

Chart Pattern Recognition Module 5

User Guide

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Getting Started

CPRM5 integrates some of the best Chart Pattern Technology ever created by Nirvana System's into one great module. This user guide will review the implementation, theory, and usage of the Chart Pattern Recognition Module™. In addition to the Chart Pattern Recognition technology, this module includes Trading Systems that generate signals based on Chart Patterns which is also covered in later chapters of this user guide.

In this chapter, you will learn how to install and begin using the Chart Pattern Recognition Module.

The Chart Pattern Recognition Module represents a significant advance for chartists and traders alike. Chart Patterns have been used with great success for many years. However, up to now, the effectiveness and identification of these patterns has been subjective and mostly confined to textbooks and seminars. With the Chart Pattern Recognition Module, you can instantly see patterns identified in your data across an entire chart.

You can also instantly determine whether or not a confirming pattern occurs with a given signal in the Focus List, thanks to special columns that illuminate the patterns as they occur at the right edge of the chart—where all of us trade the market. Finally, customer education on patterns is facilitated with the Pattern Tutor™, which is capable of pointing out *all* examples of a given pattern in your data.

Installing the Chart Pattern Recognition Module

Follow these instructions to install the Chart Pattern Recognition Module:

1. Go to:
<http://www.omnitrader.com/currentclients/downloads/item.asp?Prodcode=3809>.
2. Enter your Nirvana ID and password, click the "Login" button
3. Click the "Install" button on the top right.
4. Follow the instructions that appear in the installation wizard dialog boxes.

Registering the Chart Pattern Recognition Module

Before you can use the CPRM, you must register it.

1. Click **Help»Registration**.
2. Enter the CPRM5 CD key provided on your invoice or click **Get My CD Keys** and your registration file will be updated automatically with your new key.

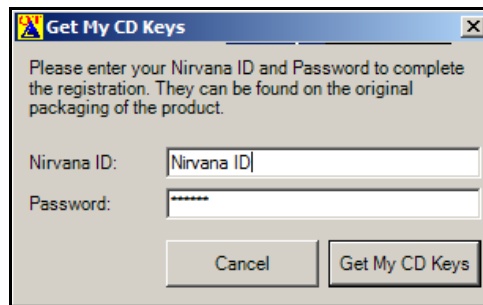


Figure 1-1. Product Registration Dialog Box

Pattern Settings

Activating the Patterns Toolbar

To activate the Patterns Toolbar, complete the following steps:

1. Select **View»Toolbars** in OmniTrader. In VisualTrader click **View»Patterns Feature**.
2. In the Toolbars dialog box, enable the **Patterns** checkbox.

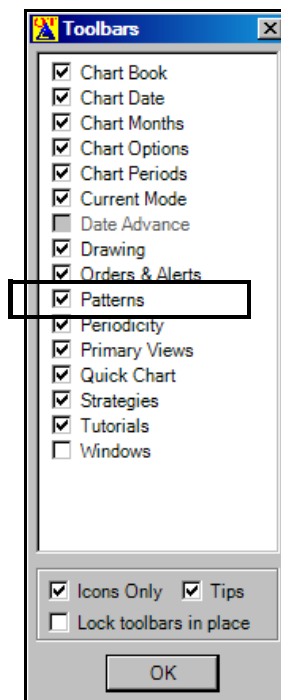


Figure 2-1. Toolbars Dialog Box with Patterns Toolbar Activated

3. Click **OK** to accept your changes and add the Patterns Toolbar to the OmniTrader interface.



Figure 2-2. Patterns Toolbar

As with other OmniTrader toolbars and buttons, you can drag the Patterns Toolbar to the edge of the OmniTrader interface to dock it.

Understanding Pattern Strength

The buttons on the Patterns toolbar set the strength of the patterns shown in the charts. A strength of 1 is the weakest, and a strength of 5 is the strongest.



Figure 2-3. All Pattern Strengths Activated

The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern. Each pattern is subdivided into groups, so that strength varies within each pattern. For example, Consolidations are divided into the various types of Consolidations, such as Ascending Triangles, Rectangles, and Flags.

You should experiment with the strength rating buttons to determine the strength that best suits your particular trading style. Using a setting of 1 displays *all* patterns detected by the module, while a setting of 5 displays only the most historically profitable patterns.



Figure 2-4. Only Strength 5 Patterns Activated

The Patterns Toolbar has no bearing on which patterns are analyzed. It only specifies the strength cutoff for displaying the patterns. You can change the settings any time without incurring a processing penalty.

The following examples illustrate the effect of varying the Strength rating. Figure 2-5 displays all tags and all patterns with strengths of 3 and above.



Figure 2-5. Strengths of 3 and Above Activated

Figure 2-6 displays all tags and all patterns with strengths of 5.



Figure 2-6. Strength of 5 Only

Again, you will want to experiment with the strength cutoff to find the best value to use for your particular trading style.

Editing Pattern Settings

Click the **Patterns** button on the left side of the Patterns Toolbar to launch the Edit Pattern Settings dialog box.

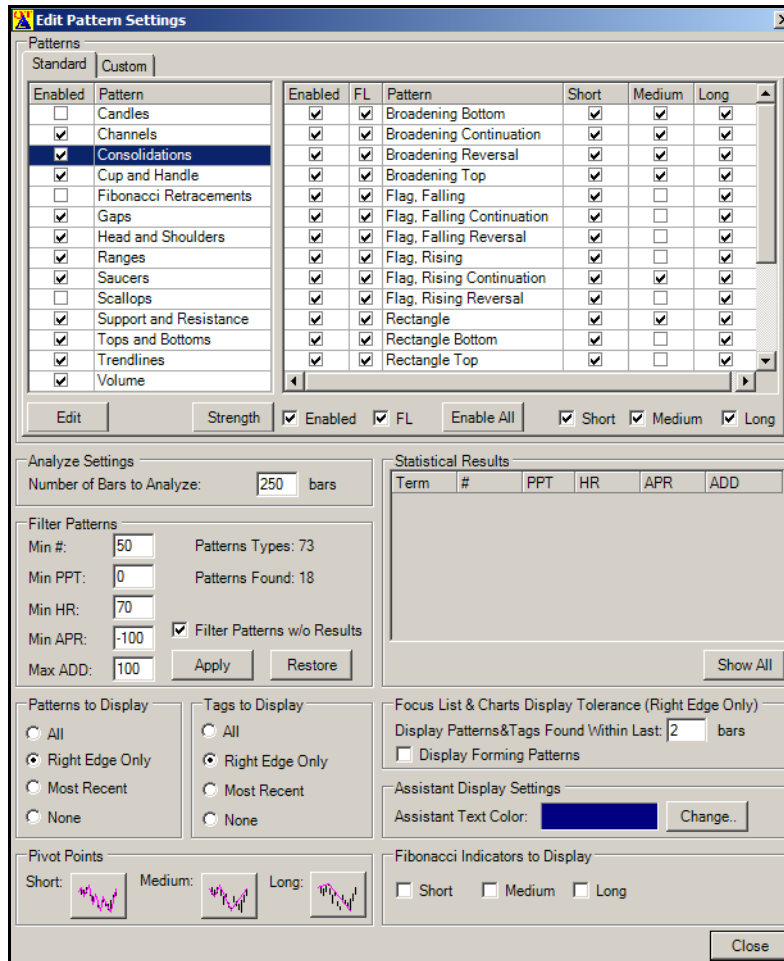


Figure 2-7. Edit Pattern Settings Dialog Box

The following sections explain the functionality of the controls in the Edit Pattern Settings dialog box.

Standard Patterns

The Standard Patterns tab allows you to define which patterns are to be analyzed. By default, all patterns are turned off. To enable pattern analysis, select a pattern classification to view the available pattern types.

You will need to enable the specific pattern types you would like plotted for each pattern classification. Each pattern classification has its' own sub-set of pattern types. The following example shows the pattern classification 'Candles' enabled and then available pattern types for that classification are shown to the right.

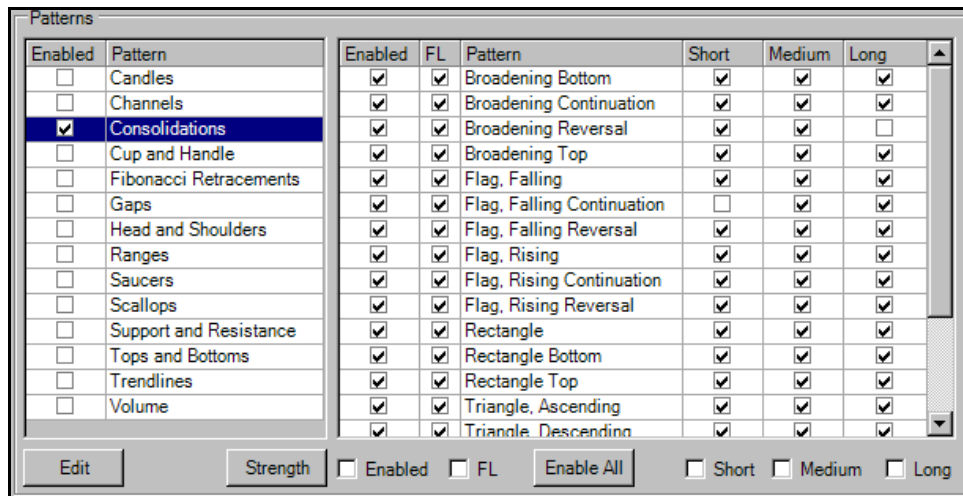


Figure 2-8. Consolidation Pattern Classification showing the Available Pattern Types

All pattern types for a classification or multiple pattern types can be enabled by clicking and dragging over the pattern types and using the Enabled button.

When you run the To Do List, the Chart Pattern Recognition Module searches on all patterns that are enabled. You can add columns to the Focus List to help you see the patterns form *with* signals in the Focus List. For more information on this feature, refer to Chapter 4, [Viewing Patterns in the Focus List](#).

Displaying Patterns in the Focus List

The FL column specifies whether patterns are shown in the Focus List or not. This is useful if one pattern tends to dominate the list, such as Candles. Deselecting the FL option prevents the pattern from showing up in the Focus List.



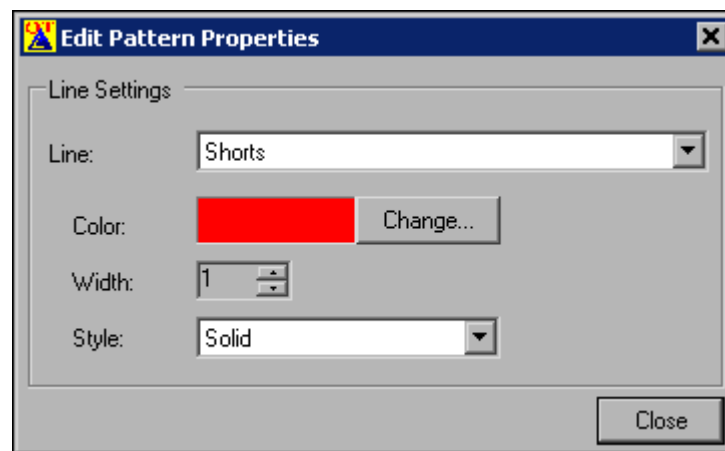
Note Deselecting the FL option has no effect on whether a pattern appears in a chart. If a pattern is enabled, it will still appear in the chart.

