips:

If *Spike Option* = *Pause-Until-Retrace*, this parameter specifies the number of pips the price must retrace from the price the spike was triggered, before continuing after a pause. This can be any value, but a setting less than about 6 pips would not be very practical as ForexGM would continue almost immediately after a pause.

Figure #1: This image shows ForexGM running in the Strategy Tester with *Spike Option* = *Pause While Active*; *Spike Interval Second* = 3600; *Spike Pips per Interval* = 40; *Spike Trades per Interval* = 0. The grey rectangle stretches from the current tester-time back 60 bars (or minutes) and maintains that relationship as the time-line advances. The top and bottom of the rectangle are set to be 40 pips apart, centered around the average price during the previous 3600 seconds, and surrounding the candles within. When the price range within the rectangle reaches 40 pips, a spike is triggered which displays the status as shown in the next figure.

Figure #2: When a Pause has been triggered, there are several visual cues to indicate the status. The cyan text-box on the upper-left of the chart shows the type of spike that occurred, *Pause While Active* in this case. The red text-box on the upper-right is a general message that displays when trading is paused or halted for any reason. If left running, the Pause would terminate when the price-range fell below the 40 pips set in this example, and allow

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trading to continue as normal. Some Spike Options provide an opportunity to intervene and prematurely cancel the Pause. Pressing the Cancel Spike button will continue trading, and once again monitor for a new spike condition. Note that the Cancel Button is not operational in the Strategy Tester. The outer dark-blue rectangle in the figure shows the price-range over the spike-period, and the inner cyan rectangle illustrates the level that will reset the Pause. When these two rectangles converge, normal service is resumed.
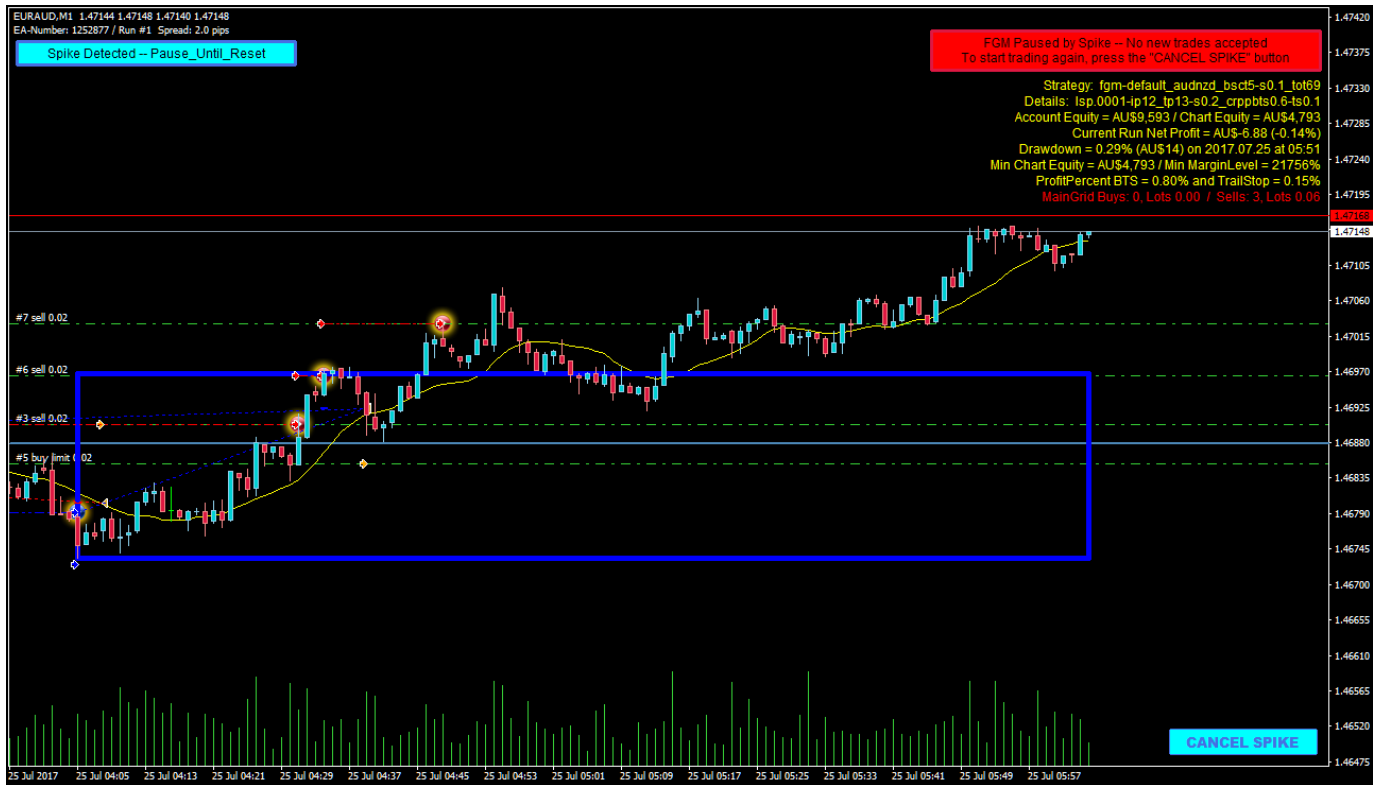
Figure #3: The Spike Options here are the same as for the previous figures above, except for *Spike Option* = *Pause Until Reset*. The dark-blue rectangle stretches from the time the spike was first triggered to the current time. ForexGM will remain Paused until the Cancel Spike button is pressed. The Pause will take precedence and cause ForexGM to ignore any conditions that might otherwise cause a Stop-Run.

Figure #4: This image illustrates a strategy that has spike detection set for a 30 pip range in a 60 minute window, *Spike Option* = *Pause Until Retrace* and *Spike Pause Retrace Pips* = 25. The left side of the dark-blue rectangle indicates where spike detection started, and the cyan line shows the retrace price that will cancel the Pause. The vertical yellow line has been added to show the time the actual spike was detected. Normally this point would be 60 minutes after the start of the monitoring interval, but because a Stop-Run occurred within the previous 60 minutes, the Stop-Run time becomes the temporary start of the monitoring interval. In this case, the spike is downwards, and the retrace price is 25 pips above the minimum price since the spike occurred. Notice that absence of grid-lines after the spike is detected. As with other Spike Options, this Pause can be cancelled by pressing the Cancel Spike button.

