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# Instruction (Manual) Document

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## Quick Guideline for Harmonic Pattern Plus for Starter

### Overview about Harmonic Pattern Plus

Harmonic Pattern traders use the geometric patterns detected from chart to spot the trend reversal (turning) points accurately. These geometric patterns are built up on Fibonacci ratio of each price extreme and called Harmonic Patterns. Up until now, there are more than millions of traders with different level of knowledge and experiences using these harmonic patterns.

Harmonic Pattern Plus is an automated pattern detection software to help your harmonic pattern trading a lot easier, simpler and faster. Of course, the main goal of this software is to help your profitable trading. Harmonic Pattern Plus was evolved many years incorporating experiences and requests of many different traders. As a result, Harmonic Pattern Plus contains many different feature and functionality. Because of this comprehensive feature, starters can get little frustrated. However, it is important to remember that everyone evolve to different stage and different mind-set in their trading career and it is better not assume anything too quick. As your skills improve with Harmonic Pattern Trading, you will be glad that Harmonic Pattern Plus has those feature and functionality to assist your trading. Obviously there are clear reasons for the presence of those feature and functionality for professional traders.

Having said that those are important feature and functionality, it is important to remember that you don't have to use all of feature and functionality at the same time. You will like to use some feature and functionality depending on your experience. You will switch off rest of feature and functionality because those unused part can make your chart really complicated. For example, when you don't understand that Harmonic Pattern trading is heavily relying on Fibonacci retracement, you may simply want to use the provided custom take profit and stop loss only for your trading. At this stage you may want to switch off Potential Reversal Zone from Harmonic Pattern Plus because they make your chart look much more complicated. However, if you understand how important the Fibonacci retracement levels for your trading, you will definitely use those PRZ line for your trading. As I often mention to junior traders, PRZ lines in Harmonic Patterns are the most logical ways of sorting Fibonacci level

present in the market if one have to draw all the possible Fibonacci levels in the chart. They will give you a lot of clue for accurate turning point. However, understanding PRZ lines definitely takes some disciplines.



Figure 1. Harmonic Pattern Plus with Potential Reversal Zone. To switch off PRZ lines, set Potential Reversal Zone Projection Depth = 0 and Display Fibonacci Retracement (DC Future Price Projection Level) = false.



Figure 2. Harmonic Pattern Plus with custom take profit and stop loss only without PRZ lines.

Besides PRZ lines, you can switch on and off other functionality you don't use. For example you can switch on or off Japanese candle stick pattern scanner, Regression channel, pattern completion interval, Guided Trading Instruction, etc from Harmonic Pattern Plus. Most of time, to switch on and off each elements, you need to go to Indicator setting. For example, to switch off PRZ lines completely, set Potential Reversal Zone Projection Depth = 0 and Display Fibonacci Retracement (DC Future Price Projection Level) = false from your indicator setting.

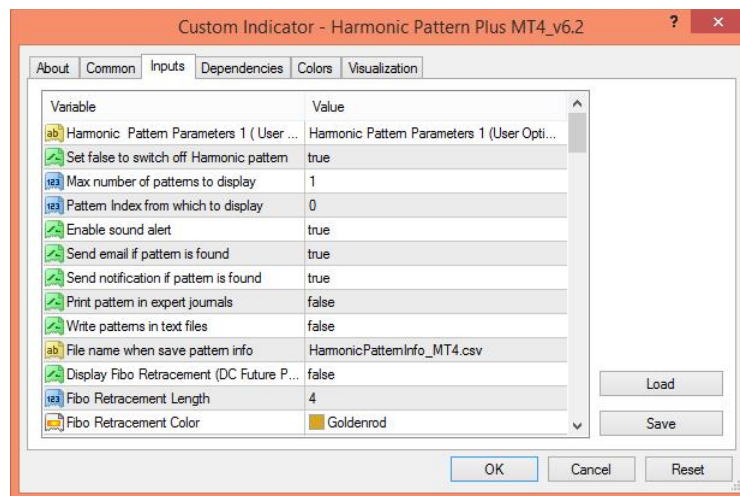


Figure 3. Indicator setting. Here you can switch on and off any feature and functionality of Harmonic Pattern Plus.