Specifying Terms for Pattern Types

Each pattern classification, Candles, Channels, Consolidations, Cup and Handle, Fibonacci Retracements, Gaps, Head and Shoulders, Ranges, Saucers, Scallops, Support and Resistance, Tops and Bottoms, Trendlines and Volume are broken down into specific pattern types. Pattern types are analyzed according to the following terms: Short (S), Medium (M), or Long (L). A short-term pattern occurs from 1-16 bars. A medium-term pattern falls between 17-32 bars, and a long-term pattern occurs at 33 bars or greater. Click in the Term column to specify which terms you want to display.

Editing Line Properties

You can edit the line settings by selecting a pattern from the list and clicking the Edit button. You can change the color, width, and style of each line.



Depending on the pattern you have selected, you may see the following options:

- **Shorts**—Displays bearish patterns on the chart.
- **Longs**—Displays bullish patterns on the chart.
- **Breaks Down**—Displays patterns in the chart where the security is breaking to the downside.
- **Breaks Up**—Displays patterns in the chart where the security is breaking to the upside.
- **Anchor**—Displays a pivot point of reference used for pattern recognition.
- **Forming**—Displays potential patterns that are forming at the right edge of the chart.
- **Band**—Displays a band of deviation that is used for pattern recognition.
- **Short Extension**—Extends the pattern line to the right edge of the chart for a bearish pattern.
- **Long Extension**—Extends the pattern line to the right edge of the chart for a bullish pattern.
- **Neck Line**—Displays the support/resistance level for the head and shoulder pattern.
- **Peak Line**—Displays the support/resistance level across the peaks of double and triple tops and bottoms.

Modifying the Strength Settings

The Pattern Recognition Module assigns a strength value to each pattern. This value is based on the pattern's historical performance. The Chart Pattern Recognition Module calculates typical measurements for each pattern and groups these with similar characteristics. Statistics about the patterns are recorded in a database and used to assign strength values.

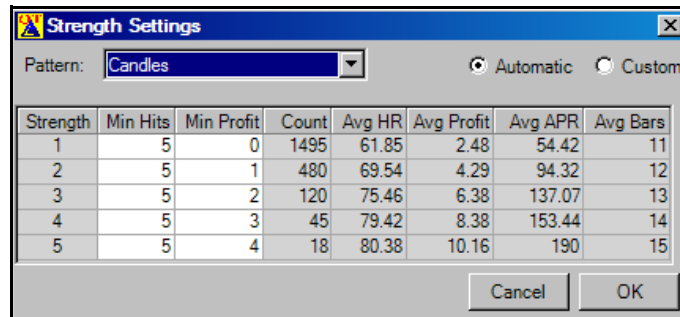


Figure 2-9. Strength Settings Dialog Box

When you select a pattern from the Pattern drop-down menu, you can choose to have the values determined automatically or you can customize them to meet your needs.

- **Automatic**—Automatically sets values for Min Hits and Min Profit for the selected pattern and displays the results in the Strength Settings dialog box. The strength settings influence the patterns you see in your charts.
- **Custom**—Allows you to edit the minimum number of hits and minimum average profit that define each strength value for the pattern. When you edit the Min Hits and Min Profit columns, the statistical results for count, average hit rate, etc. are updated.

The statistics for the selected pattern are displayed in the columns below the Pattern drop-down menu. The Strength Settings dialog box contains the following columns.

- **Strength**—Displays the strength rating for the selected pattern. For more information, refer to the *Understanding Pattern Strength* section in this chapter.
- **Min Hits**—Specifies the minimum number of times the selected pattern occurred in history. This field is editable if you have chosen the Custom option.
- **Min Profit**—Specifies the minimum profit per trade required for each pattern and strength value. This field is editable if you have chosen the Custom option.
- **Count**—Displays the total number of times the selected pattern occurred at the specified strength or at a higher strength.
- **Avg HR**—Displays the average hit rate (percentage of winning trades) for the selected pattern and strength value.
- **Avg Profit**—Displays the average profit per trade for the selected pattern and strength value.

- **Avg APR**—Displays the average annualized percentage rate for the selected pattern and strength value.
- **Avg Bars**—Displays the average number of bars between pivot points for the selected pattern and strength value.



Note You can only edit the Min Hits column and the Min Profit column when the Custom option is enabled. All other columns in the Strength Settings dialog box are automatically populated with statistics about the pattern's historical performance.

Custom Patterns

CPRM5 provides the ability to create your own custom patterns. When a custom pattern is added and enabled, it will be analyzed along with any other patterns that are enabled in the module.

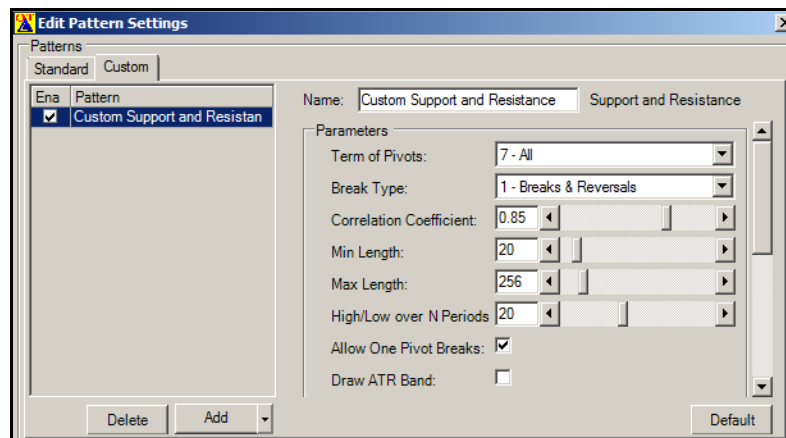


Figure 2-10. Custom Patterns Window Showing Consolidation Settings

To create a custom pattern:

1. Click the Custom tab in the Edit Pattern Settings window.
2. Click the Add button and select the pattern type from the list.
3. The pattern type will appear in the list above.

4. Click to enable the new pattern and the pattern name and parameters for that pattern will display.
5. Make any necessary adjustments to the custom pattern name, parameters and line settings.

The parameter options for custom patterns match the parameters for the CPS3 systems. For more information on the specific parameters, please refer to [Chart Pattern Systems Parameters](#) in chapter 6.

Analyze Settings

The Number of Bars to Analyze field is used to specify how many bars of historical data to analyze for each selected sub-pattern for every symbol in the list. For example, a setting of 250 in an end of day profile using daily bars would look at one year's worth of historical data for every symbol in the list for each of the sub-patterns that is enabled.

Filter Patterns

Specify the minimum statistics required for patterns to be displayed. Statistics are calculated in percentages. For more information about this feature see [Filtering Pattern Results](#) section. A total number of patterns and pattern types is also displayed in this section.

Filter Patterns	
Min #:	4
Min PPT:	2
Min HR:	50
Min APR:	0
Max ADD:	100
Patterns Types:	266
Patterns Found:	32447
<input type="checkbox"/>	Filter Patterns w/o Results
<input type="button" value="Apply"/> <input type="button" value="Restore"/>	

Figure 2-11. Pattern Filtering Options

- **Min#**—Specify the minimum number patterns that must have occurred during the analysis period.
- **Min PPT**—Specify the minimum average profit per trade for each pattern.
- **Min HR**—Specify the minimum average hit rate for each pattern.

- **Min APR**—Specify the minimum average annual percentage rate for each pattern.
- **Max ADD**—Specify the maximum average drawdown for each pattern.
- **Filter patterns without Results**—Enabling this option will remove the enabled check from any patterns that are not found over the analysis period. For example, if no channels are found, there is no criteria to filter, enable this option so it will not be considered on future runs.
- **Apply**—Activates the filter according to the settings that are input. Patterns not meeting the minimum criteria will be deselected in the list.
- **Restore**—Removes the filter settings and reenables the patterns that were deselected when the filter was applied.

Statistical Results

View the results for each enabled sub-pattern by clicking on the pattern in the list above. These results will display for each enabled pattern and will instantly update when Filter Pattern criteria is applied.



Note The focus list, charts, statistical results, & patterns report will not reflect the filter until the analysis is rerun.

Term	#	PPT	HR	APR	ADD
All	69	2.53	73.91	95.77	1.6
Short	68	2.55	73.53	94.81	1.62
Medium	1	0.62	100	161.2	0.28

Report

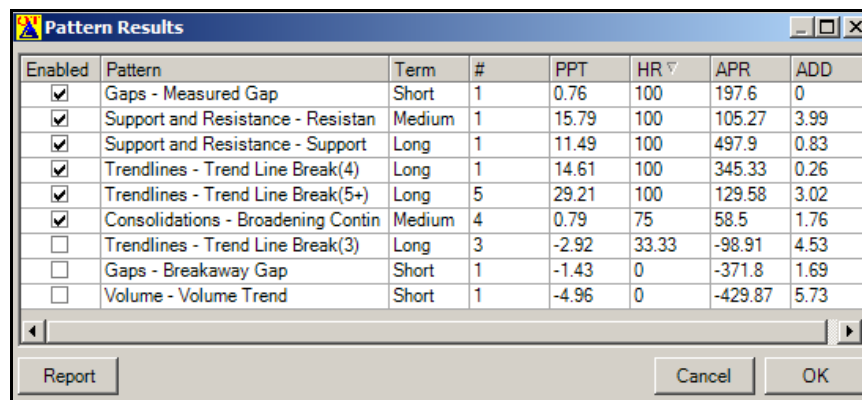
Figure 2-12. Statistics for Patterns

For more information on this feature see [Statistical Results](#) in Chapter 4.

- **Term**—Displays Short, Medium, Long or All.
- **#**—Displays the number of sub-patterns found.

- **PPT**—Displays the average profit per trade of the patterns found.
- **HR**—Displays the average hit rate of all patterns found.
- **APR**—Displays the average annual percent rate for all patterns of the selected type and term.
- **ADD**—Displays the average drawdown for all the patterns of the selected type and term.

Show All—The Show All button will display the Pattern Results window which provides a sortable list of all of the patterns that passed the filter criteria. This list can be sorted and sub-patterns can be disabled from this results window.



Enabled	Pattern	Term	#	PPT	HR	APR	ADD
<input checked="" type="checkbox"/>	Gaps - Measured Gap	Short	1	0.76	100	197.6	0
<input checked="" type="checkbox"/>	Support and Resistance - Resistan	Medium	1	15.79	100	105.27	3.99
<input checked="" type="checkbox"/>	Support and Resistance - Support	Long	1	11.49	100	497.9	0.83
<input checked="" type="checkbox"/>	Trendlines - Trend Line Break(4)	Long	1	14.61	100	345.33	0.26
<input checked="" type="checkbox"/>	Trendlines - Trend Line Break(5+)	Long	5	29.21	100	129.58	3.02
<input checked="" type="checkbox"/>	Consolidations - Broadening Contin	Medium	4	0.79	75	58.5	1.76
<input type="checkbox"/>	Trendlines - Trend Line Break(3)	Long	3	-2.92	33.33	-98.91	4.53
<input type="checkbox"/>	Gaps - Breakaway Gap	Short	1	-1.43	0	-371.8	1.69
<input type="checkbox"/>	Volume - Volume Trend	Short	1	-4.96	0	-429.87	5.73

Figure 2-13. Pattern Results Window

Report—The report button will display a comprehensive list of all selected sub-patterns along with their statistical results.

