# XMT-Scalper

## What is XMT-Scalper

XMT-Scalper is a robot (a computer program, also known as "Expert Advisor" or "EA" for short) for the trading platform MetaTrader 4.

It's originally based on an early version of the commercial robot "MillionDollarPips" but has been extensively enhanced and improved. Today, all the code has been rewritten from scratch, and only a part of the core of the strategy is the same. This EA is not a commercial product but available for free.

## Background

During a moment of boredom, I decided to take a closer look at this, the original commercial robot, since it was so popular, and many also reported that it was very profitable compared to most other robots. So during spare times I first decided to clean up the code so that I could understand its strategy, and hopefully improve it. And so it all started…

It started as a one-man project, but today I regard it as an open source project, where anyone can participate in. Although I try to supervise it, especially since I have a strict standard when it comes to how program code should be written, commented and documented (I have a back-ground as a teacher in computer science and programming). And as a consequence, anyone who participates should try to follow this coding standard. It will make it easier for all.

If you're a programmer and want to improve it, then add a character "a", "b" etcetera to the version name, and upload it with proper comments to the forum below.

Discussions and new versions are published in http://www.worldwide-invest.org forum.

Se appendix for version history!

## Usage

Attach this robot on EURUSD and ANY timeframe. It will run on other currency pairs also, but will trade more often on EURUSD. It can be attached to any timeframe, since it force all calculations to be done on a tic-basis and the indicators uses M1-timeframe. If you attach it on any other currency pair, then be sure that this currency pair has a low spread.

This robot performs very well on backtests, it performs not as good on demo-accounts, and in order to perform on live accounts it's important to use a broker that (1) accepts scalping without limits, (2) offers a narrowed "Spread" and "Stop Level", (3) does not send requotes and slippage too often. In most cases, the robot will perform badly on live accounts, because of the above "problems". Also, it's important to have the MetaTrader4 platform running on a computer or server as close as possible to the broker server in order to have as fast execution of orders as possible (latency).

## Input Settings

General Settings:

The settings under "General settings" should not affect the trading.

**Magic:** This is known as the MagicNumber in MetaTrader, a number that must be unique for every robot attached to the MetaTrader platform. The default value is 0, which is equal to the number for manual trading. If you attach other robots to the same MT4 platform, then each robot must have its unique number. If this is the only robot attached, then leave this number to 0. The default settings is -1, which will calculate the magic number automatically based on the account number and currency pair. This is handy if you want to apply this EA to several charts, and/or uses other EA's at the same time on other charts. Since this will make sure that none of them has the same magic number. Magicnumber is used by all EA's to identify their own orders.

**OrderCmt:** This is a comment sent with every order to the broker, and it also appears in the Terminal window under the tab Trade and Comments. The default text is "XMT-Scalper" (with version number). An empty comment line imitates manual trading.

**ECN_Mode:** Most brokers accepts that TakeProfit and StopLoss are sent at the same time as the order is sent (ECN-Mode = FALSE). However, some brokers requires the order to be sent without TakeProfit and StopLoss, and then a following order that modifies the first order with the TakeProfit and StopLoss (ECN-Mode = TRUE). The default value is FALSE. Only change this to TRUE if you're certain that your broker requires a modify-order to be sent with the TP and SL after the actual order. If set to TRUE the EA does not need to update the first order, with less risk of delay in the update process.

**Debug:** If there's any problem with the robot, then change this from its default value FALSE to TRUE and watch the Expert tab in the Terminal window for extra information. Do not leave this to TRUE for longer periods, since the log-files that are automatically created by MT4 then will become huge.

**Verbose:** The default here is FALSE. If set to TRUE, then it will show more detailed information on the screen about what the robot is doing.

Trade settings:

This robot is extremely sensitive, and the settings can and must be changed to suit the trading environment, which includes broker and latency (the connection speed between the computer where you run MT4 from and the broker server). If the robot doesn't trade, or if it makes too many loosing trades, then adjust the settings.