Here we provide brief description of each element in Harmonic Pattern Plus.

- Harmonic Pattern Detection – primary functionality of Harmonic Pattern Plus.
- Potential Reversal Zone Display – most logical way of sorting possible Fibonacci levels in the market.
- Custom Take Profit and Stop Loss – custom take profit and stop loss are provided for traders who need little simpler trading methodology. Literarily the sizes of custom take profit and stop loss can be changed from indicator setting too. You may select comfortable size according to your preference.
- Japanese Candle stick Pattern Detection – 52 Japanese candle stick pattern detection can assist your trading decision.
- Automatic Regression Channel – this regression channel give you some idea about overbought and oversold indication. Therefore, it is useful to gauge turning point.

- Guided Trading Instruction (GTI) – this panel display useful number and figure for your trading. For example, it include success rate for breakeven and your achievable profit targets based on your reward/risk ratio and your trading frequency.
- Pattern Completion Interval – Pattern Completion Interval define lowest and highest price level for point D or last pattern point for Shark pattern. Below or above this pattern completion interval box, Pattern can't be formed. Therefore, if the price goes below the pattern completion interval, then pattern formation is failed for bullish patterns.
- Mean Absolute Percent Error (MAPE) – pattern matching error between detected pattern and ideal pattern in the text book. Lower MAPE means closer to ideal pattern.
- Multiple Timeframe Pattern Detection – this feature allow you to monitor the patterns in different time frame efficiently. For example, if you attach Harmonic Pattern Plus to H1 timeframe EURUSD chart. Then you can still monitor what is happening in another time frame like M1, M5, M15, M30, etc without actually opening another chart.

### **Steps to improve your trading skills with Harmonic Pattern Plus for starter**

As Harmonic Pattern Plus is evolving through many years, addition of new feature and functionality can confuse starters. However, each feature and functionality were wanted and requested by many professional traders. So you will want these same feature and functionality as your skill set is improved too. It is matter of time for you to see how important those feature and functionality is. Here we provide one way to improve your trading skills if you are very new to Harmonic Pattern Trading. We recommend you to practice these steps on demo account first. These steps also can be applied to Harmonic Pattern Scenario Planner too.

- A. Firstly start with custom take profit and stop loss mode. Make sure that you are using secondary confirmation tool like RSI or other oscillators. Also you need to wait for the 1st candle to complete after the pattern is detected. This is very basic steps for Harmonic Pattern Trading explained in most of text books. In fact your typical entry with harmonic pattern will start at the open price of the second candle after the pattern detection.
  - A-1. While you are practicing step A, understand the number and figure in the Guided Trading Instruction. If Reward/Risk =5, you only need 20% success rate to break even. You can also set your target goal using Guided Trading Instruction.
  - A-2. You might learn how to use Regression Channel to improve accuracy in your decision. Automatic Regression Channel mode is fine.
  - A-3. Consider to use pattern completion interval. For example, try to understand what the consequence is when your stop loss is not covering the pattern completion interval box. If the price of EURUSD passes beyond Pattern Completion Interval box, you don't have to chase the

trading any more with your last pattern. With harmonic pattern scenario planner, you may already know what would be the price interval before the next pattern appears.

- B. Start to trade using PRZ lines. At this stage, you may switch off custom take profit and stop loss. However you can still use Guided Trading Instruction according to your Take Profit/Stop Loss target. If you can feel the difference between Step A and Step B, you are making really good progress.
- C. Many Harmonic pattern traders combine Harmonic Pattern Plus with advanced technical indicators like Ichimoku clouds or Keltner Channel or Renko chart, etc. Bring your strategy to more advanced level by polishing up.
- D. Start to use multiple entries. For example, you can use 2 buys or 2 sells instead of 1 buy or 1 sell. Second entry must have greater take profit but you can have the same stop loss. For example, if you want to enter buy position, then your first buy order may have take profit 30 pips and stop loss 15 pips whereas your second buy order may have take profit 60 pips and stop loss 15 pips. This is a basic version of multiple entries. For more advanced version, you may refer to other educational materials for trading.
- E. Use Harmonic Pattern Plus with Price Breakout Pattern Scanner. Try to understand how horizontal support and resistance lines (Harmonic Pattern plus) and diagonal support and resistance lines (Price Breakout pattern Scanner) interact together. This step is optional.