Specifying Patterns to Display

The Patterns to Display section specifies which patterns to display in the charts.

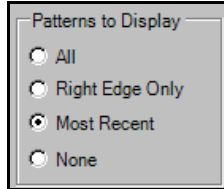


Figure 2-14. Patterns To Display Settings

- **All**—Displays all patterns in the entire chart for the chart period displayed. Patterns are shown exactly as they would have been drawn on the bar where the pattern was found.
- **Right Edge Only**—Displays patterns relative to the right edge of the chart. With this option, you must also specify the number of bars for which you want to display patterns. For more information, refer to the [Specifying the Right Edge Display Tolerance](#) section in this chapter.
- **Most Recent**—Displays only the most recent *visible* pattern of each enabled pattern type. For example, the Chart Pattern Recognition Module will display the most recent Consolidation, the most recent Trendlines, the most recent Fibonacci Retracements, and so on. This is probably the most useful setting for trading and is the default.
- **None**—Disables the display of all patterns.

Specifying Tags to Display

Patterns are indicated by *tags* in the chart. Bullish patterns are indicated with a green tag below the chart, and bearish patterns are indicated by a red tag above the chart.

The tag shows the bar at which the pattern was confirmed and where it is most likely to be tradeable.

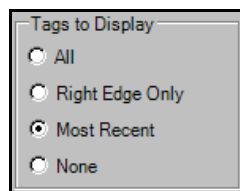


Figure 2-15. Tag to Display Settings

- **All**—Displays all tags in the entire chart for the chart period displayed. Tags are shown at the confirmation point for the pattern, which will either be a break, bounce, or continuation confirm point, depending on the pattern.
- **Right Edge Only**—Displays tags relative to the right edge of the chart. With this option, you must also specify the number of bars for which you want to display patterns. For more information, refer to the [Specifying the Right Edge Display Tolerance](#) section in this chapter.
- **Most Recent**—Displays only the most recent *visible* pattern tag of each enabled pattern type. For example, the Chart Pattern Recognition Module will display the most recent Consolidations, the most recent Trendlines, the most recent Fibonacci Retracements, and so on. This is probably the most useful setting for trading and is the default.
- **None**—Disables the display of all tags.

Specifying the Right Edge Display Tolerance

When you select the Right Edge Only option for patterns or tags, you must also specify the number of bars (tolerance) you want to display relative to the right edge of the chart. The default value is 5 bars. For example, if you set the Number of Bars option to 10, then the Chart Pattern Recognition Module will display all patterns within 10 bars of the right edge.

The Display Forming Patterns option displays patterns that are beginning to form at the right edge of the chart.

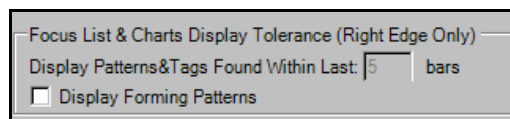


Figure 2-16. Right Edge Settings

Specifying the Assistant Display Settings

The Assistant Display Settings option determines the color of the tag text. When you mouse over a tag in a chart, the Chart Pattern Recognition Module displays the name of the pattern in the color you specify.

Displaying Pivot Points

A pivot point is defined as a place on the price bar where the security changed price-direction. The Chart Pattern Recognition Module attempts to find pivot points that reinforce the short, medium, and long-terms used in OmniTrader. You can display short, medium, or long-term pivot points in your charts. The selection you make in the pivot Points to Display section applies to all charts.



Figure 2-17. Pivot Point Display

Displaying Fibonacci Retracements

Fibonacci Retracements indicate reversal points on a price chart using ratios computed from Fibonacci numbers. When you enable this feature, the Chart Pattern Recognition module uses short, medium, and long-term pivot points to plot the 38%, 50%, and 62% retracements on the right side of the chart.



Figure 2-18. Right Edge Fibonacci Tools Displayed

Tag & Pattern Display Examples

The following examples illustrate the benefits of each choice for tags and patterns display. Figure 2-16 shows only the most recent tags and patterns. In this chart, we see a Fibonacci Retracement, a Candle Pattern, and a Trend Line Break.

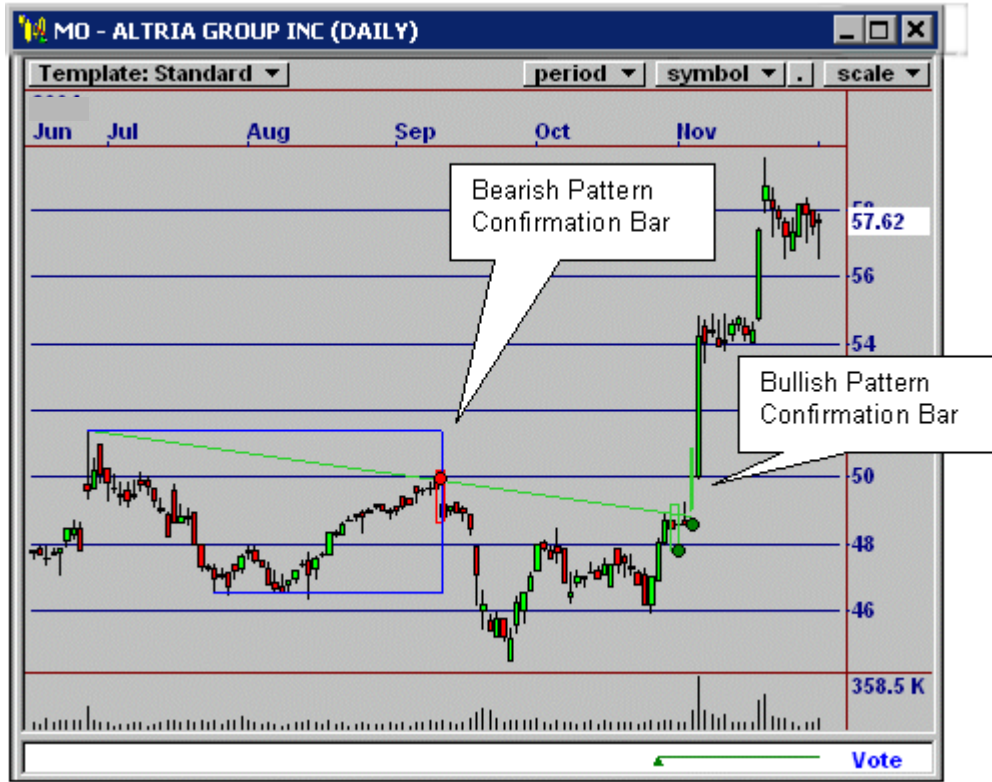


Figure 2-19. Most Recent Tags and Most Recent Patterns Displayed

In Figure 2-17, *all* tags are shown. Note that, due to the abundance of Candle Patterns, there are a large number of (red) dots above the chart. In this example, the strength rating was set to 1 so all patterns are shown.



Figure 2-20. All Tags and Most Recent Patterns Displayed

Figure 2-18 shows *all* tags and *all* patterns. This is useful for finding patterns in charts. For example, you could turn off all patterns except for Consolidations and look through charts to see only Consolidation pattern types.

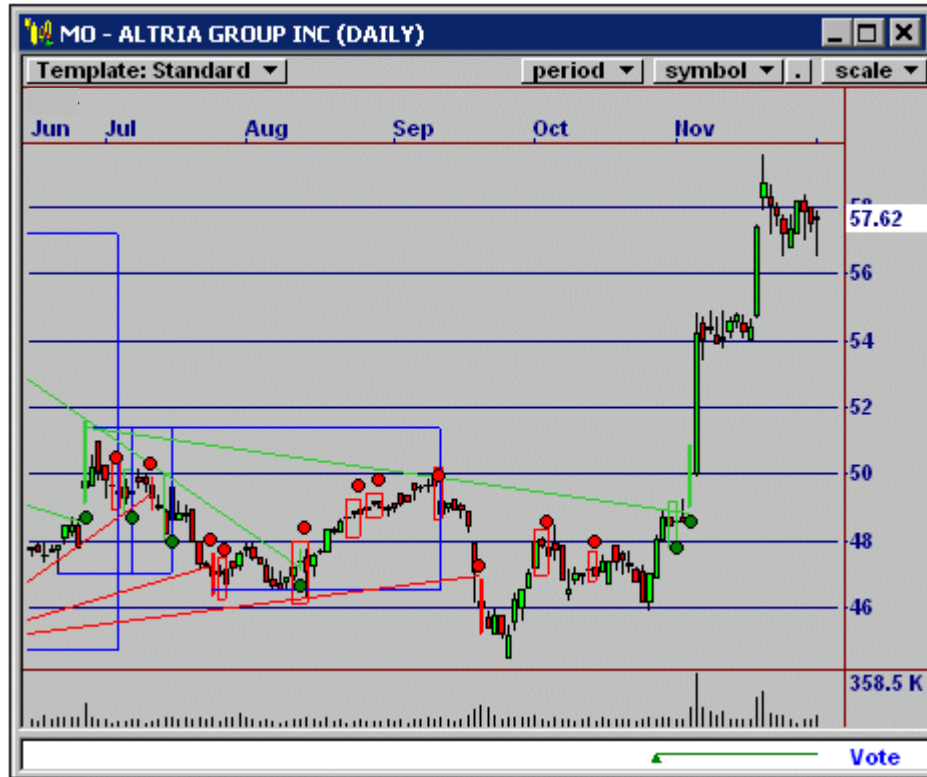


Figure 2-21. All Tags and All Patterns Displayed

The Chart Pattern Recognition Module uses the Pattern Tutor and the Focus List to help you identify patterns. Each of these tools is designed to make identifying patterns in a chart quick and easy.

Chart Patterns Recognized

The Chart Pattern Recognition Module identifies more than 90 pattern types that fit into fourteen different pattern classifications. The Pattern Classifications are Candles, Channels, Consolidations, Cup and Handle, Fibonacci Retracements, Gaps, Head and Shoulders, Ranges, Saucers, Scallops, Support and Resistance, Trendlines, Tops and Bottoms and Volume. We chose which patterns to include based on classic chart significance, as well as historical performance.

Candle Pattern Types

Candle Patterns are 1-5 bar patterns formed by the relationship between the open/close, and high/low of the sequential bars. These patterns were first used by Japanese chartists, and later popularized by Steve Nison in the West.

Most analysts who have studied candle patterns assert that they are helpful in determining supply and demand in a freely-traded market. However, there is also universal agreement that candle patterns cannot be used in isolation, and should be "confirmed" with other techniques. We typically want to see a candle pattern occur with a strong OmniTrader Signal, and preferably with another pattern, such as a Gap or Consolidation break.

The Chart Pattern Recognition Module recognizes the following Candle patterns. The abbreviation for a Candle pattern is CAN.