**MaxSpread:** This sets the max allowed Spread measured in points. If the broker spread is higher than this level, no trade will take place. For instance, 26 means a max allowed spread of 2.6 pip. You can adjust it to whatever level you want it to have. But please understand that the higher spread that is allowed, the higher the risk for losses will be.

**MaxExecution:** When the average execution time exceeds the MaxExecution, the EA will not trade. However, if you want it to trade anyway, then just set MaxExecution to 0, which is the same as not using this feature. If you want to restrict the execution time, then change this value to as many seconds you want * 1000. For instance, 3000 means 3 seconds, 10000 means 10 seconds, etc. The value you enter is measured in milliseconds. Every 5 minutes the EA will send a fake Order to the server in order to always have an updated average execution. The EA calculates a moving average of execution time based on the last 10 execution times. This feature also works on backtests, where it randomizes execution time between 0 and this value (unless you set this to 0).

If you set this value to anything else than 0 during backtesting, it will simulate variations in latency, similar to how it is trading live. That is, The EA will count the average ticks per minute and will skip a number of ticks proportional to the average ticks per minute and **MaxExecution**, assuming the worst case scenario that all orders will take MaxExecution time to execute. Note: This tick skipping is only done on backtesting and after a OrderSend or OrderModify.

With this feature we can get an idea on how latency can disrupt this trading strategy. You can see this feature in action if you make a backtest with **MaxExecution = 0** and compare the same BT with for instance **MaxExecution = 5000.**

Please understand that delayed execution during live trading can depend on several things. One is called "latency", which is the delay in the internet connection between your computer and the broker server, often caused by too much traffic, and/or low broadband connection, and/or long distances. And/or it can depend on the broker, where the server is either too overloaded by trading requests, or by market conditions (a common problem when trading live with real money) where orders cannot be filled.

**MaxExecutionMinutes:** When using MaxExecution (see above), a BUYSTOP order is sent on a regular basis, which then is modified and deleted in order to measure the execution speed at the broker. By default, this is done very 5th minute. If you want to change this interval, then change this value to as many minutes as you want this interval to be. Note: It should not be lower than 5 minutes. If MaxExecution (see above) is set to 0, then no such BUYSTOP orders are sent.

**StopLoss:** The StopLoss is the number of points where the order should be closed if it goes in the wrong direction. The value should not be lower than the TakeProfit value. For instance, set to 60.0 means 6 pip. And as like TakeProfit, it's automatically adjusted to broker STOPLEVEL and. So if you set it too low, and the broker STOPLEVEL or FREEEZELEVEL is higher, it will be recalculated accordingly. This value should "normally" not be changed. Only change it if you want to make backtests and try different settings to improve it on other currency pairs than EURUSD. Default is 0, which means that it will try to no allow any losses. For practical reasons this is impossible though.

**TakeProfit:** This sets the size of the TakeProfit in points. Note: The TakeProfit should not be too large, nor too small. Also, the TakeProfit is automatically adjusted to broker STOPLEVEL and broker FREEEZELEVEL) if it's set to a too low value. For instance, 10 here means 10 points, which is equal to 1 pip. This value should "normally" not be changed. Only change it if you want to make backtests and try different settings to improve it on other currency pairs than EURUSD. Default is 100, which means that it initially sets the goal to make a 10 pip in profit, and then trail the profit further.

**AddPriceGap:** Additional price gap in points added to SL and TP in order to avoid Error 130. Default is 0. If you want to increase the gap between the current price and the StopLoss and TakeProfit for every order, you can do so here. This gap is normally only between the price and the broker stoplevel, which is very narrow and can cause many errors of type 130. By increasing this gap the SL and TP is widened, and the number of error 130 is decreased. The values are in points (1 / 10) pip. Note: Do not increase this too much.