Use above 5 steps to learn about Harmonic Pattern Trading. Justification for use of multiple entries for Harmonic Pattern trading can be found from four stage of the trend described in the article “Birth of New Trend Triple Entry Trading Strategy”. However, multiple entries may not be suitable for starter. Therefore you can attempt the step D at very last part of your learning. When you complete above 5 steps, you will definitely see that your skills and understanding about trading and investment is far more improved than before. You will be able to ride big and small waves in the market. Above 5 steps are general guidelines for starters. Above 5 steps may be recommended for experienced traders too if they are new to Harmonic Pattern Trading. Your success on trading and investment are heavily depending on sound discipline. Therefore, while you are practicing above 5 steps, we recommend you to build more detailed trading plan suitable for your own trading style and life pattern.

## Appendix A–Pattern Completion Interval in Depth

### 1. Pattern Completion Interval

When harmonic pattern is newly formed, traders are advised to manage the entry timing carefully. In text book approach, you are advised to wait for the next candle to close on the predicted direction. For example, for bearish ABCD pattern, you need to confirm the direction by waiting for the bearish candle bar after the bearish ABCD pattern is detected. However, sometimes, the price at next candle can make new high or new low breaking the previous low or high and breaking the pattern formation. This has been a great concern between harmonic pattern traders in spite of the attractive Reward to the trading risk for Harmonic pattern trading. Pattern Completion Interval concept was devised to

overcome this limitation of harmonic pattern trading. When you enable pattern completion interval in harmonic pattern plus, you will see the Box around the last pattern point D. The box tells traders some important information. Of course, this information is directly related to your profit. Therefore, you need to understand the concept carefully. For example, Figure 4 shows the pattern completion interval for bearish ABCD pattern. For bearish pattern, you only need to concern two levels including upper limit level and ideal pattern completion level (middle line inside box). You can ignore lower limit level. Likewise, for bullish pattern, you only need to concern lower limit level and ideal pattern level.

## 2. Practical concern for Pattern Completion Interval

From the given pattern completion interval, you can observe practically important phenomenon for harmonic pattern trading. Firstly, you can observe that pattern is not always completed in ideal pattern. The pattern will be completed not ideal level but around the ideal level most of time because of noise or some random components presents in the price series. Secondly the pattern completion interval box size is different for each pattern. Indeed the size of the pattern completion interval box is the uncertainty representing pattern formation. The greater pattern completion interval box can be seen as a greater uncertainty for pattern formation and for your trading.

To help traders, harmonic pattern plus can display the size of box in pips always. You could use this in two ways. You may use the size of box directly to identify tradable patterns. For example, you can avoid trading if the size of pattern completion interval box is too large. Instead of using raw box size, you can also use the ratio of box size to your take profit to identify tradable patterns. For example, if you take profit is not sufficiently covering box size, which could be potential stop loss, you may avoid trading. We have found that market is not perfect and from our experience, sometimes, golden opportunity are there where you don't have to take any risk but rewards only. If you are starter, remember that smaller pattern completion interval will be easier to trade.