- Belt Hold
- Counterattack
- Dark Cloud Cover
- Doji Star
- Engulfing Lines
- Evening Star
- Hammer
- Piercing Lines
- Shooting Star
- Side By Side White Lines
- Stick Sandwich
- Tasuki
- Three Black Crows
- Three Inside Up

- Hanging Man
- Harami
- Inverted Hammer
- Kicking
- Morning Star
- Three Inside Down
- Three Methods
- Three Outside Up
- Three Outside Down
- Three White Soldiers

Channel Pattern Types

A Channel is a trading range that is sloping upward or downward, with parallel trend lines above and below price action. This pattern allows you to trade the swings within the channel, or a breakout from the channel.

The Chart Pattern Recognition module recognizes channels. The abbreviation for a Channels is CHN.

- Channel

Consolidation Pattern Types

Consolidations are essentially tight trading ranges, relative to a prior move in the chart. There will always be an "anchor", or left point in the chart from which the consolidation came. Our consolidation analysis attempts to find a valid anchor for any consolidation before identifying it.

The Chart Pattern Recognition Module recognizes the following Consolidations. The abbreviation for a Consolidation is CNS.

- Broadening Bottom
- Broadening Continuation
- Broadening Reversal
- Broadening Top
- Flag, Falling
- Flag, Falling Continuation
- Flag, Falling Reversal
- Rectangle
- Rectangle Bottom
- Rectangle Top
- Triangle, Ascending
- Triangle, Descending
- Triangle, Symmetrical
- Wedge, Falling

- Flag, Rising
- Flag, Rising Continuation
- Flag, Rising Reversal
- Wedge, Falling Continuation
- Wedge, Rising
- Wedge, Rising Continuation

Cup and Handle Pattern Types

A Cup and Handle formation is a pattern that usually indicates a significant reversal. This pattern is identified by its rounded bottom (the cup) and a higher low (the handle). Once the handle has formed, a continuation is usually seen

The Chart Pattern Recognition Module recognizes Cup and Handle patterns. The abbreviation for Cup and Hand is CUP.

- Cup and Handle

Fibonacci Retracement Pattern Types

The term "Fibonacci Retracement" comes from the Fibonacci number sequence, including the values 3/8, 4/8, and 5/8. Each of these retracement amounts (38%, 50%, and 62%) is considered a Fibonacci Retracement.

The Chart Pattern Recognition Module recognizes the following Fibonacci Retracements. The abbreviation for a Fibonacci Retracement is FIB.

- Fibonacci Retracement (62%)
- Fibonacci Retracement (38%)
- Fibonacci Retracement (50%)

Gap Pattern Types

Gaps are places in the chart where sudden demand (to buy or sell) has caused price to jump dramatically at the Open, leaving a hole or gap from the prior Close to the Open. Sudden changes in supply/demand are highly tradable events. In order for a gap to be significant, it must be reasonably "rare" in the chart - larger than 90% of the other price gaps from Close to Open.

The Chart Pattern Recognition Module recognizes the following Gaps. The abbreviation for a Gap is GAP.

- Breakaway Gap
- Measured Gap
- Exhaustion Gap
- Common Gap

Head and Shoulder Pattern Types

Head and Shoulders is a pattern that usually identifies major tops and bottoms. This pattern has three clearly-defined peaks (two shoulders and a head) and a support line that can be either horizontal or sloped (called the neck line). A break through the neck line signals a continuation in the direction of the break.

The Chart Pattern Recognition Module recognizes Head and Shoulders and Inverted Head and Shoulders Patterns. The abbreviation for Head and Shoulders is HS.

- Head and Shoulders

Range Pattern Types

Ranges are trading ranges that have horizontal support and resistance lines that contain price action. You can trade the swings within the range, or the breakout from the range.

The Chart Pattern Recognition Module recognizes the following Range Patterns. The abbreviation for Ranges is RNG.

- Range Breakout

- Range Reversal

Saucer Pattern Types

A Saucer Pattern is a smooth transition from down to up or vice versa. The curvature of the pattern must be obvious, which will entice the market to participate in the pattern. A "handle" pattern often follows the saucer, and should be traded as a consolidation.

The Pattern Recognition Module recognizes the following Saucer patterns. The abbreviation for a Saucer pattern is SAU.

- Rounded Top
- Saucer

Scallop Pattern Types

A Scallop is similar to a saucer, but rises higher on the right edge than the preceding top at the beginning of the pattern. This formation is bullish in an uptrend, and bearish in a downtrend.

The Chart Pattern Recognition Module recognizes the following Scallop Patterns. The abbreviation for Scallops is SCL.

- Scallop, Ascending
- Scallop, Descending

Support & Resistance Types

A Support or Resistance level is formed by 2 or more horizontal points in the chart. Support represents a point through which selling has not been able to drive price through to lower levels. Regardless of whether price penetrates a Support or reverses off it, we can trade the resulting movement away from the line.

The Pattern Recognition Module recognizes the following Support and Resistance patterns. The abbreviation for Support and Resistance patterns is SR.

- Support Break
- Resistance Break

- Support Break (2)
- Support Break (3)
- Support Break (4)
- Support Break (5+)
- Support Reversal
- Support Reversal (2)
- Support Reversal (3)
- Support Reversal (4)
- Support Reversal (5+)
- Resistance Break (2)
- Resistance Break (3)
- Resistance Break (4)
- Resistance Break (5+)
- Resistance Reversal
- Resistance Reversal (2)
- Resistance Reversal (3)
- Resistance Reversal (4)
- Resistance Reversal (5+)

Tops and Bottoms Pattern Types

Tops and Bottoms are clearly-defined support and resistance levels with two or three touches. Double Tops and Bottoms resemble the letters M and W, whereas Triple Tops and Bottoms include three peaks or valleys. These patterns usually identify signal reversals.

The Pattern Recognition Module recognizes the following Tops and Bottoms patterns. The abbreviation for Tops and Bottoms patterns is TB.

- Double Bottom
- Triple Bottom
- Double Top
- Triple Top

Trendline Pattern Types

A Trend Line is a line drawn across 2 or more sloped points in the chart. Typically, the more touches a trend line has, the more valid it tends to be. We have two essential patterns from Trend Lines - Breaks and Reversals.

The Pattern Recognition Module recognizes the following Trendlines. The abbreviation for a Trendline is TLN.

- Trend Line Break (2)
- Trend Line Break (3)
- Trend Line Reversal (2)
- Trend Line Reversal (3)

- Trend Line Break (4)
- Trend Line Break (5+)
- Trend Line Reversal (4)
- Trend Line Reversal (5+)

Volume Pattern Types

We identify two primary volume patterns, Volume Climax and Volume Trend. Both patterns are indicated by an increase and decrease in volume, relative to prior zones in the chart. The Volume Climax pattern looks for price to reverse, the Volume Trend pattern looks for price to continue in the same direction.

The Pattern Recognition Module recognizes the following Volume patterns. The abbreviation for Volume is VOL.

- Volume Climax
- Volume Trend

4

Pattern Results & Analysis

There are several ways to view the pattern analysis and results. The Focus List, Charts and Pattern Tutor and Editing Patterns Interface all offer options for reviewing this information. This chapter will discuss those options.

Viewing Patterns in the Focus List

One of the significant advances in the Chart Pattern Recognition Module is the ability to see the patterns form *with* signals in the Focus List. There are four special columns that you can add to the Focus List for patterns.

- **Pat**—Pattern Classification Acronym
- **PD**—Pattern Direction
- **PBars**—This column will display the number of bars since the most recent pattern fired.
- **Str**—Pattern Strength
- **PName**—Full Name for the Pattern

Adding the Columns

To add patterns and pattern columns to the Focus List, complete the following steps:

1. Click the wrench icon in the Focus List, as shown below.

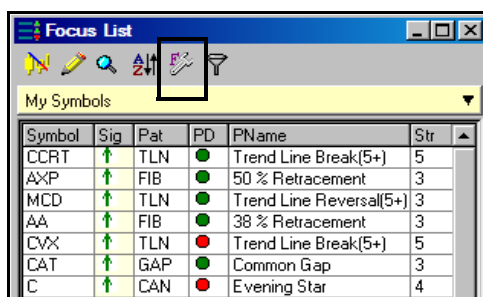


Figure 4-1. Wrench Icon in the Focus List

- Select the columns you want to add from the Profile Statistics tab of the Configure Columns dialog box and click **Add**.

You can also add and remove columns using the Add and Remove arrows. For more information on using the Configure Columns dialog box, refer to the OmniTrader Help File by selecting **Help»Contents** in OmniTrader.

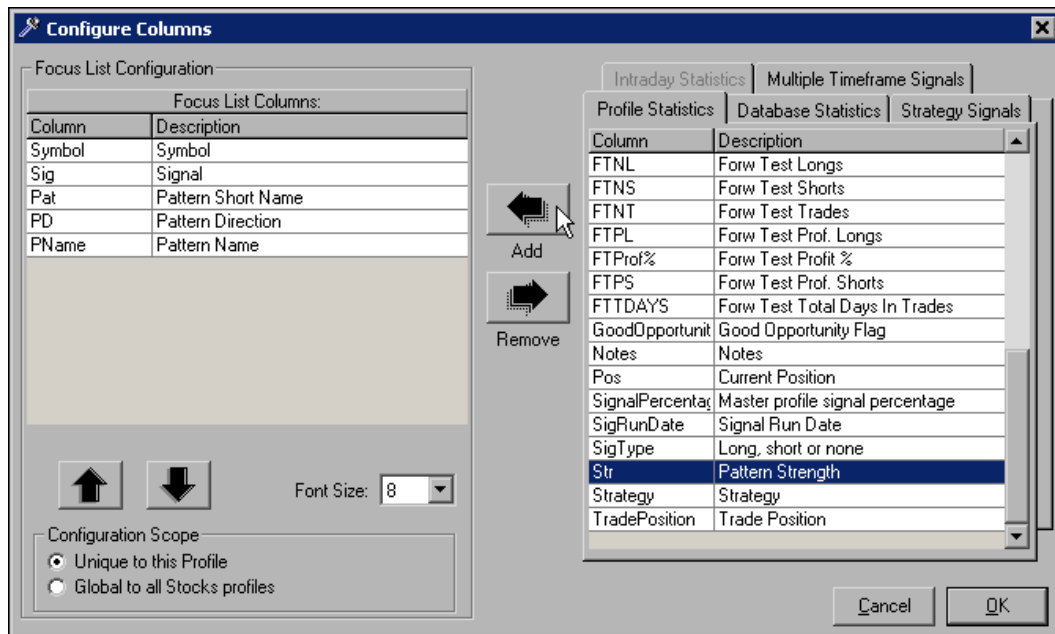


Figure 4-2. Configure Columns Dialog Box

Interpreting the Results

You must run the To Do List in order to populate the pattern columns in the Focus List. The settings in the Edit Pattern Settings dialog box determine which patterns to analyze. For more information, refer to the [Specifying Patterns to Display](#) section of Chapter 2.