**TrailingStart:** This value will set the threshold for when the TrailingStop will start in points (10 points equals 1 pip). For instance, if you set it to 5, it will start trailing as soon as the price moves 0.5 pip from the order price in the right direction. It does not affect how much the TrailingStop will increase, just when it will start. The increase is calculated dynamically. Default is 23, which means that it will try to trail profitable orders once it has reached 2.3 pip in profit.

**Commission:** Most brokers do no charge commission, but some do, and they do it on some of their accounts, typically so called ECN accounts. Commission is added to orders when they are closed, but this EA also

consider it during trade, because the final cost of the order otherwise will be much higher than expected. For instance, if a broker charges 7 in commission, it means that they charge 7 USD for every 1.0 lot. Converted to lotsize, this mean that the actual lotsize can be considered to be 7 points (0.7 pip) larger than what is seen. Default is 0, and only state the value in US-dollar for 1.0 pip here IF the broker charges commission on the orders, something that they broker openly declares on their websites for their different account.

**Slippage:** This sets the maximum allowed difference in price, known as slippage, between the price you send at the time you execute an order, and the price you get. It's measured in points (1 / 10 pips). Default is 3 points.

**MinimumUseStopLevel:** In case the broker Stop Level is 0 and "AddPriceGap" is set to 0, there must still a gap, otherwise there will be too many errors of type 130 (wrong Stop Loss and/or Take Profit). This value in points, which by default is 10 (1 pip), simulates a wider broker Stop Level. If there still are too many "Error 130", then try to widen this value more, or the value of "AddPriceGap".

Volatility Settings:

This is actually a part of the trading settings, but covers more specific settings for how the scalping should be done.

**UseDynamicVolatilityLimit:** The level for the VolatilityLimit (see below) can either be a static value or a dynamic value. If FALSE, then the value of the "VolatilityLimit" (see below) will be used. If set to TRUE then the value of the "VolatilityLimit" will be calculated as follows:

VolatilityMultiplier / 10 * RealAverageSpread, where "VolatilityMultiplier" is set as below, and "RealAverageSpread" is the average value of the spread during the last 30 tics + any broker commission. So for instance, if the spread is 16 (1.6 pip) and commission is 0, then "VolatilityLimit" will be 200 points (or 20 pips), since 125 / 10 * 16 = 200.

**VolatilityMultiplier:** A multiplication factor to be used if the above "UseDynamicVolatilityLimit" is set to TRUE. Default 125. Before you change this, please make sure that you make some calculations according to the formula above based on different spreads so that you fully understand how this value changes.

**VolatilityLimit:** This sets the sensitivity for when trading will start, based on the size of the volatility (how much the prices has moved). It's the distance in points between the highest price (known as iHigh) and lowest price (known as iLow) during the current bar. If the price moves more than this, an order will be opened in the opposite direction. If you set this level to too high, there will be fewer trades, but it could also increase the

winning rate. If it's too low, it will start to trade more often, but the winning rate could decrease. Note: This is one of the most important parameters to change if you want to adjust the robot for any other currency pair than EURUSD and don't want to use "UseDynamicVolatility-Limit". It can be as low as 50 (or even lower) or as high as 500 (or even higher). A value around 180 (18 pips) seem to be a good average.

**UseVolatilityPercentage:** Normally the Volatiliity (the difference between iHigh and iLow during the current bar) must be more than the VolatilityLimit in order to trigger a trade, disregarding of how much the VolatilityLimit is. If this is set to be TRUE, then this difference must exceed with a minimum percentage known as "VolatilityPercentageLimit" (see below). For instance, if "VolatilityPercentageLimit" is set to 60, then the Volatility must exceed the "VolatilityLimit" with at least 60%. So if VolatilityLimit is 180 then the Volatility (the difference between iHigh and iLow) must be 180 * 1.6 = 288 points.

**VolatilityPercentageLimit:** A factor used if the above "UseVolatility-Percetage" is set to TRUE, and measured as percentage. For instance, 60 means 60%. Otherwise not used. Set this to a whole value representing how many percentage more you want this to be (see explanation above under "UseVolatilityPercentage"). The higher the value, the fewer trades but most likely also stronger signals.