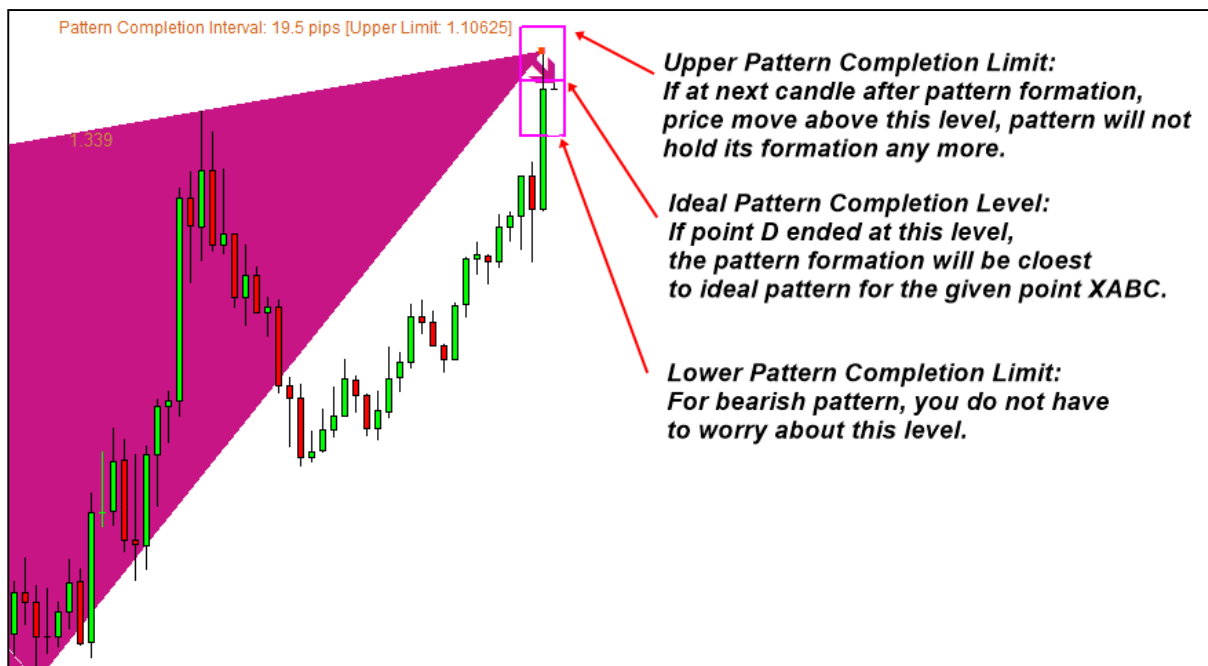


Figure 4. Pattern Completion Interval for Bearish ABCD pattern.



## Appendix B—Mean Absolute Percent Error in Depth

### 1. Mean Absolute Percent Error

As harmonic pattern detection and statistical geometric pattern detection share a lot of common knowledge, we use some established concepts from statistics, econometrics and other financial theory for our harmonic pattern software. Firstly we introduce the concept of pattern matching error. The pattern matching error is the error between the detected pattern (by Harmonic Pattern Plus) and the ideal pattern in the text book. The pattern matching error represents how closely the detected patterns are matching to the reference pattern in the text book. Some traders might doubt why we don't introduce the reverse concept of pattern accuracy (pattern accuracy = 1 – pattern matching error) instead of pattern matching error. Simply speaking, it is because it is the industrial standard to report the error than accuracy in many financial and statistical organizations. But the difference between pattern matching error and accuracy is none. You need to get used to convert pattern matching error to pattern matching accuracy for your financial trading.

There are many error metrics or loss function can be used for pattern matching error for harmonic patterns including MSE (Mean Squared Error), RMSE (Root Mean Squared Error), MDE (Mean Absolute Error), MAPE (Mean Absolute Percent Error). We list some of common error functions for your better understanding:

$$\text{Mean Squared Error, } MSE = \text{Mean}(E_t^2)$$

$$\text{Root Mean Squared Error, } RMSE = \sqrt{MSE}$$

$$\text{Mean Absolute Error, } MAE = \text{Mean}(|E_t|)$$

$$\text{Mean Absolute Percent Error, } MAPE = \text{Mean}(|P_t|)$$

Where  $E_t$  = measured ratio from chart – reference ratio,  $P_t$  = 100 x (measured ratio – reference ratio)/reference ratio.