AUTO-RESTART OPTIONS

Auto Restart After Profit [ARAP]: (default = Restart-Enabled)
Auto Restart After Loss [ARAL]: (default = Restart-Enabled)

Previous versions of ForexGM allowed automatic restarts after Runs were closed. In this version we extend that functionality to include different actions depending on whether a previous Run has been closed is in Profit or in Loss. If either ARAP or ARAL is triggered by the respective profit or loss Close-Run, and the related option is set *Restart-Disabled*, ForexGM will require manual intervention before the next Run commences. The following options apply for both ARAP profit-closes and ARAL loss-closes, quite independent of each other. These settings can be changed on-the-fly.

- ● **Restart-Enabled** – This option will cause ForexGM to restart automatically after a Close-Run. If *Restart Seconds Delay* is zero, the new Run will commence immediately. Otherwise, it will delay the restart for the specified period.
- ● **Restart-Disabled** – A Close-Run with this option selected will pause ForexGM and display a red text-box on the upper-right of the chart to indicate the pause status, and a FGM RESTART button will appear on the lower-right. As might be expected, a press of that button should start the next Run.
- ● **After-Pips-Movement** – A new Run will commence after a price-movement specified by *Restart Pips Up or Down*.
- ● **After-Pips-Retrace** – This selection is similar to *After Pips Movement* and works in conjunction with it, but in addition requires a price retrace once the threshold has been reached.

Restart Seconds Delay: (default = 0)

This value can be set individually for both the ARAP and ARAL options. When any option other than *Restart-Disabled* is selected, *Restart Seconds Delay* specifies the number of seconds to wait after a Close-Run, before commencing the next Run. If ARAP or ARAL is set to *Restart-Enabled* and has the respective *Restart Seconds Delay* = 0, the next Run will automatically commence without delay after a Close-Run. If ARAP or ARAL has *After-Pips-Movement* or *After-Pips-Retrace* selected, ForexGM will pause for *Restart Seconds Delay* before monitoring for the specific restart condition. In other words, *Restart Seconds Delay* takes priority over options that might trigger a restart before the delay period has expired. The maximum value is 36,000 seconds (10 hours). This setting can be changed on-the-fly.

Restart Pips Up or Down:

After a Close-Run, ForexGM will pause until the price has moved away from the Close-Run price, either upwards or downwards, by the number of pips specified in *Restart Pips Up or Down*. If *Restart Seconds Delay* is greater than zero, ForexGM will wait that number of seconds before checking the price movement. *Restart Pips Up or Down* can have any positive value, but should be greater than about 5 pips to be of practical use. A value of zero effectively means the setting is ignored. This setting can be changed on-the-fly.

Restart Pips Retrace:

This parameter is required if *After-Pips-Retrace* is set, and takes effect after a Close-Run where the price has moved *Restart Pips Up or Down* from the Close-Run price. Its value must be 5 pips or more. The threshold level can move beyond that originally set by *Restart Pips Up or Down* and ForexGM monitors for a price retrace from the highest (or lowest) threshold. There are some chart graphics to show the behaviour during this period, and experimenting with various settings in the Strategy Tester is recommended to gain a clear understanding of the procedure. Horizontal lines are displayed for both thresholds and the trigger price – see Figure #5 for details. Since this setting only applies after a Stop-Run, it can be changed on-the-fly at any time during an active Run.

Figure #5: This image illustrates a strategy where *Auto Restart After Profit* = *After-Pips-Retrace*, *Restart Seconds Delay* is zero, *Restart Pips Up or Down* = 30, and *Restart Pips Retrace* = 20. The lower threshold was hit first, and it follows the price downwards. The cyan-colored line indicates that the trigger has been activated, and it continually adjusts to be 20 pips above the threshold. When the price moves back up to the trigger price, ForexGM becomes active and the next Run commences. If it is required to continue trading before the price reaches the trigger level, press the Cancel Delay button and the next Run will start immediately.

CLOSE-RUN OPTIONS

The combined net Profit/Loss calculations of the Main-Grid and Hedge-Grid orders within a Run will trigger a Close-Run when conditions meeting any of the following criteria are met. The Net Profit (Main-Grid plus Hedge-Grid) is displayed in the ForexGM comments on a chart. A grid Run will be stopped on the next tick after a Close-Run is triggered, and all orders controlled by the specific ForexGM instance will close. If a Close-Run occurs while a Hedge-Grid is active, all orders associated with both Main-Grid and Hedge-Grid are closed. The following parameters specify conditions for Close-Runs that are not visible to the broker, and hence are referred to as Stealth-Mode settings.

CR Include Closed Trades Net:

Most of the following options depend on a Profit/Loss calculation involving trades made during a particular Run. This parameter dictates whether or not to include trades that have been closed within the Run. When set to the default true, the net Profit/Loss calculation includes all related grid-trades that have been closed within a Run. In other words, when *CR Include Closed Trades Net* is set false, the calculation of net Profit/Loss involves only open trades, and not any trades that have been closed within the Run.

CR Total Profit Percent:

If set to the default 0, this input is ignored. Otherwise, it specifies the percentage of equity-profit that will trigger a Close-Run which closes all open trades and deletes all pending orders. ForexGM Advanced will then automatically initiate the next Run provided *Auto Restart After Profit* is enabled. For example, if *CR Total Profit Percent* = 3, it means that 3% of the Start Equity for the particular Run is the Close-Run profit target. ForexGM will close the Run when that target is reached. If *CR Include Closed Trades Net* is set true, the profit calculation includes all trades closed within that specific grid Run. During trading, the continuously updated Net Profit/Loss figure is displayed in the chart comments. This figure is calculated independently from all other trades that might have been placed during the period in question, whether they were placed by ForexGM, other robots, or manually. Unique EA Numbers are used to identify trades that relate to a specific ForexGM instance. This setting can be changed on-the-fly, although it can trigger an immediate Close-Run if a profit target has been reached at the time the change is made.