Use Indicator Set: Indicators:
1 = Moving Average, 2 = BollingerBand, 3 = Envelopes:

This EA measures the volatility, which is how strong the price fluctuations are from its normal range, and look for breakouts from a "channel" made of an indicator. It's possible to use different indicators for this, and this is selected here.

If you choose "1" for Moving Average, it will calculate two lines, one upper and one lower, which together will act as "channel".

If you choose "2" for "BollingerBand", then this indicator will be used to calculate this "channel". For this indicator, there's also an option to adjust "BBDeviation" (see below).

If you choose "3" for "Envelopes", then this indicator will be used instead. For this indicator there's a setting called "EnvelopesDeviation" (see below) that also can be adjusted.

**BBDeviation:** For the indicator "BollingerBands" this setting changes how much the calculated value is allowed to deviate from the main line. This is a decimal value with 1.5 as a reference to start with. The higher the value is, the wider the "channel" becomes. To understand this, you can attach the "Custom Indicator" called "Bands" to a chart and change the setting "BandsDeviations" to visually see how wide or narrow the "channel"

becomes. Use Period = 3.This is also an important parameter that should be adjusted for other currency pairs than EURUSD.

**EnvelopesDeviation:** For the indicator "Envelopes" this setting changes how much the calculated value is allowed to deviate from the main line. Like the above "BBDeviation" it's easiest to understand this y attaching the indicator "Envelopes" to a chart and adjust the "deviation". Use Period = 3. Default value is 0.07.

**OrderExpireSeconds:** Default is 3600, which equals 3600 seconds or 1 hour, and measures how long any open orders should be alive before they are deleted. If set to 0, they will be open until they are closed or deleted by other conditions. This setting should normally not affect the trading.

Money Management;

**MoneyManagement:** By default this value is set to TRUE, which means that lot size is automatically calculated based on amount of Free margin, Risk and StopLoss. If you for any reason don't want to use this but instead want to trade with a fixed lot size, then change this to FALSE, and also change the value of ManualLotsize (see below) to whatever fixed lot size you want the EA to trade with.

**MinLots:** This is the lowest allowed lot-size that the robot will be trading with. By default this is set to 0.01, which is the lowest lot-size that most brokers allows. However, some brokers does not allow that small lot-sizes. So only set this value if your broker has any other minimum for the lot-size, OR if you do not want the robot to trade with too small lot-sizes.

**MaxLots:** This is the largest allowed lot-size that the robot will be trading with. By default this is set to 100. Please understand, that most brokers do not allow trading with larger lot-sizes than 100, so it's pointless to set it to a higher value than that. Also remember, that when trading live, it is less likely that orders will be processed if the lot-size is too big. There's never a problem to trade with lot-sizes of 100 on demo-accounts, but scalping with such a high lot-sizes on real accounts can normally not be done due to market conditions. This value can also be decreased if you don't want the robot to increase the risk at the same rate as the profit grows. Since the risk also depends on the lot-size, which is calculated dynamically, but never is allowed to be higher than this value. However, risk level should be adjusted with the "Risk" setting (see below) and not this setting.

**Risk:** This sets the risk you accept for each separate order. The actual risk is within 100% to 150% of this value. An exception is when indicator ATR is used (see above), where the risk percentage increases. For instance, if you set the risk to 2, then not more than 2% to 3% of the current balance will be at risk per order. It can be set to anything between 0.1 and 99.

The risk size calculates the lotsize as follows: Equity * Risk / 100 / StopLoss. So if the free margin is 10000, the Risk is 2, and the StopLoss is 60, the the lotsize will be 3.33 (since 10000 * 2 / 100 / 60 = 3.33). This assumes that the order will hit StopLoss, resulting in a loss of Risk% of the Equity (the amount of money that the broker allow you to trade with). Note: The Risk is always re-calculated every time the EA starts, so that it's within the allowed limits. Note: the Risk cannot be set to a value lower than 0.1%. If you set it to 0, it will be re-adjusted to the lowest possible Risk. And if you set the Risk to 100, it will be adjusted to the highest possible Risk.