To provide the universal measure of pattern matching error regardless of pattern types and their size, we use MAPE (Mean Absolute Percent Error) in our Harmonic Pattern Software. To help more clear understanding of our users, we present full formula for our pattern matching error, MAPE:

$$MAPE = \frac{1}{n} \sum_{t=0}^n \left| \frac{\text{measured ratio}_t - \text{reference ratio}_t}{\text{reference ratio}_t} \right|$$

As the pattern matching accuracy is equal to 1 – pattern matching error, Harmonic pattern with smaller MAPE represents the cleaner and more beautiful pattern. Both our Harmonic Pattern Plus and Harmonic Pattern Scenario Planner will report MAPE to traders. Traders can use this MAPE metrics to fine tuning entry and exit timing for their trades. Also remember that both Harmonic Pattern Plus and Harmonic Pattern Scenario Planner have the ability to replay historical pattern from your charts for your complete strategy development.

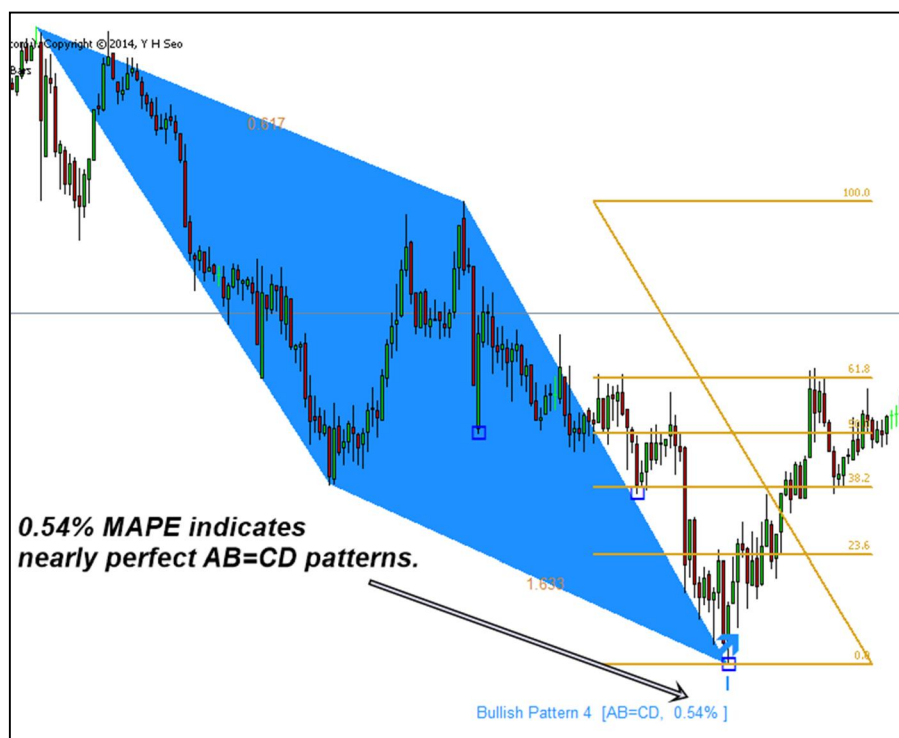


Figure 5. MAPE 0.54% is pretty good and trader can trade such a pattern with more confidence.

## 2. Pattern Matching Accuracy VS Success Rate

One common mistake for traders is to take pattern matching accuracy (= 1 - pattern matching error) as success rate of the pattern. This mistake is sometimes found in commercial software too. This is quite misleading and traders must not confuse between pattern matching accuracy and success rate.

Pattern matching accuracy represents how closely the detected patterns are matching against the ideal pattern introduced in the text book. Pattern matching accuracy will tell you how much the shape of the detected patterns are alike to the ideal pattern known to traders. Normally the detected patterns are expected to have MAPE less than 10%. However, we often observe that some patterns are as ugly as having MAPE 25%, but they still have quite good predictive power. However if MAPE is too large, then you may decide not to trade. The pattern look like a perfect pattern can still fail to spot trend reversal point due to many factors like noisy in data and round up errors in computing, etc.