Symbol	Sig	PD	Str
GE	▲	●	5
CBS	▼	●	5
HNZ	↑	●	5
TXN	↑	●	5
TWXX	↑	●	5
WB	↓	●	5
UTX	↓	●	5
MCD		●	5
LEH		●	5
GOOG			
ETR		●	5
CSCO		●	5
AAPL		●	5
CMCSA		●	5
NSM		●	5
C		●	5
BUD		●	5
BK		●	5
AES		●	5

Figure 4-3. Focus List with Pattern Columns Displayed

This illustration of the Focus List contains the PD (Pattern Direction), and Str (Strength) columns added to the Focus List.

If you run the To Do List with these settings, you will see that GE has a Long signal *and* a green TLN (Trend Line) pattern of strength 5. In this example, the pattern statistics for GE give us more reason to look at this chart than for the chart of CBS.



Figure 4-4. Chart of GE with Long Signal and Trend Line Pattern of 5 Strength

The existence of a 5 strength pattern with a signal is certainly no guarantee of success, but while developing the Chart Pattern Recognition Module, we have generally observed better opportunities presented where OmniTrader signals are confirmed with patterns. Chart Patterns give one more piece of confirming information to help you make an intelligent trading decision.

Charts

Patterns and Pattern Tags are displayed in the chart according to the selections and preferences specified in the Editing Pattern Settings dialog box. Once all selections have been made, close the pattern settings dialog box and run the analysis. When the analysis is complete, plot the charts to display the patterns and tags.



Figure 4-5. Daily Chart of HOLX Showing Two Trendlines Found by CPRM

Mouse over the pattern tags in the chart to view the pattern type. Clicking a pattern tag in the chart will load the pattern Tutor.

Pattern Tutor

The Pattern Tutor is designed to help you learn about the effectiveness of patterns. This feature is possible because all patterns are found when you run the To Do List. The pattern definitions and locations are saved to a database and can be called up later. To see the Pattern Tutor, click any tag in the chart.



Figure 4-6. Click on a tag to see the Pattern Tutor

In this example, clicking on a tag in the chart displays all Trend Line Break patterns of similar shape and strength.

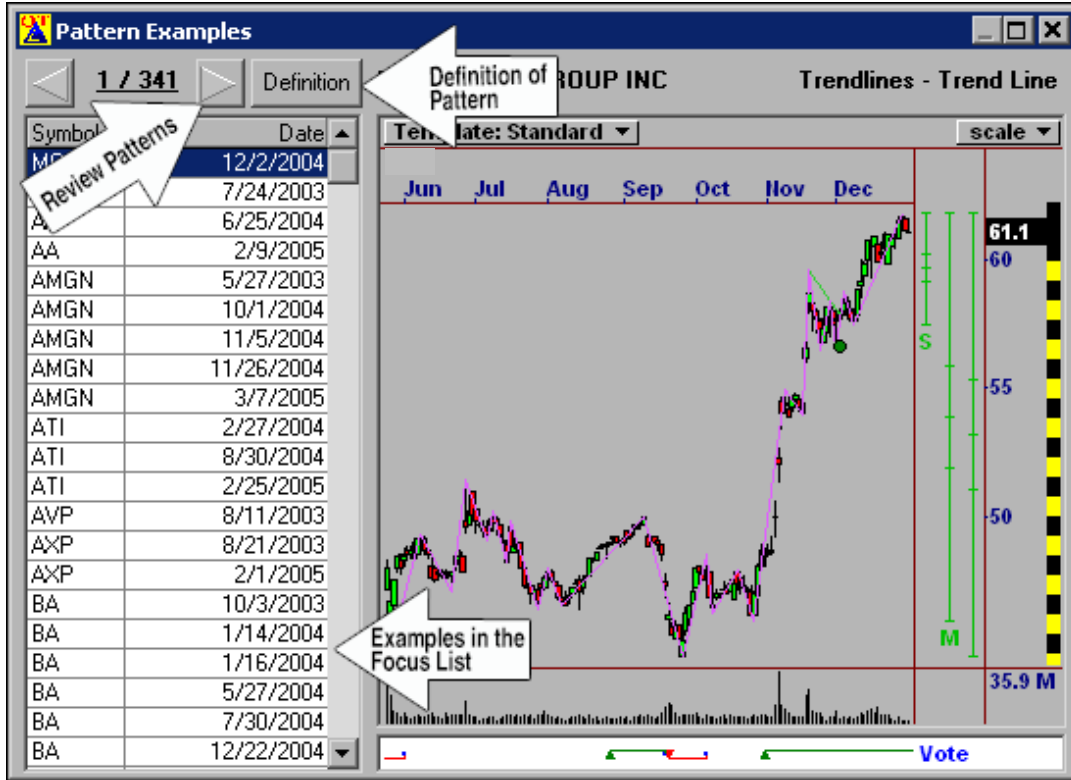


Figure 4-7. Pattern Tutor Showing All Trend Line Breaks of Similar Strength

Click the right and left arrows or press <Page Up> and <Page Down> on your keyboard to scroll through the patterns.



Note In the example shown, the Trend Line Break occurs in the center of the data range, which is why the Border Alert (yellow/black warning bar) is shown. The Border Alert appears on a chart when you are not viewing the latest price data.

Filtering Pattern Results

Filtering allows you to measure the profitability of the chart patterns in your list. After the analysis is run, pattern results can be filtered using the Filter Pattern criteria option in the Pattern Editing window.

Filter Patterns		
Min #:	<input type="text" value="4"/>	Patterns Types: 266
Min PPT:	<input type="text" value="2"/>	Patterns Found: 32447
Min HR:	<input type="text" value="50"/>	
Min APR:	<input type="text" value="0"/>	<input type="checkbox"/> Filter Patterns w/o Results
Max ADD:	<input type="text" value="100"/>	<input type="button" value="Apply"/> <input type="button" value="Restore"/>

Figure 4-8. Filter Pattern Criteria Options

The patterns filter can be applied to all of the enabled patterns by clicking the Apply button. The default settings for the pattern filters are calculated in percentages. The pattern filters are set to zero for each of the criteria except Max ADD (maximum average drawdown) which is set to 100. Keep in mind that statistics can return negative values so the default settings of zero will apply a filter if the Apply button is clicked.

Criteria can be entered for any or all fields. All patterns not meeting the filter criteria will be immediately deselected upon clicking Apply and the Patterns Types and Patterns Found calculations will be updated. You can view the results for the remaining patterns and tighten the constraints by increasing the filter criteria.



Note .The focus list and charts will not reflect the filter until the analysis is rerun. Additionally, the filter will need to be reapplied when new data is collected.

The Statistical Results, Pattern Results and Patterns Report will also be updated to reflect the patterns filter.

Click the Restore button to re-enable the selected patterns prior to applying the filter.

Statistical Results

Statistical Results are calculated using the close price of the bar the pattern was generated on to the next pivot point according to the term that is selected for the pattern. For example, when a short-term trendline break is detected, CPRM will use the close of the bar the pattern was generated on and calculate profitability based on the short-term pivot that followed it.

View Statistical Results for individual sub-patterns that have been analyzed by clicking on any enabled sub-pattern in the list. A breakdown of the statistics for each sub-pattern for all enabled timeframes will be displayed.

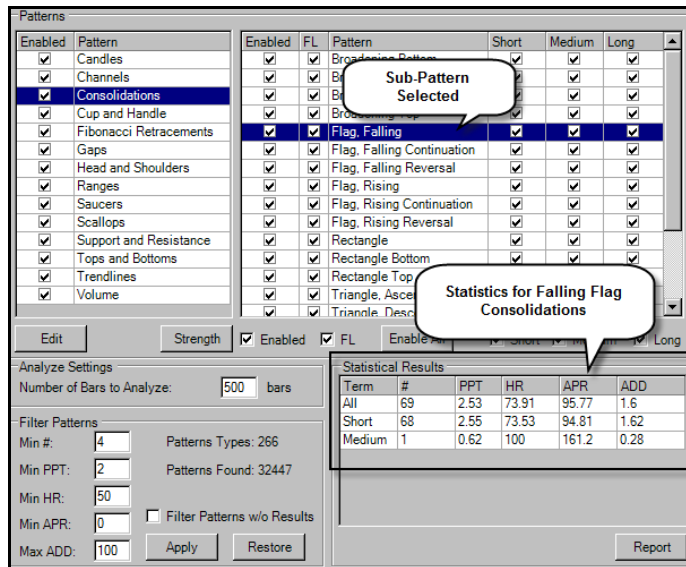


Figure 4-9. Statistical Results Displayed for Falling Flag Consolidations

To show patterns with higher profitability, tighten the constraints by editing the filter criteria. Statistical Results will be updated after the analysis has been rerun.

Pattern Results

Click the **Show All** button to review the results for the patterns. The Pattern Results window provides a sortable list that will allow you to enable or disable any patterns based on the displayed results. When a pattern is disabled in this report, it will also disable the pattern in the standard or custom patterns section.

Pattern Report

The statistics for all enabled patterns can be viewed together in the Patterns Report. Click the Report button to view a comprehensive list of all enabled pattern statistics. This report is also subject to immediate filtering when there is a filter applied.

Chart Pattern Systems and Strategies

The CPRM5 Plug-in includes patterns systems that can be used to generate signals. The Chart Pattern Systems included in this module also includes systems from earlier released versions of CPS with CPS5 systems being the most current. This Chapter also includes information on the strategies that were built for this module.

All CPS systems are labeled with CPS3 (earlier version) or CPS5 in the system name. Systems from both versions are included because they produce signals in different ways. The CPS5 versions of the systems mimic the CPRM5 patterns while the CPS3 systems provide closer control of the parameters that drive the algorithms.

There are fourteen CPS5 systems and fifteen CPS3 systems. This chapter further explains the basis of the pattern used in the systems.

After you install the CPRM5 plug-in, the systems included appear in the System and Confirm Blocks of your strategies. As with all other systems, you can use the Chart Pattern Systems to generate signals, to confirm signals in other strategies, and even to generate exits.

The CPS5 trading systems use improved algorithms that will match the patterns in your charts exactly when properly configured.

These new Chart Pattern Systems that are included in CPS5:

- CPS5 Consolidation Pattern System
- CPS5 Fibonacci Retracement Pattern System
- CPS5 Gap Pattern System
- CPS5 Saucer Pattern System
- CPS5 Support and Resistance Pattern System
- CPS5 Trendline Pattern System

- CPS5 Volume Pattern System
- CPS5 Candle Pattern System
- CPS5 Scallop Pattern System
- CPS5 Channel Pattern System
- CPS5 Range Pattern System
- CPS5 Head and Shoulders Pattern System
- CPS5 Cup and Handle Pattern System
- CPS5 Tops and Bottoms Pattern System

Candle Pattern Systems

Candle Patterns are used in technical analysis to identify short-term imbalances between buyers and sellers. Candle Patterns are especially useful for confirming other patterns.