**ManualLotsize**: By default, this is never used, since lot size will be calculated automatically. However, if you want to trade with fixed lot size, then change MoneyManagement (see above) to FALSE, and set this value to whatever you want it to be. Note: Lotsize is always re-calculated to make sure that it's within the allowed limits, so it's not possible to force it beyond the Risk limits.

Screen_Shooter:

**TakeShots:** This feature will make screen dumps every time an order is executed, and save the pictures with the file name "SnapShot" + currency pair + "M5" +"year-month-day" + "hour_min_sec" + number + ".gif".

**DelayTicks:** Number of tics to delay after every new bar.

**ShotsPerBar:** Number of screen shots per bar.

## Log file

The EA writes a log file, which is saved in expert/files (if you run demo or live account) and in tester/logs (if you run Strategy Tester) as "current date.log". You can access this file at any time to view more details about the broker and the actual trading, whether this is on demo or live account, or after backtests. The first part of this log file contains the settings, followed by broker information. Then follows the actual trade information. And if you have activated the "Debug" mode (see above), this log file will also contain lots of other information. Once the EA has stopped, the last part of this log file will also contain a summarized report about all errors received from the broker server.

## Backtesting

You can run the "Strategy Tester" in MetaTrader 4 for backtests using any timeframe, but must load Historical Data for the timeframe **M1** for the currency pair that you're testing. Please understand that the historical

data does not come from the broker but from MetaQuotes, the company behind MetaTrader 4. The prices can and will for sure differ slightly. The spread on the other hand is a fixed spread that comes from the broker at the time you run the backtest, and it differs from every time you run the backtest. As a result you will get different results each time you run the backtest. And during weekends the spread is extremely high. To overrule this, I recommend that you download and install the program and script "Spread Controller" (aka "Spread Changer") from http://www.mt4i.com/spreadcontroller.aspx . With this, you can set any spread you want.

Please also understand that the historical data from MetaQuotes for M1 does not include the prices for every tick, but only for every bar (every minute). This means that MetaTrader simulates the tick data within every bar, making backtests unreliable. That is, backtests can never be 100% true, and should only be used to compare and evaluate different settings. And give an overall understanding of the trading results.

It's possible to do backtests using complete tick data from the company DukasCopy. You can read more about this at http://eareview.net/tick-data.

## Strategy

The strategy of XMT-Scalper is scalping on tic-basis, where the EA opens BUYSTOP or SELLSTOP orders when price breakouts occurs based on a specific indicator. The indicator is either two "Moving Averages", "Bollinger Band" or "Envelopes" for the last 3 minutes. Any of the indicators can be used as decided from the external settings "UseIndicatorSwitch".

For all indicators, "a channel" is calculated. And how wide this channel will be is decided by "VolatilityLimit" in points, which by default is calculated and adjusted dynamically, but also can be set to a fix value. If dynamic, it calculates this value as a multiplication of the average spread during the last 30 tics, and the value of the "VolatilityMultiplier".

How much the breakout should be in percentage of the band-width is set by "VolatilityPercentageLimit" in percentage of the channel width.

Only one order is opened at a time, and an opened BUYSTOP / BUYSELL order is treated differently from an opened BUY / SELL orders as follows:

An open BUY-order is modified with a new StopLoss (SL) and TakeProfit (TP) if its current "TakeProfit" is less than the "current Ask price" + "Commission" + "TakeProfit" + "AddPriceGap" AND "current Ask price" + "Commission" + "TakeProfit" + "AddPriceGap" – "existing TakeProfit" is larger than the "TrailingStart".

An open SELL-order is in a similar way modified with a new SL and TP if its "current TakeProfit" is greater than "current Bid-price" - "Commission" + "TakeProfit" – "AddPriceGap" AND "current TakeProfit" – "current Bid-price" – "Commission" + "TakeProfit" – "AddPriceGap" is larger than the "TrailingStart".