On the other ends, Success rate represents how many times the patterns were successfully predicted the trend reversal in historical data. The success rate is highly subjective to pattern itself. For example, Shark pattern and butterfly pattern have different success rate. Our harmonic pattern software is well designed for you to study the success rate of each pattern and to improve your trading skills. Although we have pointed the difference between patterns matching accuracy and success rate by their definition, both also have strong connection too. For example, you will less likely to make a mistake in your trading when you spot the patterns with smaller MAPE in your charts. Because the pattern with large MAPE might indicate that the pattern is still immaturely formed, therefore the price might continue to move in the trend direction instead of tuning.

### 3. Further note on Pattern Matching Error MAPE

As we described, there are quite bit of mathematics used to describe how closely the detected harmonic patterns are matching against the ideal patterns. We did it by taking industrial standard approach. If you found it is difficult to digest the concept of Pattern Matching Error (MAPE), then good analogical concept can be found from Multiple Regression equation. For example, pattern matching error, MAPE is similar concept to Mean Square Error (MSE) of multiple regression equation.

For professional traders and investors, this can be very usual things they come across in their trading floor each day. Although there are little bit of theory to digest, traders are not necessarily need to know the math behind our pattern detection theory. Therefore, our harmonic pattern software can be used for any level of traders including beginners. So feel free to give a go with our harmonic pattern software. Traders just need to know that smaller MAPE (%) for the detected pattern indicates that the detected pattern is more close to ideal or perfect patterns from the text book.

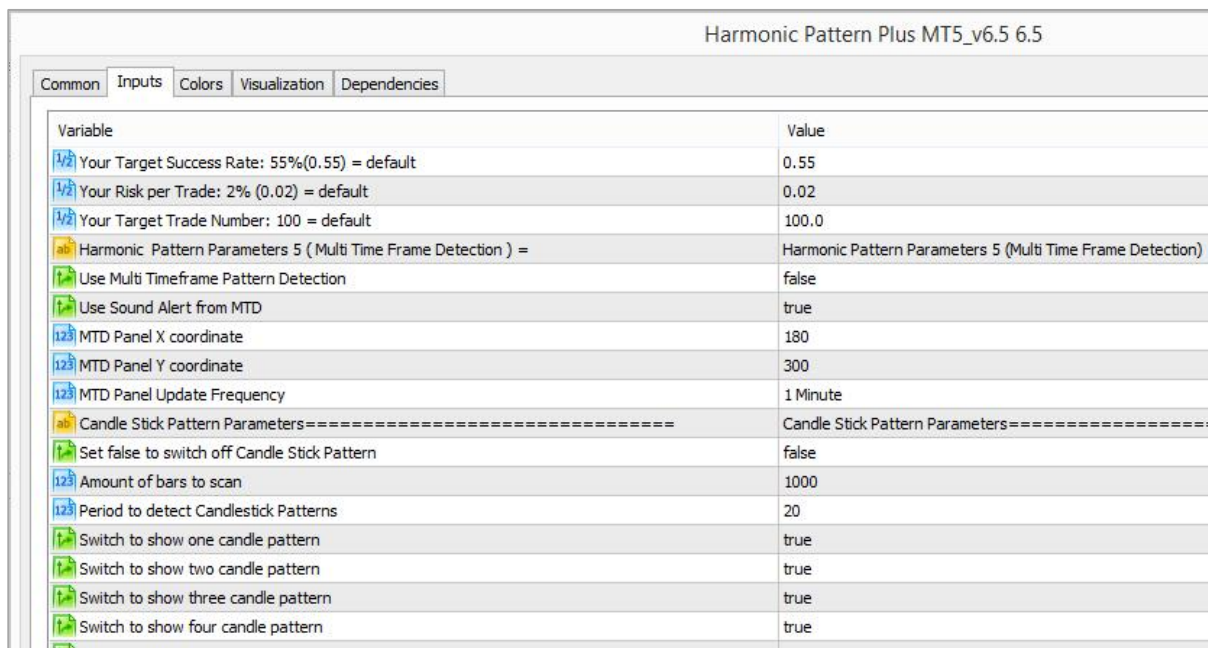
### **Appendix C–Multi Timeframe Pattern Detection (MTD)**

Multi Time Pattern Detection feature is the powerful tool for traders as it can help you to make trading decision with more comprehensive information. However, not every traders will use this feature. In addition the computation on Harmonic pattern Plus is much heavier with this feature. Therefore in default setting, this feature is off. MTD feature is useful to gauge overall outlook of the market. For example, if you like to monitor 12 main currency pairs. With this MTD feature, you only need to open 12 charts to monitor every time frame of that 12 currency pairs whereas this might require 84 charts (=12 x 7) in normal circumstance.