CR Total Loss Percent:

If set to 0, this input is ignored. If non-zero, it will trigger a Close-Run when the net loss of all open and closed trades within a Run equals the specified percentage of run-start Chart-Equity. When *CR Loss Percent* is triggered, it closes all Grid open trades and deletes all pending orders, and then ForexGM will automatically initiate the next Run if *Auto Restart After Loss* is set true. This setting can be changed on-the-fly, but be aware that it can trigger an immediate Close-Run if a loss target has been reached at the time the change is made.

CR Trail-Stop Percent [CR-TSP]:

When the value is set to the default zero, both this input and the following CR-PPBTSP input are ignored. A non-zero value specifies a trail-stop in terms of run-profit as a percentage of the start-run Chart-Equity. As an example, suppose *CR Trail-Stop Percent* = 1.0% and the start-run Chart-Equity is $4,000. The trail-stop would be $40, and the Run would close if the profit fell $40 below the peak profit for the Run. This setting can be changed on-the-fly, but it is important to note that it is only applied at the start of a Run and has no effect during a Run.

CR Profit Percent Before TSP [CR-PPBTSP]

This parameter works in conjunction with *CR Trail-Stop Percent*. If it is zero, a percent trail-stop is activated when the Run begins. If non-zero, the percent trail-stop will kick in when Run profit reaches the CR-PPBTSP percentage of the start-run Chart-Equity, and applies until the Run closes. If CR-PPBTSP = 0.5% as an example, then equity must increase by 0.5% before the *CR Trail-Stop Percent* input is triggered. The profit used in the calculation is the net profit of all open trades, plus the net profit of trades closed during that specific grid Run (if *CR Include Closed Trades Net* is set true). This setting can be changed on-the-fly, but as with *CR Trail-Stop Percent*, it is only applied at the start of a Run..

CR Loss Money:

This setting is very similar to *CR Loss Percent* except that the trigger-level for a Close-Run is specified as a monetary amount rather than a percentage of Chart-Equity. It is useful if a trader wishes to limit the loss on a particular Run to a certain amount. The loss-calculation includes both Main-Grid and Hedge-Grid trades if a Hedge-Grid was active during the Run. It can be changed on-the-fly.

CR Trail-Stop Money: [CR-TSM]

This setting is very similar to *CR Trail-Stop Percent* except that when *CR Profit Money Before TSM* (below) is set to the default zero, this input is ignored. It is also ignored if *CR Trail-Stop Percent* is set because both these options cannot be active at the same time. When CR-PMBTSM is set to a monetary value, $3,000 as an example, this input is enabled. If CR-TSM = $500, then when profit reaches $3,000, the $500 trail-stop is activated and a $2,500 profit is locked in. As profit increases further, the trail-stop will trail dollar-by-dollar (or whatever base

currency the account uses) – at $3001 a profit of $2,501 profit is locked in. Profit is calculated for all orders associated with the particular grid Run. This setting can be changed on-the-fly.

CR Profit Money Before TSM: [CR-PMBTSM]

When set to the default zero, this parameter and *CR Trail-Stop Money* are ignored. It should not be enabled if *CR Trail-Stop Percent* is set. As illustrated in the previous paragraph, this setting specifies the trigger-level (monetary Run-profit value) to be reached before the trail-stop money is activated. This setting can be changed on-the-fly.

CR Profit Pips:

If set to the default zero then this input is ignored. When set to a pips number value (whole pips only, no fractions), this input specifies the number of pips profit that will cause a Close-Run. For example, if a strategy has CR Profit Pips = 150, this means that 150 pips is the Run target. ForexGM will close the Run when it reaches 150 pips in profit target, and a new Run will start immediately (unless *Auto Restart After Profit* is disabled). The 150 pips target is calculated from the net value of all open trades, plus the net profit of trades closed within that specific Run (except if *CR Include Closed Trades Net* is set false, and only the open trades are taken into account). If *Show Comments* is set true, the Net Profit Pips figure is displayed on the chart. This setting can be changed on-the-fly.

CR Loss Pips:

If set to the default zero, this input is ignored. For any positive value, this input results in a Close-Run when the net pips loss of all open and closed trades within the Run reaches this level. However, if *CR Include Closed Trades Net* is set false, and only the open trades are taken into account. The pip calculation does not include any trades unrelated to the specific ForexGM instance. A unique *EA Number* is assigned to each ForexGM instance to identify related transactions and trades. This setting can be changed on-the-fly.

CR Trail-Stop Pips:

If set to default 0 pips, then this setting is ignored. For any other value, either positive or negative, this setting specifies the Close-Run price threshold in pips. When a Run starts, the threshold is set above or below current Bid price at that time – above the Bid price if a positive number, below if a negative number. As an example, consider a current EURUSD price of 1.3095 and *CR Trail-Stop Pips* = 20. When the price moves down, the stop-loss will follow it down and remain 20 pips above the Bid price. As the price retraces and moves upwards, the threshold remains fixed and a Close-Run is triggered when the price reaches that threshold price level. If *CR Trail-Stop Pips* was negative, the effect would be in the opposite direction, with the threshold adjusted to be 20 pips below the Buy price for an upward price movement. Extra care should be taken when combining *CR Trail-Stop Pips* with any of the *Auto-Restart* options. This setting can be changed on-the-fly.

CR Hedge Profit Percent:

This setting is similar to *CR Total Profit Percent*, but here the profit is calculated by taking only the Hedge trades into account. When the total profit for Hedge trades during the Run has reached *CR Hedge Profit Percent*, a Close-Run is actioned. If set to the default 0, this input is ignored. Otherwise, it specifies the percentage of equity-profit that will trigger a Close-Run which closes all open trades and deletes all pending orders. ForexGM Advanced will then automatically initiate the next Run provided *Auto Restart After Profit* is enabled. As an example, if *CR Hedge Profit Percent* = 3, it means that 3% of the Start Equity for the particular Run is the Close-Run profit target. ForexGM will close the Run when that target is reached. If *CR Include Closed Trades Net* is set true, the profit calculation includes all trades closed within that specific grid Run. This setting can be changed on-the-fly, although it can trigger an immediate Close-Run if a profit target has been reached at the time the change is made.