The SL for the modified BUY-order is changed to "current Bid-price" – "StopLoss" – "AddPriceGap", and the TP to the "current Ask-price" + "Commission" + "TakeProfit" + "AddPriceGap".

And for the modified SELL-order, the SL is changed to "current Ask-price" + "StopLoss" + "AddPriceGap", and TP to "current Bid-price" – "Commission" – "TakeProfit" – "AddPriceGap".

Open BUYSTOP and SELLSTOP orders are either modified or deleted. They are modified with new SL and TP as follows.

An open BUYSTOP order is modified if the "current Ask-price" + "StopLevel" + "AddPriceGap" is less than the "OrderOpenPrice" AND the "OrderOpenPrice" – "current Ask-price" + "StopLevel" + "AddPriceGap" is greater than "TrailingStart".

An open SELLSTOP is modified with new SL and TP if "current Bid-price" – "StopLevel" – "AddPriceGap" is greater than "OrderOpenPrice" AND "current Bid-price" – "StopLevel" - "AddPriceGap" – "OrderOpenPrice" is greater than "TrailingStart".

If the conditions are not met for the BUYSTOP or SELLSTOP order, then they are deleted.

## Final note

The default settings have been optimized for the currency pair EURUSD due to the fact that this pair offers the lowest spread. If you want to run it on any other currency pair, then please remember that a small, narrow spread and stoplevel as well as fast execution are the most important factors. It's pointless to try to use this robot on currency pairs that are more than 3 pips in spread, or with brokers that uses too wide stoplevel. You also need to run backtests with different settings to find the best combination of settings. And if you want to try it on a live account, then please remember that most brokers uses a much higher spread on their real accounts than on their demo-accounts. So be sure that you know the typical spread and stoplevel for the real account first.

Finding a good broker is extremely important if you're going to run the robot on a live account with real money. First of all, the broker must accept scalping without restrictions. Secondly, the broker must offer low spreads. On the EURUSD this means less than 2 pips, preferably 1 pip or less. The reason, is because the robot makes many small trades and exits

trades within a minute or so. Third, the stoplevel must also be low. This is how many pips that must differ between the current price and the price for takeprofit and stoploss. This stoplevel is usually also different between currency pairs. All that information for the broker can easily be seen from the "Strategy Tester" in MetaTrader. Choose the currency pair (EURUSD) and click on "Symbol Properties", and you will see information about spread, stoplevel, etc. Fourth, the broker should not use commission, or at least have a very low commission rate. Because otherwise, most, if not all, of the profit will be "eaten up" by the commission.

Please excuse any explanation and/or typing errors!

If you find any bugs and/or have suggestions for improvements, then contact me at the forum http://www.worldwide-invest.org.

---

## To-do list

- Stealth trading as an option, where SL, TP and unnecessary OrderModify commands are not sent to the broker, but all managed internally.

- Optimize settings for different currency pairs.

- Make the EA more profitable even during bad conditions (slow execution speed, high spread, requotes, etc).

- Improve trading signals.

## Appendix

Version history:

Ver. 1.0 (2011-09-24) by Capella:

- Cleaned program code that is fully readable, with proper names for functions and variables, and unused variables and program code removed.

- Dynamic settings for TakeProfit and StopLoss can now be changed from external settings as VolatilityLimit and Scalpfactor.

- Forced TrailingStop, as all tests shows that this is mandatory to make profit.

- This manual with explanation on how to use this robot.

Ver. 2.0 (2011-10-23) by Capella:

- Changed name from MDP-edu to MDP-Plus.

- Automatic trailing stop.

- Added additional settings for scalping as follows: UseMovingAverage, UseBollingerBands, and OrderExpireSeconds.

- Cleaned the code even more, to make it more readable.

Ver. 2.1 (2011-11-01) by Capella:

- Added IndicatorPeriod as external parameter.

- Modified calculation of the variable that triggers trade for better Performance.