There are two ways to access to this MTD feature. Firstly you can control your access from input setting. So if you enter your custom indicator setting for Harmonic Pattern Plus, then you can see the variable

and value columns. These variables can be used to control the operation and appearance of harmonic pattern plus. You can do it by changing its value. You can change many things from the colour setting to pattern detection scheme in this Inputs Setting tab. To allow you running MTD feature at every new candle bar, simply you need to set “Use Multi TimeFrame Pattern Detection = true” from your input setting. Secondly you can control your access to this MTD feature using button in your chart. There are small buttons including GTI, BT, MTD on top of pattern button. When you press the MTD button you can hide or show this MTD feature in your chart.

These two different approach is little different in terms of operation and computation. For example, when “Use Multi TimeFrame Pattern Detection = false”, if you press MTD button, then the calculation is one time only. Therefore, it is lighter to compute. However, when you set “Use Multi TimeFrame Pattern Detection = true”, calculation of MTD will be performed automatically at every new candle. Therefore, when new bar opens, Harmonic Pattern Plus will perform heavy computation to detect pattern across all the time frames. Also this MTD features will normally show you the latest patterns in 7 different time frame including M1, M5, M15, M30, H1, H4 and D1. However if you see fewer than 7, then just press the MTD button again to let it recalculate.



| Variable   | Value  |
|--|--|
| Your Target Success Rate: 55%(0.55) = default                  | 0.55   |
| Your Risk per Trade: 2% (0.02) = default                       | 0.02   |
| Your Target Trade Number: 100 = default                        | 100.0  |
| Harmonic Pattern Parameters 5 ( Multi Time Frame Detection ) = | Harmonic Pattern Parameters 5 (Multi Time Frame Detection) |
| Use Multi Timeframe Pattern Detection                          | false  |
| Use Sound Alert from MTD                                       | true   |
| MTD Panel X coordinate   | 180  |
| MTD Panel Y coordinate   | 300  |
| MTD Panel Update Frequency                                     | 1 Minute   |
| Candle Stick Pattern Parameters=====                           | Candle Stick Pattern Parameters=====                       |
| Set false to switch off Candle Stick Pattern                   | false  |
| Amount of bars to scan   | 1000   |
| Period to detect Candlestick Patterns                          | 20   |
| Switch to show one candle pattern                              | true   |
| Switch to show two candle pattern                              | true   |
| Switch to show three candle pattern                            | true   |
| Switch to show four candle pattern                             | true   |

Figure 6. Screen capture of input setting for Multi Time Frame Detection.