CR Hedge Loss Percent:

If set to 0, this input is ignored. If non-zero, it will trigger a Close-Run when the net loss of all open and closed Hedge trades within a Run equals the specified percentage of run-start Chart-Equity. When *CR Hedge Loss Percent* is triggered, it closes all Grid open trades and deletes all pending orders, and then ForexGM will automatically initiate the next Run if *Auto Restart After Loss* is set true. This setting can be changed on-the-fly, but be aware that it can trigger an immediate Close-Run if a loss target has been reached at the time any modifications are saved via the Settings Panel.

CR Price Maximum:
CR Price Minimum:

These two inputs can be set independently, and are ignored if set to the default zero. Set to a specific price above or below the prevailing Bid price as appropriate, a Close-Run is actioned when the Bid price hits either threshold level. It is important to note that these settings should only be used in a short-term monitoring situation, and manual intervention is required before the following Run can commence. They should NEVER be used in conjunction with any Auto-Restart options as the results could be unpredictable, and potentially disastrous. This setting can be changed on-the-fly.

IMMEDIATE-CLOSE OPTIONS

These settings are used to immediately close some of or all trade orders controlled by this instance of ForexGM and its *EA Number*. A close procedure is actioned as soon as one of these options is selected in the Settings Panel and the OK button is clicked. To resume trading after the trades have closed, it is necessary to return to the Settings Panel and deselect the previous close-option. A Red text-box displays a message on the top-right of the chart as a constant reminder that ForexGM requires a reset before normal trading resumes. Settings in this section specify which particular grid-orders should be closed, resulting in either a full or partial Close-Run.

A full Close-Run occurs when the chosen options result in the closure of all trades and pending orders. A colored rectangle (the Close-Run marker) is drawn on the chart to identify a full Close-Run, and the upper and lower boundaries will usually correspond to the highest and lowest prices of trades placed within the Run. Hovering over this marker will show the equity and profit/loss associated with the Run. Full Close-Runs are numbered 1, 2, 3 etc. For partial Close-Runs, letters are appended to the run-numbers… 1-A, 1-B, 1-C, etc.

It is important to exercise caution for partial Run-Closes when either *Main Grid Order Replacement* or *Hedge Grid Order Replacement* is set true. The situation might arise where an order is deleted, and is immediately replaced when the grid becomes active again. These settings apply only at the time ForexGM is restarted via the Settings Panel, and hence can be changed on-the-fly.

Trades can be closed using various techniques available in the MetaTrader terminal, but note that if trades are closed outside the control of ForexGM, the accounting data will no longer be reliable.

Close Greater-Profit-Than:
Close Greater-Loss-Than:

These settings are only enabled when set to a positive, non-zero value, and *Close Orders Now* = *Close-At-Specified-Profit-Loss*. As an example, if *Close Greater-Loss-Than* is set to 100 and the base account currency is USD, only trades showing a loss of US$100 or more will be closed.

Close Grid-Type: (Main-and-Hedge, Main-Grid-Only, Hedge-Grid-Only)

This parameter works in conjunction with the *Close Orders Now* option. If set to the default *Main-and-Hedge*, all grid orders will be included when assessing the criteria to determine which trades to close. If *Hedge-Grid-Only* is selected for example, Main-Grid trades will be filtered out and only Hedge-Grid trades would be involved.

Close Orders-Type: (Buys-and-Sells, Buys-Only, Sells-Only)

As with the previous parameter, this works in conjunction with the *Close Orders Now* option. If set to the default *Buys-and-Sells*, all order types will be included when assessing the criteria to determine which trades to close. Somewhat expectedly, if *Sells-Only* is selected it means only Sell trades would be included.

Close Orders Now: (default = Close_None)
- **Close-None** – Continue trading as normal
- **Delete-Pending** – Only delete Pending Orders
- **Close-Trades** – Close Open Trades
- **Close-At-Specified-Profit-Loss** – Close trades that have profit/loss outside the limits (above)
- **Close-Run-Now** – Close all trades matching the *Close Grid-Type* and *Close Orders-Type* criteria

If *Delete-Pending* is set, be aware that no new pending orders will be placed until after the next full Close-Run.

Fixed-Center and Moving-Center Scenarios

Fixed-Center Grid

Figure #6: This image illustrates a Fixed-Center grid run in Strategy Tester with the settings below. The equity graph is also included to demonstrate a useful technique for comparing the profitability of various strategies.

Main Grid	Fixed-Center
Main Order Type	Buy-Sell
Main Trend Direction	Counter-Trend
Main Grid Spacing	5
Main Max Pending Buy Orders	1
Main Max Pending Sell Orders	1
Main Center-Zone Pips	0
Main Take-Profit Pips	0
Main Stop-Loss Pips	0
Main Trail-Stop Pips	3
Main Profit Pips Before TS	16
CR Trail-Stop Percent	0.15
CR Profit Percent Before TSP	0.80

As the price moves out from the fixed center-line, Sell-Limit and Buy-Limit orders are placed and opened when the prices reach the appropriate levels. With these settings, only one pending order is placed in each direction. Individual trades are closed by the Trail-Stops. The Run will close once the profit has reached the target 0.80% of Chart-Equity (or more) followed by a drop of 0.15% from that threshold.