- Removed Distance as an external, and automatically adjust it to be the same as broker STOPLEVEL instead, in order to overcome error 130. Error 130 can still occur though, depending on the fact that the robot tries to modify the StopLoss as close as possible to the broker STOPLEVEL. However, in most cases the StopLoss will be modified the following tic.

- Removed call for the function "sub_moveandfillarrays" as it doesn't make any difference.

Ver 2.1.1 - 2011-11-05 by Capella:

- Fixed a bug in the calculation of "local_highest" and "local_lowest" that caused wrong calls for "OrderModify".

- Changed the calculation of STOPLEVEL to also consider FREEZELEVEL.

Ver 2.1.2 - 2011-11-06 by Capella:

- Changed default settings according to extensive optimized backtests using a wide fixed spread of 1.6 pips.

- Added external parameter Deviation for iBands, default 2.0.

Ver 2.1.3 - 2011-11-07 by Capella:

- Fixed a bug for calculation of "local_isbidgreaterthanindy" that never triggered "BUY_STOP" and "SELL_STOP" order to be modified.

Ver 2.1.4 - 2011-11-09 by Capella:

- Fixed a bug that only made the robot trade on SELL and SELLSTOP.
- Put back the call for the sub "sub_moveandfillarrays" except the last nonsense part of it. The first part did make sense.
- Changed the default settings and re-ordered the global variables.

Ver 2.1.5 - 2011-11-10 by Capella:

- Fixed a bug that caused the robot to not trade for some brokers (if variable "local_scalpsize" was 0.0).
- Fixed a bug that could cause the lot-size to be calculated wrongly.
- Better output of debug information (more information).
- Moved a fixed internal Max Spread to an external. The default internal value was 40 (4 pips), which is too high IMHI.
- Renamed some local variables to more proper names in order to make the code more readable.
- Cleaned code further by removing unused code.

Ver 2.1.5a - 2011-11-15 by blueprint1972:

- Added Execution time in log files, to measure how fast orders are executed at the broker server.

Ver 2.2 - 2011-11-17 by Capella:

- An option to calculate "VelolcityLimit" dynamically based on the spread.
- Removed parameter "Scalpfactor" as it had no impact on the trading conditions, only on lotsize.
- Moved the parameter "IndicatorPeriod" to a global variable, as changing this value had little or no impact on the trading. The value is set to 3, so indicators are calculated 3 bars back.
- Better lot calculation, now entirely based on FreeMargin, Risk and StopLoss.
- A new scalp factor called "DynamicVolatilityLimit" based on the difference between VolatilityLimit and iHigh / iLow for triggering trades.
- The robot can now trade automatically on all currency pairs within spread limit from one single chart.
- Added broker Suffix.
- It now works on 4-digit brokers as well. However, the performance on 4-digit brokers is worse than on 5-digit brokers, and there are much less trades.

Ver 2.2.1 - 2011-11-18 by Capella:

- Fixed a bug for calculation of Commission. The variables "local_commissionpips" and "local_commissionfactor" moved from locals to globals.

Ver 2.2.1.2 - 2011-11-18 by Sonik:

- Added Screenshot Functionality.

Ver 2.2.2 - 2011-11-19 by Capella:

- Added automatic calculation of MagicNumber as an option.
- Adjust MinLot to broker minimum.
- Correction of lotsize calculation according to broker lotstep.

Ver 2.2.3 - 2011-11-21 by Capella:

- Fixed bug for calculation of lotsize calculation according to broker lotstep.
- Added broker Comission as an external parameter, and corrected the calculation.
- Re-arrranged some code - moving parts to subroutines.

Ver 2.2.4 - 2011-11-23 by Capella

- Improved performance.
- Cleaned code further and moved parts of code to subroutines.

Ver 2.2.4a - 2011-11-24 by blueprint.
- Added execution control.

Ver 2.2.4b - 2011-11-24 by Pannik
- Added manual fixed lots as an option.