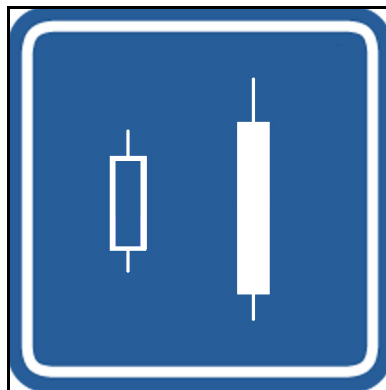


Figure 5-1. Bullish Engulfing Lines Candle Pattern Example

There are 24 sub-patterns available within the CPS5 system. When editing the system in a trading strategy you may refer to the sub-patterns as follows:

- **0** — All Candles
- **1** — Hammer
- **2** — Hanging Man
- **3** — Belt Hold

- **4** — Piercing Lines
- **5** — Dark Cloud Cover
- **6** — Engulfing Lines
- **7** — Harami
- **8** — Inverted Hammer
- **9** — Shooting Star
- **10** — Counterattack
- **11** — Kicking
- **12** — Doji Star
- **13** — Morning Star
- **14** — Evening Star
- **15** — Three Inside Up
- **16** — Three Outside Up
- **18** — Three Outside Down
- **19** — Three White Soldiers
- **20** — Three Black Crows
- **21** — Stick Sandwich
- **22** — Side by Side White Lines
- **23** — Tasuki
- **24** — Three Methods

Channel Pattern Systems

A Channel is a trading range that is sloping upward or downward, with parallel trend lines above and below price action. This pattern allows you to trade the swings within the channel, or a breakout from the channel.



Figure 5-2. Channel Pattern Example.

The CPS5 Channel systems contains no sub-patterns.

Consolidation Pattern Systems

A consolidation occurs when buyers and sellers are very closely matched in numbers, causing the security's price to move within a well-defined trading range. The point where the price moves outside the trading range that forms the consolidation is called a breakout. A breakout can be to the upside or to the downside.



Figure 5-3. Consolidation Pattern Example

The CPS5 Consolidation System contains 20 sub-patterns. When editing the system in a trading strategy you may refer to the sub-patterns as follows:

- **Type of Pattern**
 - **0** — All consolidations
 - **1** — Rectangle
 - **2** — Rectangle Top
 - **3** — Rectangle Bottom
 - **4** — Triangle, Ascending
 - **5** — Triangle, Descending
 - **6** — Triangle, Symmetrical
 - **7** — Wedge, Rising
 - **8** — Wedge, Falling
 - **9** — Wedge, Rising Continuation
 - **10** — Wedge, Falling Continuation
 - **11** — Broadening Top
 - **12** — Broadening Bottom
 - **13** — Broadening Continuation
 - **14** — Broadening Reversal
 - **15** — Flag, Rising
 - **16** — Flag, Falling
 - **17** — Flag, Rising Reversal
 - **18** — Flag, Falling Reversal
 - **19** — Flag, Rising Continuation
 - **20** — Flag, Falling Continuation

Cup and Handle Pattern System

A Cup and Handle formation is a pattern that usually indicates a significant reversal. This pattern is identified by its rounded bottom (the cup) and a higher low (the handle). Once the handle has formed, a continuation is usually seen.

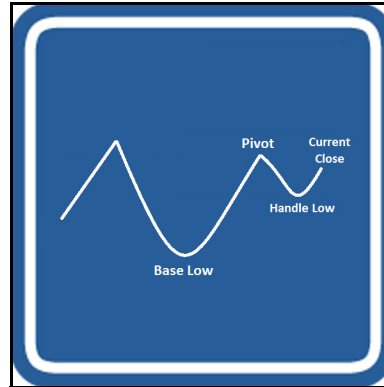


Figure 5-4. Cup and Handle Pattern Example

The CPS5 Cup and Handle system contains no sub-patterns.

Fibonacci Retracement Pattern Systems

Leonardo Fibonacci discovered a sequence of numbers where each successive number is the sum of the two previous numbers. Ratios of the Fibonacci numbers to each other form the retracement values 38% ($3/8$), 50% ($4/8$), and 62% ($5/8$). We use these retracement values to predict reversal points or changes in price trends, also known as retracements. A retracement is a reversal in the prevailing trend for a security. Often, securities retrace some percentage of a move after making a long move in a given direction.

As a Fibonacci Retracement forms, you will see the price retreating from a high to a percentage of the prior move. For example, if you look at a security's most recent significant low and high and measure between these two points, you can look for a retracement at 38%, 50%, or 62% from the last pivot point.



Figure 5-5. Fibonacci Retracement Pattern Example

There are three sub-patterns included in the CPS5 Fibonacci Retracement system.

- **0** — All Fibonacci Retracement Patterns
- **1** — 38% Retracement
- **2** — 50% Retracement
- **3** — 62% Retracement

Gap Systems

A gap occurs when the high of the day is below the low of the previous day or when the low of the day is above the high of the previous day. A gap is often seen at points of high or low demand for the security. Gaps are powerful tools for predicting future behavior of a security. Usually, the buying or selling pressure that created the gap will result in a significant move. The Chart Pattern Systems plug-in recognizes breakaway, measured, exhaustion, and common gaps.



Figure 5-6. Gap Pattern Example

There are four sub-patterns included in the CPS5 Gap system. When editing the system in a trading strategy you may refer to the sub-patterns as follows:

- **0** — All Gap Patterns
- **1** — Breakaway Gap
- **2** — Measured Gap
- **3** — Exhaustion Gap
- **4** — Common Gap

Head and Shoulders Systems

The head and shoulders chart pattern occurs in the market when the price of a security rises to a peak, drops, rises above the previous peak, drops again, rises again but not to the same level as the initial rise, and finally declines once more. The first and last peak make the shoulders of the pattern, and the middle (and highest) peak makes the head of the pattern.

The inverted head and shoulders pattern occurs in the market when the price of a security drops to a peak, rises, drops below the previous peak, rises again, drops again but not to the same level as the initial drop, and finally rises once more.

The Head and Shoulders and Inverted Head and Shoulders System generates a signal when a classic head and shoulders or inverted head and shoulders formation occurs.



Figure 5-7. Head and Shoulders and Inverted Head and Shoulders Pattern Examples

There are no sub-patterns included in the CPS5 Head and Shoulders system.

Range Systems

Ranges are trading ranges that have horizontal support and resistance lines that contain price action. You can trade the swings within the range, or the breakout from the range.



Figure 5-8. Range Pattern Example

There are two sub-patterns included in the CPS5 Range System. When editing the system in a trading strategy you may refer to the sub-patterns as follows:

- **0** — All Range Patterns
- **1** — Range Breakout
- **2** — Range Reversal

Saucer Pattern System

A saucer is a reversal chart pattern and represents a long consolidation period that turns from a bearish bias to a bullish bias. Saucers are often long patterns, and for this reason, they are easier to identify in a weekly chart. While they are fairly uncommon, they are often very predictive.

As a saucer pattern forms, you will see a clear arc with tight trading ranges at the bottom of the arc. The price trend shows a gradual change in trend as it develops, curving gently over several months, usually. You will often see a similar trend in volume.

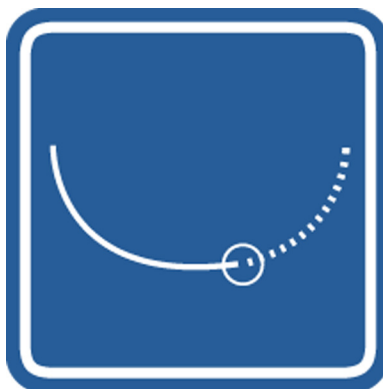


Figure 5-9. Saucer Pattern Example

There are two sub-patterns included in the CPS5 Saucer system. When editing the system in a trading strategy you may refer to the sub-patterns as follows:

- **0** — All Saucer Patterns
- **1** — Saucer
- **2** — Rounded Top

Scallop Pattern System

A Scallop is similar to a saucer, but rises higher on the right edge than the preceding top at the beginning of the pattern. This formation is bullish in an uptrend, and bearish in a downtrend.

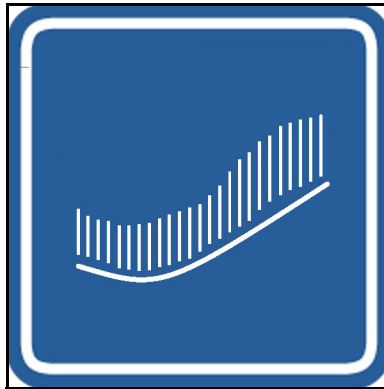


Figure 5-10. Scallop Pattern Example

There are two sub-patterns included in the CPS5 Scallop system. When editing the system in a trading strategy you may refer to the sub-patterns as follows:

- **0** — All Scallop Patterns
- **1** — Scallop, Ascending
- **2** — Scallop, Descending

Support & Resistance Systems

Support is a level on the chart (or in the market) where there is enough demand for the security to overcome selling pressure. This causes the downward trend to halt and turn up again. Support levels indicate that most investors feel the security is oversold.

Resistance is the opposite of support—it represents a level on the chart (or in the market) where there is enough supply of a security to overcome buying pressure. This causes the upward trend to halt and turn down. Resistance levels indicate that most investors feel the security is overbought.



Figure 5-11. Support & Resistance Pattern Example

There are twenty sub-patterns included in the CPS5 Support and Resistance System. When editing the system in a trading strategy you may refer to the sub-patterns as follows:

- **0** — All Support and Resistance Patterns
- **1** — Support Break(1)
- **2** — Support Break(2)
- **3** — Support Break(3)
- **4** — Support Break(4)
- **5** — Support Break(5)
- **6** — Support Reversal(1)
- **7** — Support Reversal(2)
- **8** — Support Reversal(3)
- **9** — Support Reversal(4)
- **10** — Support Reversal(5)
- **11** — Resistance Break(1)
- **12** — Resistance Break(2)
- **13** — Resistance Break(3)
- **14** — Resistance Break(4)
- **15** — Resistance Break(5)

- 16 — Resistance Reversal(1)
- 17 — Resistance Reversal(2)
- 18 — Resistance Reversal(3)
- 19 — Resistance Reversal(4)
- 20 — Resistance Reversal(5)

Tops and Bottoms

The double bottom chart pattern occurs in the market when the price of a security drops, rebounds, drops again to the same or similar level as the initial drop, and rebounds again. The two drops form a support level for the security. The double bottom pattern looks like the letter “W” on a chart.

The double top chart pattern occurs in the market when the price of a security rises, drops, rises again to the same or similar level as the initial rise, and finally drops again. The two rises form a resistance level for the security. The double top pattern looks like the letter “M” on a chart.

You cannot select Tops in system itself. Tops are the shorts while bottoms are the longs. If you want only Tops in a strategy, you would want to select shorts only in the strategy. But these 2 systems will provide tops & bottoms (shorts & longs) despite the label.

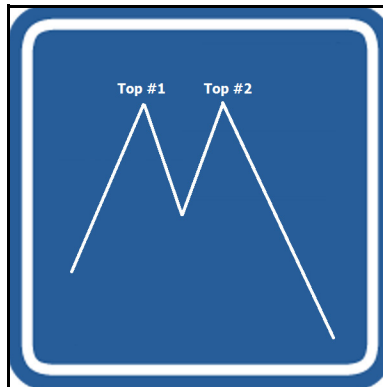


Figure 5-12.