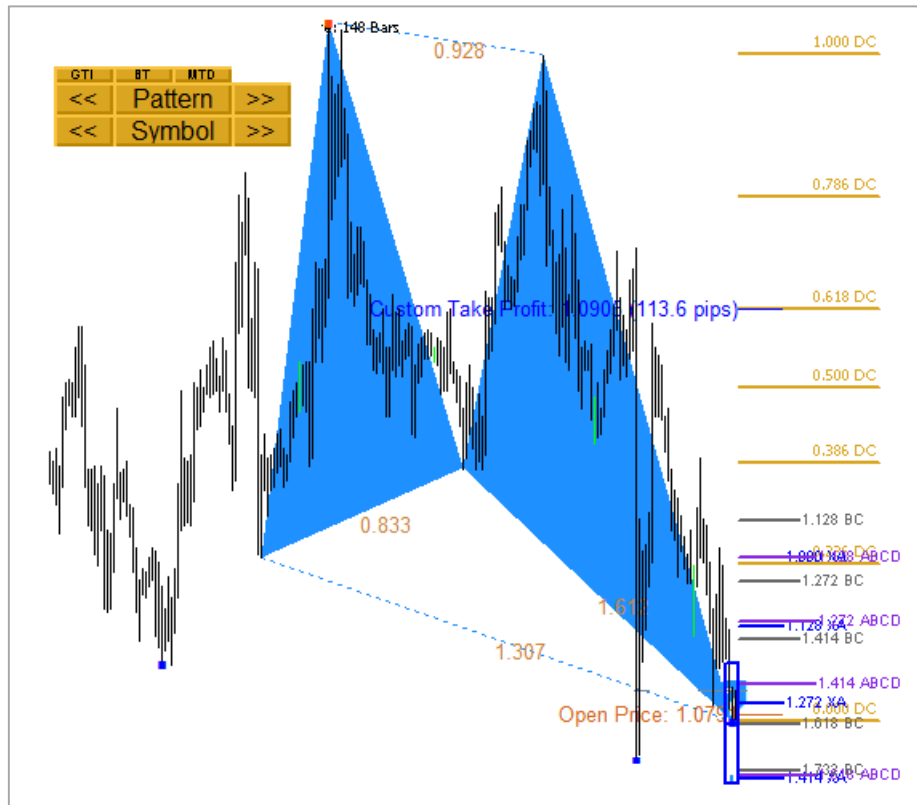


Figure 7. Screen capture of Harmonic Pattern Plus before pressing MTD button.

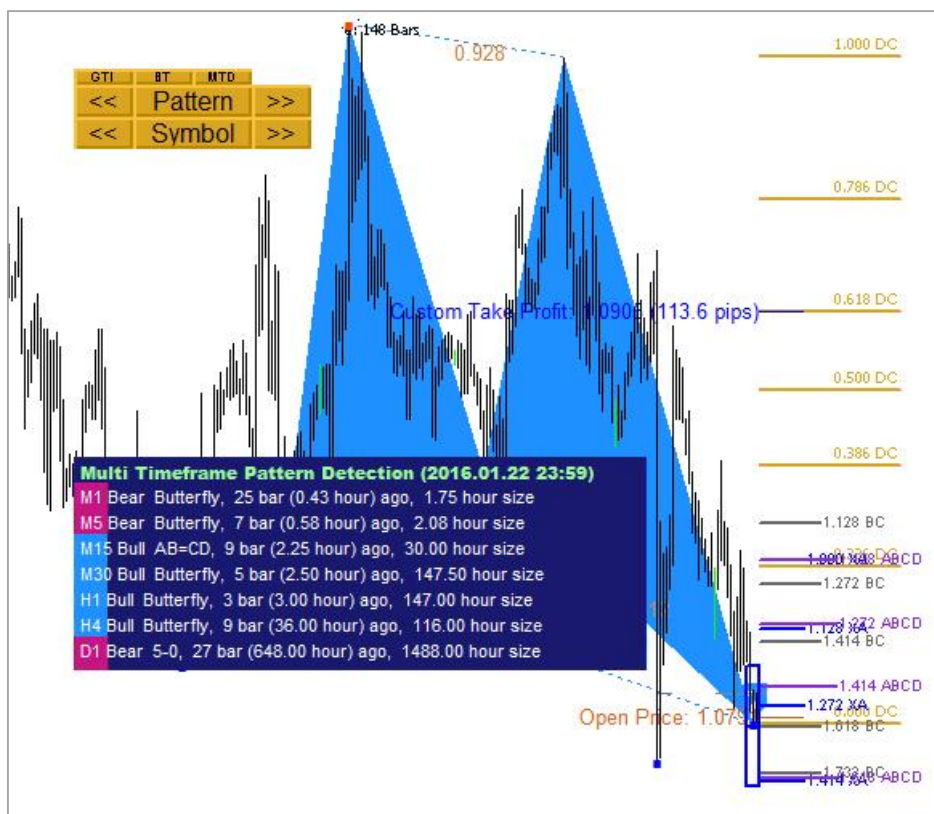


Figure 8. Screen capture of Harmonic Pattern Plus after pressing MTD button.