Ver 2.2.5 – 2011-11-25 by Capella

- Fixed bug for too small lot size and wrong Risk settings.
- Changed randomized execution time for backtests to be within 0 and MaxExecution.
- Cleaned the code further.

Ver 2.2.6 - 2011-11-25 by Capella

- Fixed bug for too large lotsize.
- Fixed the bug for TradeALLCurrencyPairs.
- Moved broker suffix from external parameter to automatically calculated in a subroutine
- Removed unnecessary program code, cleaned and organized the code further

Ver 2.2.7 - 2011-11-30 by Capella

- Fixed a bug for the broker Commission

Ver 2.2.8 - 2011-12-04 by Capella
- Removed TradeALLCurrencyPairs as it was too buggy and could not cope with the fast trades, better attach on separate charts.
- Fixed bug where iMA was used instead of either/or iMA/iBands for modyfying BUYSTOP and SELLSTOP orders.
- Rewrote some of the code to make it easier to follow and understand.
- Rewrote subs to check lotsize and risk settings, and adjust them accordingly
- Added more comments to program code.
- Added time for how often fake orders should be sent in order to calculate execution speed (MaxExecutionMinutes).
- Removed unused variables and code.

Ver 2.3 - 2011-12-08 by Capella
- Changed name of the EA (from MDP-Plus) as the thread in the forum once again was deleted. This EA is now a copyrighted shareware – a non-commercial product free to use.
- Removed TradeALLCurrencyPairs as it was too buggy and could not cope with the fast trades, better attach on separate charts.
- Fixed bug where iMA was used instead of either/or iMA/iBands for modifying BUYSTOP and SELLSTOP orders.
- Rewrote some of the code to make it easier to follow and understand.
- Rewrote subs to check lotsize and risk settings, and adjust them accordingl
- Added more comments to program code.
- Added time for how often fake orders should be sent in order to calculate execution speed.
- Removed unused variables and code.
- Added check so no trading can start before we have gathered enough of Bar-data.
- Moved Slippage to an external parameter so it can be changed.
- Added summation of broker error codes.

Ver 2.3.1 - 2011-12-08 by Capella
- Fixed a bug that could cause lotsize to be greater than MaxLots.

Ver 2.3.2 - 2011-12-09 by blueprint1972
- Added option for simulated latency during backtests.

Ver 2.3.2b - 2011-12-09 by derox
- Added iEnvelopes and iATR as indicators.

Ver 2.3.2c - 2011-12-10 by Pannik
- Added "UseIndicatorSwitch" for choosing indicator to use.

Ver 2.3.2d - 2011-12-12 by derox
- Added AllAverages as indicator. Note: This requires external indicator.

Ver 2.3.3 - 2011-12-12 by Capella
- Added AddPriceGap as an external parameter to increase SL and TP in order to decrease number of error 130.
- Replaced iMA with AllAverages.
- Removed iMA AND iBands combination.

- Fixed minor bugs.
- Cleaned up the code further.

Ver 2.3.4 - 2011-12-13 by Capella
- Removed AllAverages as it didn't make any difference compared to standard Moving Average.
- Fixed bug for iATR indicator.
- Added dual-trade as an option for iATR.

Ver 2.4 – 2011-09-06 by Capella
- Removed some external settings incl. ATR and its settings.
- Added external settings "MinimumUseStopLevel"
- Fixed bugs, so it works better with different brokers without error 130.

Ver 2.4.1 - 2012-10-23 by Capella
- Added check for when ECN_Mode == TRUE and BUY/SELL orders have not yet been modified, to prevent running orders without SL. Wait 1 second and then modify the order with a SL that is 3 pip from current price.
- Changed default settings after extensive backtests using 99% tick-data.

Ver 2.4.2 - 2013-07 by Capella
- Added lot-size re-calculation if Account Currency is not USD but either EUR, GBP, CHF or JPY
- Added ReverseTrade as an option
- Changed algorithm for automatically calculation of magicnumber
- Added printout info if there was no errors reported from the broker server