There are four sub-patterns included in CPS5 Tops and Bottoms system. When editing the system in a trading strategy you may refer to the sub-patterns as follows:

- **0** — All Double and Triple TopsPatterns
- **1** — Double Top
- **2** — Double Bottom
- **3** — Triple Top
- **4** — Triple Bottom

Trendline System

A trendline is a straight line drawn on a chart of a security to depict the general direction the security is headed. A trendline forms across the peaks and valleys (pivot points) in a chart. As the line becomes validated with more pivot points, its significance increases. A break in a well-established trendline usually signals a trend reversal.

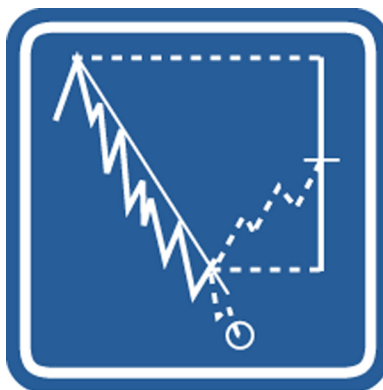


Figure 5-13. Trendline Pattern Example

There are eight sub-patterns included in the CPS5 Trendline System. When editing the system in a trading strategy you may refer to the sub-patterns as follows:

- **0** — All Trendline Patterns
- **1** — Trendline Break(2)
- **2** — Trendline Break(3)
- **3** — Trendline Break(4)

- 4 — Trendline Break(5+)
- 5 — Trendline Reversal(2)
- 6 — Trendline Reversal(3)
- 7 — Trendline Reversal(4)
- 8 — Trendline Reversal(5+)

Volume System

Volume measures the number of traded shares or contracts for a security over a period of time. Volume is simply the number of shares that are bought/sold. For example, if you buy 200 shares of a security from a seller, the volume for that period of time would increase by 200 because of your transaction.

A Volume Climax pattern is a place where volume increases and then decreases. The difference between a Volume Climax and a Volume Trend is that in a Volume Climax pattern, when you have volume turning around, the price chart also turns around. It can either turn to the downside or to the upside. On a Volume Trend pattern, you have the price continuing to move in the same direction that it was moving before. Volume Trend almost works like a Measured Gap to measure the midpoints of moves in charts.



Figure 5-14. Volume Pattern Example

There are two sub-patterns included in the CPS5 Volume System. When editing the system in a trading strategy you may refer to the sub-patterns as follows:

- **0** — All Volume Patterns
- **1** — Volume Climax
- **2** — Volume Trend

CPS5 Trading Strategies

Included with CPRM 5 are eight new trading strategies that use some of the popular new CPS5 Systems. The strategies were created using the Pattern Analyzer and selecting some of the best pattern settings for the given Pattern. The strategies are fairly simple in design with a basic vote block and market reversal exits.

You can edit all of these strategies, however, Nirvana Systems recommends that you save any changes made to the supplied strategies under a different name. This will keep the initial settings of these strategies intact for future use or reference.

The CPS5 strategies are prospecting strategies, meaning they should not be used for mechanical trading.

- **CPS5 Consolidations**—This strategy uses five different consolidation types to indentify the best consolidation patterns.
- **CPS5 Cup and Handle**—This strategy is built around the CPS5 Cup and Handle System.
- **CPS5 Gaps**—This strategy identifies breakaway and exhaustion gaps using two instances of the CPS5 Gap System
- **CPS5 Head and Shoulders**—This strategy is built around the CPS5 Head and shoulders Pattern
- **CPS5 Ranges**—This strategy identifies range trade opportunities using the CPS5 Range System.
- **CPS5 SR Break**—This strategy finds support and resistance break opportunities using four instances of the CPS5 Support and Resistance Pattern.
- **CPS5 Saucers**—This strategy uses the CPS5 Saucer System to indentify saucer formations in the chart.
- **CPS5 Trendline Break**—Two instances of the CPS5 Trendline System are used to identify trendline breaks in the chart.

6

Chart Pattern Systems Parameters

The CPRM5 Module includes Chart Pattern systems from Nirvana's Chart Pattern Systems plug-in. Chart Pattern Systems from the most current version of CPS(3), as well as the new Chart Pattern Systems(5) created for this module, are included to provide maximum flexibility for signal generation.

This chapter provides the parameters for both CPS3 and CPS5 versions. CPS5 system parameters are global and defined in the next section [CPS5 Pattern Parameters](#). CPS3 systems vary so are listed individually for each respective system.

CPS5 Systems

- CPS5 Candle Pattern
- CPS5 Channel Pattern
- CPS5 Consolidation Pattern
- CPS5 Cup and Handle Pattern
- CPS5 Fibonacci Retracement Pattern
- CPS5 Gap Pattern
- CPS5 Head and Shoulders Pattern
- CPS5 Saucer Pattern
- CPS5 Scallop Pattern
- CPS5 Support and Resistance Pattern
- CPS5 Trendline Pattern
- CPS5 Volume Pattern
- CPS5 Range Pattern
- CPS5 Tops and Bottoms Pattern

CPS3 Systems

- CPS3 Candle Pattern
- CPS3 Channel Pattern
- CPS3 Consolidation Pattern
- CPS3 Cup and Handle Pattern
- CPS3 Double Bottoms Pattern
- CPS3 Fibonacci Retracement Pattern
- CPS3 Gap Pattern
- CPS3 Head and Shoulders Pattern
- CPS3 Range Pattern
- CPS3 Saucer Pattern
- CPS3 Scallop Pattern
- CPS3 Support and Resistance Pattern
- CPS3 Trendline Pattern
- CPS3 Volume Pattern
- CPS3 Triple Bottoms Pattern

CPS5 Pattern Parameters

The CPS5 systems parameters may vary depending on whether or not sub-patterns or term applies to a specific system. For example, a consolidation has many sub-patterns that can be enabled for specific terms such as short, medium or long, while a cup and handle pattern has no sub-patterns or terms to select. This parameter description uses an example which covers all possible parameters that may be found in a CPS5 system. Understand that not all systems have every parameter.

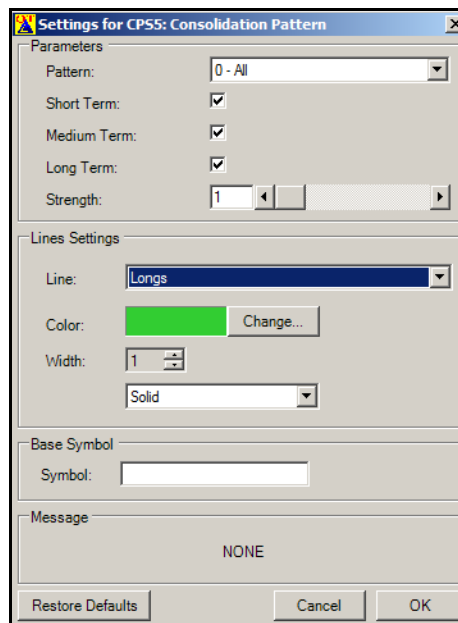


Figure 6-1. CPS5 Pattern Parameters

- **Pattern**—The Pattern drop-down parameter lists all sub-patterns that are contained within the pattern type.
- **Short Term**—Specifies patterns that occur in 16 or fewer bar timeframe.
- **Medium Term**—Specifies patterns that occur between 17 and 32 bars.
- **Long Term**—Specifies patterns that occur in a 33 or higher bar timeframe.
When referencing the Terms within strategy blocks, -1 is enabled & 0 is disabled.

- **Strength**—Set the minimum strength rate the pattern must meet to be considered by the system.
- **Line Properties**—Define the appearance of the system that is plotted on the chart.
 - **Line**—Select the line (long, short, anchor) to be edited.
 - **Color**—Changes the color of the line study on the chart.
 - **Width**—Controls the width of the line in the chart.
 - **Style**—Allows user to edit line styles of selected line.

CPS3 Pattern System Parameters

The CPS3 systems are configurable. That is, in certain cases, you can control the slope or length of a line for a particular system.

The CPS3 systems appear in the System and Confirm Blocks of your strategies and they are also available for plotting directly on charts. As with all other systems, you can use the Chart Pattern Systems to generate signals, to confirm signals in other strategies, and even to generate exits.

Chapter 4 describes the patterns that all of the chart pattern systems are based on. This section provides parameter information for the CPS3 systems specifically.

CPS3 Candle Pattern System

The CPS3 Candle Pattern System uses the following parameters:

- **Type of Pattern**
 - **0** — All Candles
 - **1** — Hammer
 - **2** — Hanging Man
 - **3** — Belt Hold
 - **4** — Piercing Lines
 - **5** — Dark Cloud Cover
 - **6** — Engulfing Lines

- 7 — Harami
 - 8 — Inverted Hammer
 - 9 — Shooting Star
 - 10 — Counterattack
 - 11 — Kicking
 - 12 — Doji Star
 - 13 — Morning Star
 - 14 — Evening Star
 - 15 — Three Inside Up
 - 16 — Three Outside Up
 - 18 — Three Outside Down
 - 19 — Three White Soldiers
 - 20 — Three Black Crows
 - 21 — Stick Sandwich
 - 22 — Side by Side White Lines
 - 23 — Tasuki
 - 24 — Three Methods
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern. Each pattern is subdivided into groups, so that strength varies within each pattern.

CPS3 Channel Pattern System

The CPS3 Channel System uses the following parameters:

- **Max Width**—Maximum consolidation price width in ATR's
- **Min Length**—Minimum pattern length in bars
- **Max Length**—Maximum pattern length in bars
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is

the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern. Each pattern is subdivided into groups, so that strength varies within each pattern.

CPS3 Consolidation Pattern System Parameters

The CPS3 Consolidation System uses the following parameters:

- **Type of Pattern**
 - **0** — All consolidations
 - **1** — Rectangle
 - **2** — Rectangle Top
 - **3** — Rectangle Bottom
 - **4** — Triangle, Ascending
 - **5** — Triangle, Descending
 - **6** — Triangle, Symmetrical
 - **7** — Wedge, Rising
 - **8** — Wedge, Falling
 - **9** — Wedge, Rising Continuation
 - **10** — Wedge, Falling Continuation
 - **11** — Broadening Top
 - **12** — Broadening Bottom
 - **13** — Broadening Continuation
 - **14** — Broadening Reversal
 - **15** — Flag, Rising
 - **16** — Flag, Falling
 - **17** — Flag, Rising Reversal
 - **18** — Flag, Falling Reversal
 - **19** — Flag, Rising Continuation
 - **20** — Flag, Falling Continuation
- **Max Width**—Maximum consolidation price width in ATR's

- **Min Length**—Minimum pattern length in bars
- **Max Length**—Maximum pattern length in bars
- **Anchor Distance**— Minimum distance from anchor in ATR's
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern. Each pattern is subdivided into groups, so that strength varies within each pattern. For example, consolidations are divided into the various types of consolidations, such as Ascending Triangles, Rectangles, and Pennants.