Moving-Center Grid
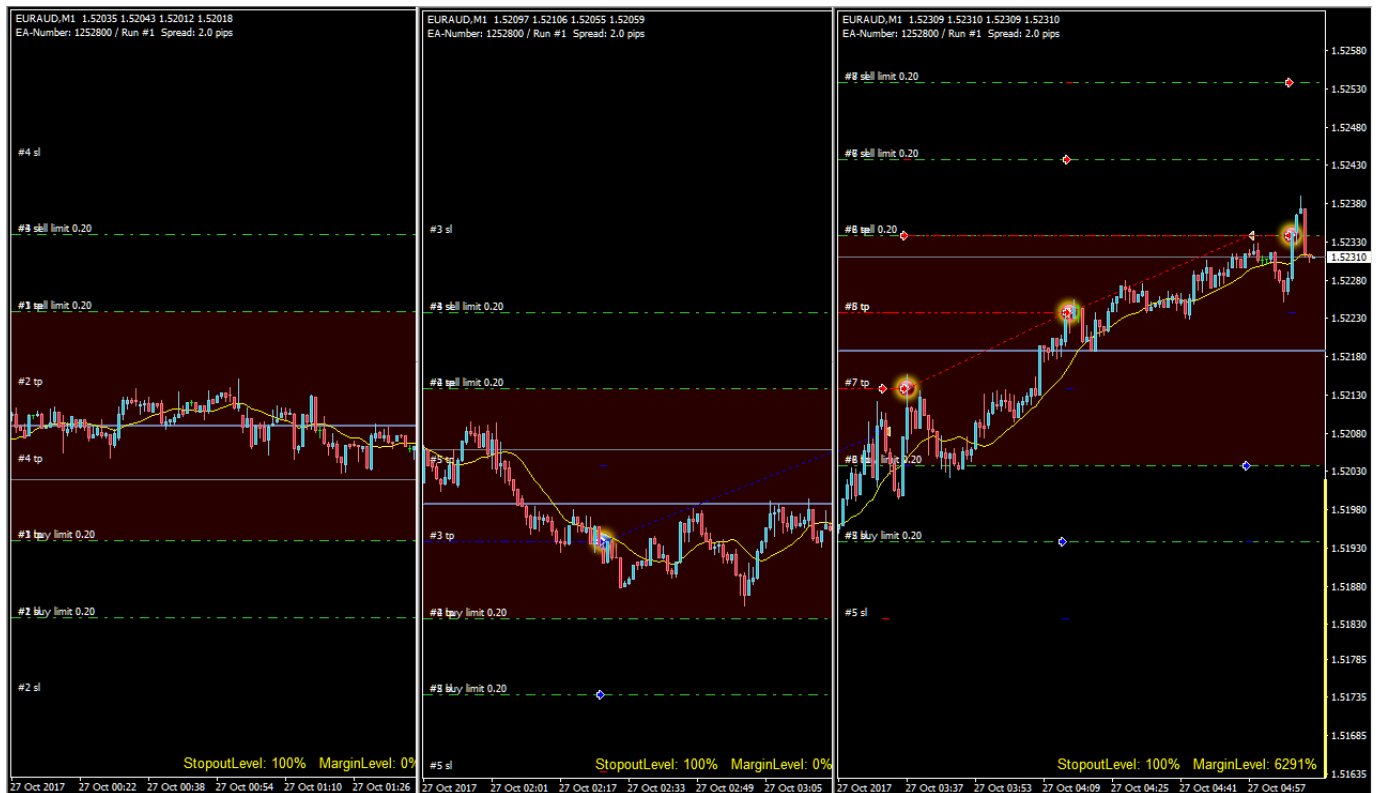
Figure #7: This image shows snapshots at three different positions along the time-line to illustrate how the moving center is adjusted as price moves, and keeps orders outside the excluded center-zone.

The following settings were used to produce the result shown. The best way to understand how the Moving-Center works is to use settings similar to these and run a test or two in the Strategy Tester.

Main Grid	Moving-Center
Main Order Type	Buy-Sell
Main Trend Direction	Counter-Trend
Main Grid Spacing	10
Main Max Pending Buy Orders	2
Main Max Pending Sell Orders	2
Main Center-Zone Pips	30
Main Take-Profit Pips	30
Main Stop-Loss Pips	10

In section #1 of Figure #7, the Buy and Sell pending orders are placed symmetrically around the center-line price set when the Run started. The dull-red band is an indication that the Center-Zone extends 15 pips either side of the center-line where orders cannot be placed. As the price moves down in section #2, a Buy is opened at the Buy-Limit. This does not change the center-line or trigger adjustment of other grid orders. However, the price turns back up and closes this Buy trade on a Take-Profit target. This leaves a gap between the lowest Sell-Limit and the highest Buy-Limit of 40 pips, i.e. greater than the 30 pips set for Center-Zone. To correct the situation, the top Sell-Limit is relocated as close as possible to the current Bid price resulting in a shift downwards of the center-line.

In section #3, the price continues its upwards movement, opening Sells and adding Sell-Limits along the way. In the lower portion of the grid, Buy trades are being closed at Take-Profit targets and new Buy-Limits added as appropriate. The end result is that the center-line moves roughly in sync with the currency-pair price.

Grid Runs... The Magic at the Heart of ForexGridMaster

MainGrid and HedgeGrid Runs

When ForexGridMaster is initiated on a chart, no matter what the preset-file strategy settings are, grid Run #1 starts and pending orders are placed on the broker's MetaTrader4 server according to those settings chosen by trader. The only exception to this initial placement of pending orders, is when a delayed-start is dictated by the Auto-Restart parameters.

The philosophy that drives ForexGM is to break trading into blocks of trades, or Runs. A Run will close all trades and delete all pending orders when certain criteria have been met. These Run-Closes are controlled by carefully configured parameters that should produce the various desired outcomes – profit-targets, loss-limits, hedging, restart-delays, spike-response, and others as detailed in earlier sections.

Successful Forex trading relies heavily on visual aspects of the trading-terminal to help identify endless patterns in price movements that could lead to profitability. ForexGM extends the graphics built into MetaTrader4, with the aim of placing graphics in a meaningful context to convey the maximum amount of useful information. Spike-detection is one area where we have pushed the graphic 'envelope' to its limit. We also recognize the importance of back-testing various strategies before committing funds. The following screen-shot from a Strategy Tester Run illustrates how the Runs are marked on a chart, plus a few visual cues as the what might have caused the particular Run to close.
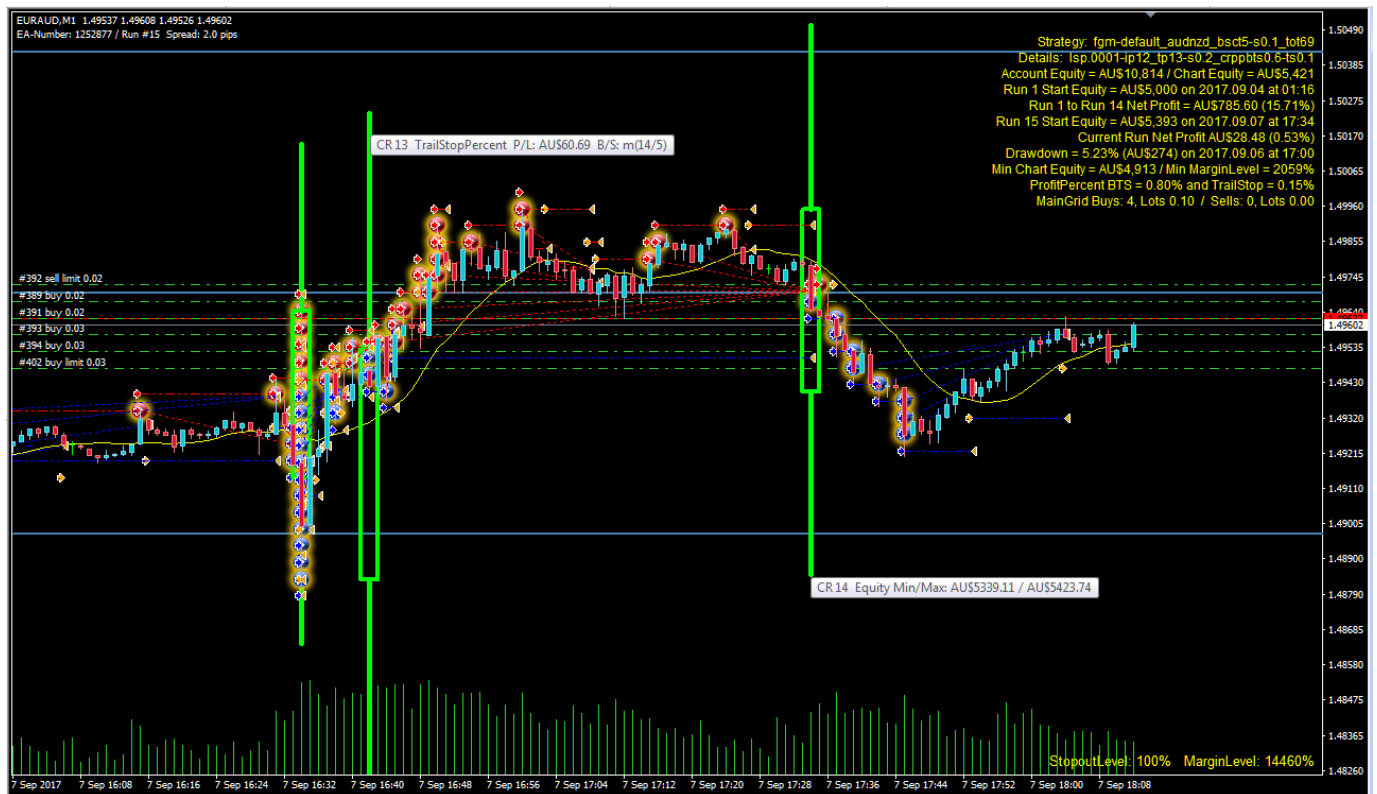

Figure #8: In this particularly busy screen-shot, we have attempted to capture several of the graphical features that are unique to ForexGM. The Green rectangles mark the end of a Run. Those shown here are colored Green because the three Runs were all closed in profit. If a Run is closed in loss, the rectangle would be Red. If desired, these default colors can be changed by setting values in the Profile. Hovering over the bars above and below the rectangles will display tooltips giving details about the associated Run.

A small icon is added to indicate where pending-orders are actually opened. In Strategy Tester, this feature is not of much benefit because the point pending-orders are opened is already marked with a small arrow. However, in Demo or Live mode, no arrow is drawn to indicate the opening of an order, so the additional icons can be extremely useful. Blue icons indicate Buy orders, and red for Sells. The strategy illustrated has a Main-Grid with Fixed-Center, which produces the horizontal blue lines marking grid center-price and the outer grid-slots that would be occupied if the maximum number of grid positions were filled. There are several other situations that result in horizontal lines to indicate various significant price levels. Hover over any line and the tooltip should identify its function.

Profile ForexGM_Advanced.prf – Alerts, Objects, Chart Display

The ForexGM_Advanced.prf file is optional, and to take effect it should be placed in both these folders -- "[MT4 Data Folder]\MQL4\Files" and "[MT4 Data Folder]\tester\files". ForexGM can run with the ForexGM_Advanced.prf file using its default values, but there are many settings that might be customized to suit personal preferences. Changes made to these prf files affect all instances of ForexGM running in a terminal. Note that the Strategy Tester profile is separate from the profile in the normal run environment. Any new ForexGM instance will automatically adopt the appropriate profile once it is set up.

Some options allow an email to be sent when an Alert is triggered. This requires additional MetaTrader4 terminal configuration. In the menu, Select Tools > Options > Email, and enter the required details. Only one email address can be used and this applies for all Alerts sent from ForexGM. If you wish to customize the sounds for various Alerts, load the required sound-files into the [MT4 Data Folder]\Sounds folder and modify the relevant references in the Profile.

The following fields are typical entries in ForexGM_Advanced.prf. Please take care to include the semi-colon (";") at the end of each line and before any comment delimiter ("//"). If the value of any field is set "default", ForexGM will use the relevant default value built into the software. Some fields appear in the Settings as well as in the Profile. In this case, any non-default value in Settings will take precedence over the value in the Profile.

Fields referring to colors can use any of the following formats...

Web-color Names:	clrMediumBlue
Hex Format:	0x665544 (0xBBGGR)
RGB Format:	20,30,40 (rr,gg,bb)

- ShowComments = default;
- TextSize = 9;
- TextColor = clrYellow;

- ChartBackgroundDark = true;
  There are two default styles built into ForexGM – one with a light-coloured theme, the other dark. Experiment with this field set to 'false' if you prefer a light background.

- CenterLineColor = clrSteelBlue;
- CenterZoneColor = default;
- TrailPriceColor = default;
- CloseBarInitialColor = default;
- CloseBarPartialColor = 85,85,143;
- CloseBarProfitColor = default;
- CloseBarLossColor = default;

- LogActivity = true;
- LogDebugInfo = default;

- AfterMarginLimitResume = true;
  When there is a Margin-Call on an Account, ForexGM pauses. With this field set true, ForexGM will continue trading if the Account Equity increases so that the Margin is again within limits. If set false, ForexGM will need manual intervention for trading to continue after a Margin-Call has been triggered.

- TestCommission = 0.00;
  This parameter simulates Commission when using the Strategy Tester. A value of 7.00 would represent a return-trip Commission of 7.00 units of Account Currency per lot.

- AccountNameTester = Joe Trader;
  If the MetaTrader4 Terminal is disconnected from the broker, it is often difficult to obtain the Account-Name. This name is required for ForexGM licensing. In order to use the Strategy Tester in off-line mode, enter the full name of the account in this field.

Alerts related to parameters in the following group will fire every time the particular trigger-event occurs.

- AlertRunClosedSound = true;
- AlertRunClosedPopup = false;
- AlertRunClosedEmail = false;
- AlertSpikeSound = true;
- AlertSpikePopup = false;
- AlertSpikeEmail = false;

The following three fields will produce an Alert only once when the trigger event first occurs, and will be reset to fire again after the MetaTrader terminal is restarted or ForexGM is reloaded.

- AlertMarginWarningSound = true;
- AlertMarginWarningPopup = false;
- AlertMarginWarningEmail = false;

A zero value for any of the following parameters will disable the particular Alert. Each of the Alerts in this group will only fire once per Run. Additionally, these Alerts will be reset whenever the EA or terminal is restarted. Note that any change of chart-period will also cause a reset of these Alerts.

- AlertTotalBuysOpenSound = 0; // (set the total number of Buys that will trigger Alert)
- AlertTotalBuysOpenPopup = 0;
- AlertTotalBuysOpenEmail = 0;
- AlertTotalSellsOpenSound = 0; // (set the total number of Sells that will trigger Alert)
- AlertTotalSellsOpenPopup = 0;
- AlertTotalSellsOpenEmail = 0;
- AlertHedgeOrderOpenBuysSound = 0; // (set the number of Hedge Buys that will trigger Alert)
- AlertHedgeOrderOpenBuysPopup = 0;
- AlertHedgeOrderOpenBuysEmail = 0;
- AlertHedgeOrderOpenSellsSound = 0; // (set the number of Hedge Sells that will trigger Alert)
- AlertHedgeOrderOpenSellsPopup = 0;
- AlertHedgeOrderOpenSellsEmail = 0;

For each Alert involving Sound, the following fields can be used to customise the sounds related to each event.

- SoundInputError = expert.wav;
- SoundRunClosed = alert2.wav;
- SoundSpike = alert.wav;
- SoundBuysOpen = alert.wav;
- SoundSellsOpen = alert.wav;
- SoundMarginWarning = alert.wav;

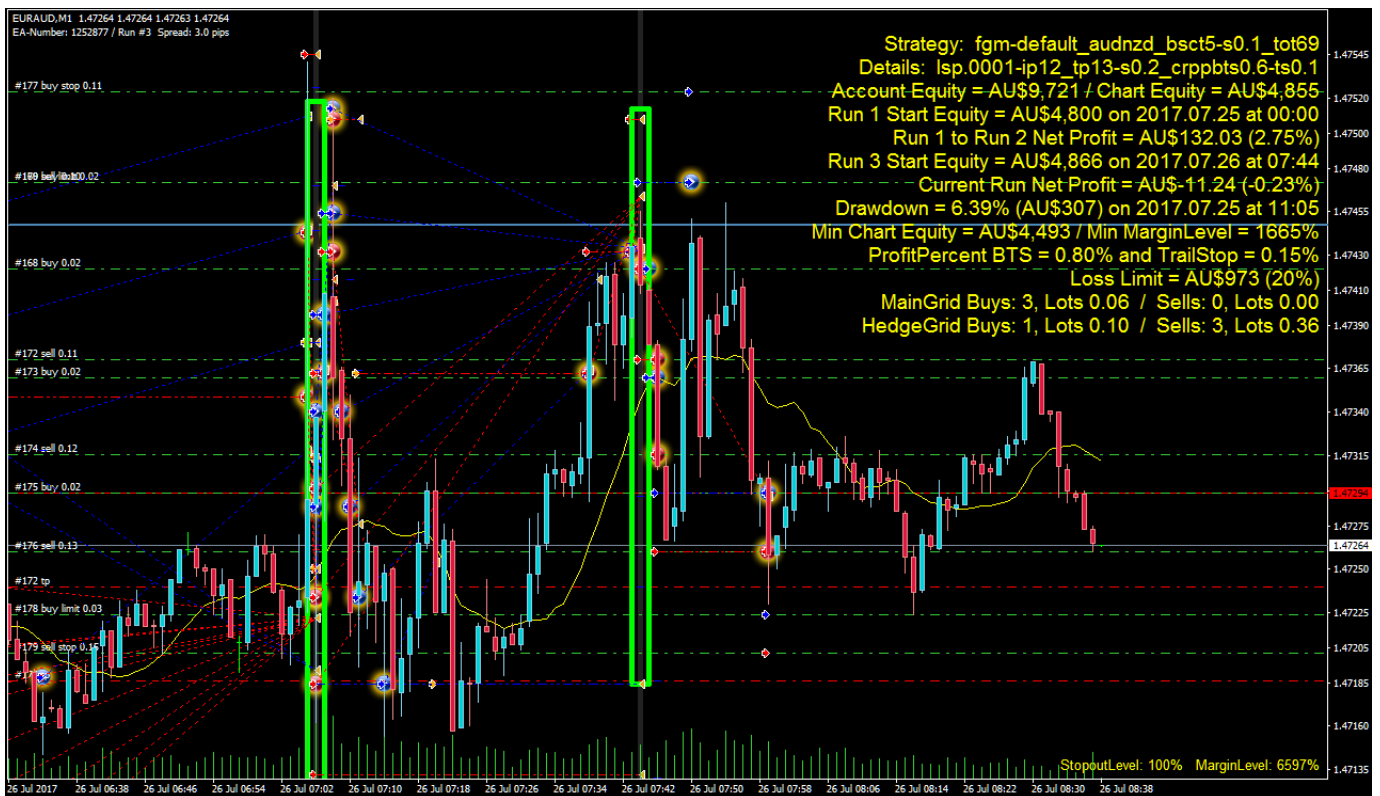## ForexGM Chart Comments

An example in Strategy Tester …

Figure #9: Chart Comments are completely dynamic and refreshed every tick. Some lines display only when certain parameters are set, for example the Profit-Percent/Trail-Stop comment-line shown above. In certain situations, a line might be highlighted or displayed in bold-font. Taking Profit-Percent/Trail-Stop again as an example, when the threshold ProfitPercent BTS is reached, the related comment-line is drawn in bold-font and the new threshold value is updated if pushed higher.

- Strategy: A free-form entry copied from the Settings-field that identifies set-file name and function
- Details: Another free-form field that could be used to display extra information about a strategy
- Account Equity/Chart Equity: Displays the split between Account-Equity and Chart-Equity
- Account Details at Run 1 Start: Original starting Chart-Equity plus date and time
- Net Profit Preceding Runs: Total Profit/Loss for previous Runs (money and percent) – useful for analysis
- Current Run Start Equity: Chart-Equity plus Date and Time at the start of the current Run
- Current Run Net Profit: Profit/Loss (money and percent) of current Run – updated tick-by-tick
- Drawdown: Maximum drawdown (money and percent) over all Runs, plus Date and Time of drawdown
- Minimum Chart Equity / Margin Level: Displays in Strategy Tester to facilitate risk assessment
- Profit Percent BTS: Details displayed if CR Trail-Stop Percent and CR Profit Percent Before TSP set
- Loss Limit: Displays the Loss Limit (money and percent) if CR Loss Percent is set
- MainGrid Buys/Sells: When the Main-Grid is active, this line displays the number of open Buy and Sell trades associated with the Main-Grid, and the total lot-size for each order-type
- HedgeGrid Buys/Sells: When the Hedge-Grid is active, this line displays the number of open Buy and Sell trades associated with the Hedge-Grid, and the total lot-size for each order-type

Testing and Problem Solving

When ForexGridMaster fails to function as you expect, it's time to investigate if your expectations are correctly aligned with the product, or whether a bug exists in the system that should be brought to the attention of our developers. First step is to carefully check the settings in the Properties Panel to ensure all inputs are properly configured and compatible with each other. No effort has been spared in preparing this manual to explain the subtleties and finer points of ForexGM, so please make good use of it.

By default, ForexGM specific error-messages are written to the log-file accessible through the "Experts" tab. Errors related to broker communication or transaction processing usually appear in the "Journal" tab. In the MetaTrader4 terminal, both these tabs are displayed below the chart window when the control-panel is visible. A new log file is created each day, and there are various techniques for retrieving information from earlier logs – please check the MT4 help files for details.

Some problems occurring in software (and hardware) might never be resolved because the problems cannot be reliably reproduced. When reporting a problem with ForexGM, please make every effort to provide sufficient information for us to recreate the problem. The level of debug information collected by ForexGM is controlled by the *Log-Activity* and *Log-DebugInfo* entries in both the Profile (prf file) and the Settings. The Settings related to a particular ForexGM instance take priority over any parameters in the Profile, so set both these parameters to 'true' in the Properties Panel to output all information that might provide clues in tracking down possible bugs.

Here is a broad checklist of steps to follow when you wish to report an ForexGM problem to Support...

- Close all open and pending trade orders -- either close manually or use the *Close-All-Now* option
- Remove ForexGM Advanced -- right-click on the chart Popup > Expert Advisors > Remove
- Delete all Global Variables -- Go to menu Tools > Global Variables > Select all > Delete.
- Delete all Objects from the chart -- right-click on chart Popup > Objects List > Select all > Delete
- Close the MetaTrader4 terminal
- Restart the MetaTrader4 terminal
- Load ForexGM on the chart -- drag-n-drop ForexGM from the Navigator Panel, or select chart and double-click ForexGM
- Configure the settings you want in ForexGM Properties Panel > Inputs tab, consult the manual for settings info
- In Properties Panel click Save and name/save the preset-file, usually to [MT4 Data Folder]\MQL4\Presets\
- Click OK to activate ForexGM Advanced

If ForexGM Advanced still does not operate the way you expect, please do this ...

- Send us the related preset-file previously saved to the [MT4 Data Folder]\MQL4\Presets\ folder
- Send us the relevant Experts log-file from [MT4 Data Folder]\MQL4\Logs\
- If the problem is visible on the chart, go to main menu File > Save as Picture… > Active Chart (as is)
- Describe what happened as best you can, and also provide the appropriate information listed below

The above procedure solves 95% of all reported ForexGM problems. Some of the remaining 5% could be due a corrupted MT4 program (not because of ForexGM), and this is usually fixed by a re-install of the MT4 software.

Please provide some or all (if appropriate) of the following information when reporting a problem to us …

- Name of Broker
- Account Type -- Micro, Mini or Standard account
- Account Leverage -- 100:1, 200:1, 500:1, etc.
- Run Environment -- Back-testing in Strategy Tester; Live or Demo account
- Account Balance, Account Equity and Margin level
- MetaTrader4 Release and Build Number (see main menu Help > About...)
- Does ForexGM show a smiley-face, and is it red?
- Is the problem related to a specific time-frame? If so, which one?
- Are there other instances of ForexGM or other EAs trading on the same terminal? If so, details please
- Attach the relevant preset ".set" file/s -- these are most important as they allow us to recreate the problem
- Attach Experts and Journal log-files, or copy/paste relevant sections into the email.

- Edit the Settings and set *Log-Activity* = true and *Log-DebugInfo* = true, and run the strategy again to see if more details can be obtained about the problem. If the log-files show additional information related to the problem, please include this latest log with the problem-report you submit to us.
- If appropriate, include a copy of the Account Statement accessed from the "History" tab on the control-panel at the bottom of the terminal. Right click in the History entries, select the reporting-period, and then choose "Save as Detailed Report".
- It might also help in diagnosing the problem to send us an image of the chart running ForexGM at the time the problem occurred. From the main menu… File > Save As Picture…
- Please be thorough and include any additional information that might be helpful