CPS3 Cup and Handle Pattern System

The CPS3 Cup and Handle System uses the following parameters:

- **Max Width**—Maximum consolidation price width in ATR's
- **Min Length**—Minimum pattern length in bars.
- **Max Length**—Maximum pattern length in bars.
- **Min Handle Size**— Minimum pattern length in bars.
- **Max Handle Size**—Maximum pattern length in bars.
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern. Each pattern is subdivided into groups, so that strength varies within each pattern. For example, consolidations are divided into the various types of consolidations, such as Ascending Triangles, Rectangles, and Pennants.

CPS3 Double Top and Bottom Pattern System

For CPS3 Double Bottoms & Triple Bottoms systems only. These 2 systems will provide both Tops & Bottoms. You cannot select Tops or Bottoms in either of them. Tops are the shorts while bottoms are the longs. If you want only tops in a strategy, you would want to select shorts only in the strategy. And if you want bottoms only in a strategy, you would want to select longs only in the strategy.

- **Pivots Term**—Defines the term of pivot points to use in generating a pattern and signals. A pivot point is defined as a place on the chart where the security changed trend direction. The application attempts to find pivot points that reinforce the short, medium, and long-terms used in OmniTrader. By defining the term of pivot points we want the system to use, we can better define the type of signals generated. A short-term pattern occurs from 1-16 bars. A medium-term pattern falls between 17-32 bars, and a long-term pattern occurs at 33 bars or greater. There are seven different options you can use when defining the Pivots Term:
 - 1—Short-term
 - 2—Medium-term
 - 3—Short and Medium-term
 - 4—Long-term
 - 5—Short and Long-term
 - 6—Medium and Long-term
 - 7—All
- **Shape Sensitivity**—Defines how close to the same level the tops and bottoms must be before a signal is generated.
- **Center Symmetry**—Defines how close to perfectly center the central valley or peak must be before a signal is generated. A setting of 0 is a perfectly centered peak or valley.
- **Anchor**—Specifies the minimum size of the pattern origin relative to the peak of the pattern. In order to be considered for signal generation, this level must be exceeded. For example, if you set the anchor value at 1.5, the CPS plug-in will only recognize patterns that have an anchor point of at least one and a half times the pattern peak.
- **Pivot Width**—Specifies the minimum number of bars between the pivots a pattern must be before a signal is generated.
- **ATR Periods**—Defines the number of periods used in Average True Range (ATR) calculations. ATR measures the volatility of the security
- **Cross Center**—Specifies whether the signal is fired when the pivot formation occurs or when the center peak or valley level is crossed. Select 0 to set the signal to fire when the pivot is formed. Select 1 to set the signal to fire when the center peak or valley level is crossed.

CPS3 Fibonacci Retracement System Parameters

The CPS3 Fibonacci Retracement System uses the following parameters:

- **Type of Pattern:**
 - **0** — All Fibonacci Retracement Patterns
 - **1** — 38% Retracement
 - **2** — 50% Retracement
 - **3** — 62% Retracement
- **Min Length**—Minimum pattern length in bars
- **Max Length**— Maximum pattern length in bars Short-Term
- **Short-Term Max Width**—Maximum width of short-term retracement in ATR's
- **Medium-Term Max Width**—Maximum width of medium-term retracement in ATR's
- **Long-Term Max Width**—Maximum width of long-term retracement in ATR's
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern.

CPS3 Gap Pattern System Parameters

The CPS3 Gap System uses the following parameters:

- Type of Pattern
 - **0** — All Gap Patterns
 - **1** — Breakaway Gap
 - **2** — Measured Gap
 - **3** — Exhaustion Gap
 - **4** — Common Gap
 - **Gap Size Factor**—Minimum ratio of gap over average recorded gap
- **Gap MA Period**— Period used to calculate average gap
- **Min Relative Gap Size**—Minimum gap size (percent)
- **Max Relative Gap Size**—Maximum gap size (percent)

- **Strength**—CPRM3 strength rating

Head and Shoulder Pattern System Parameters

The Head and Shoulders and Inverted Head and Shoulders System use the following parameters:

- **Pivots Term**—Defines the term of pivot points to use in generating a pattern and signals. A pivot point is defined as a place on the chart where the security changed trend direction. The application attempts to find pivot points that reinforce the short, medium, and long-terms used in OmniTrader. By defining the term of pivot points we want the system to use, we can better define the type of signals generated. A short-term pattern occurs from 1-16 bars. A medium-term pattern falls between 17-32 bars, and a long-term pattern occurs at 33 bars or greater.

There are seven different options you can use when defining the Pivots Term:

- **1**—Short-term
 - **2**—Medium-term
 - **3**—Short and Medium-term
 - **4**—Long-term
 - **5**—Short and Long-term
 - **6**—Medium and Long-term
 - **7**—All
- **Shape Sensitivity**—Defines how close to the same level the tops and bottoms must be before a signal is generated.
 - **Max Slope**—Specifies the maximum absolute value of the slope of the trendline drawn through the shoulders.
 - **Anchor**—Specifies the minimum size of the pattern origin relative to the head of the pattern. In order to be considered for signal generation, this level must be exceeded. For example, if you set the anchor value at 1.5, the CPS plug-in will only recognize patterns that have an anchor point of at least one and a half times the pattern head.
 - **Pivot Width**—Specifies the minimum number of bars between the pivots a pattern must be before a signal is generated.
 - **ATR Periods**—Defines the number of periods used in Average True Range (ATR) calculations. ATR measures the volatility of the security

- **Trendline**—Specifies whether the signal is fired when the pivot formation occurs or when the trendline formed by the shoulders is crossed. Select 0 to set the signal to fire when the pivot is formed. Select 1 to set the signal to fire when the trendline is crossed.

CPS3 Range Pattern System Parameters

The CPS3 Range System uses the following parameters:

- **Max Width**—Maximum width in ATR's
- **Min Length**—Minimum pattern length in bars
- **Max Length**—Maximum pattern length in bars
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern.

CPS3 Saucer Pattern Parameters

The CPS3 Saucer System uses the following parameters:

- **Max Width**—Maximum width in ATR's
- **Min Length**—Minimum pattern length in bars
- **Max Length**—Maximum pattern length in bars
- **Anchor Distance**—Minimum distance from anchor in ATR's
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern.

CPS3 Scallop Pattern System

The CPS3 Scallop Pattern System uses the following parameters:

- **Max Width**—Maximum width in ATR's
- **Min Length**—Minimum pattern length in bars
- **Max Length**—Maximum pattern length in bars

- **Anchor Distance**—Minimum distance from anchor in ATR's
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern.

CPS3 Support & Resistance Pattern Systems

The Support and Resistance Systems for all version of CPS uses the following parameters:

- **Term of Pivots**—Defines the term of pivot points to use in generating a pattern and signals. A pivot point is defined as a place on the price bar where the security changed price direction. The application attempts to find pivot points that reinforce the short, medium, and long-terms used in OmniTrader. By defining the term of pivot points we want the system to use, we can better define the type of signals generated. A short-term pattern occurs from 1-16 bars. A medium-term pattern falls between 17-32 bars, and a long-term pattern occurs at 33 bars or greater.

There are seven different options you can use when defining the Pivots Term:

- **1**—Short-term
- **2**—Medium-term
- **3**—Short and Medium-term
- **4**—Long-term
- **5**—Short and Long-term
- **6**—Medium and Long-term
- **7**—All
- **Break Type**—Specifies whether to identify breaks, reversals, or both on the chart. A break is indicated by a break in the line. A break is helpful in identifying an area in the chart where the trend is likely to continue. A reversal is indicated by a sudden change in the price direction of a security.
 - **1**—Breaks Only
 - **2**—Break and Reversals
 - **3**—Reversals Only

- **Correlation Coefficient**—Defines the correlation coefficient of the Support/Resistance pattern. This parameter is figured as an R-squared based calculation of the correlation between the pivot points that form the support and resistance pattern.
- **Min Length**—Defines the minimum allowable distance in bars from the first pivot point to the last pivot point.
- **Max Length**—Defines the maximum allowable distance in bars from the first pivot point to the last pivot point.
- **High/Low over N Periods**—Defines the number of bars before the first pivot point in which the chart cannot break the support or resistance level. This parameter is figured based on high and low prices.
- **Allow One Pivot Breaks**—Specifies that the plug-in will find trendline breaks that have only one pivot point.
- **Draw ATR Band**—Draws an Average True Range band on the pattern. Average True Range measures the volatility of the security.
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern.

CPS3 Trendline Pattern System Parameters

The Trendline System for all versions of CPS uses the following parameters:

- **Pivots Term**—Defines the term of pivot points to use in generating a pattern and signals. A pivot point is defined as a place on the chart where the security changed trend direction. The application attempts to find pivot points that reinforce the short, medium, and long-terms used in OmniTrader. By defining the term of pivot points we want the system to use, we can better define the type of signals generated. A short-term pattern occurs from 1-16 bars. A medium-term pattern falls between 17-32 bars, and a long-term pattern occurs at 33 bars or greater.

There are seven different options you can use when defining the Pivots Term:

- **1**—Short-term
- **2**—Medium-term

- 3—Short and Medium-term
- 4—Long-term
- 5—Short and Long-term
- 6—Medium and Long-term
- 7—All
- **Break Type**—Specifies whether to identify breaks, reversals, or both on the chart.
 - 1—Breaks Only
 - 2—Breaks and Reversals
 - 3—Reversals Only
- **Min. Pivots on Trendline**—Defines the number of pivot points the plug-in must find in order to identify a trendline. The default setting is 2.
- **Min Length**—Defines the minimum allowable distance in bars from the first pivot point to the last pivot point.
- **Max Length**—Defines the maximum allowable distance in bars from the first pivot point to the last pivot point.
- **Min Distance btw Points**—Defines the minimum allowable distance between pivot points. Pivot Points are identified by touches to the line.
- **Max Distance btw Points**—Defines the maximum allowable distance between pivot points. Pivot Points are identified by touches to the line.
- **Min Slope**—Defines the minimum allowable slope. Slope is an increase in the price per bar. This parameter is annualized to fit all timeframes.
- **Max Slope**—Defines the maximum allowable slope. Slope is an increase in the price per bar. This parameter is annualized to fit all timeframes.
- **Display Bands**—Draws an Average True Range band on the pattern. Average True Range measures the volatility of the security
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and is based on the profitability of the pattern.

CPS3 Triple Tops and Bottom Pattern System Parameters

- **Pivots Term**—Defines the term of pivot points to use in generating a pattern and signals. A pivot point is defined as a place on the chart where the security changed trend direction. The application attempts to find pivot points that reinforce the short, medium, and long-terms used in OmniTrader. By defining the term of pivot points we want the system to use, we can better define the type of signals generated. A short-term pattern occurs from 1-16 bars. A medium-term pattern falls between 17-32 bars, and a long-term pattern occurs at 33 bars or greater. There are seven different options you can use when defining the Pivots Term:
 - 1—Short-term
 - 2—Medium-term
 - 3—Short and Medium-term
 - 4—Long-term
 - 5—Short and Long-term
 - 6—Medium and Long-term
 - 7—All
- **Shape Sensitivity**—Defines how close to the same level the tops and bottoms must be before a signal is generated.
- **Center Symmetry**—Defines how close to perfectly center the central valley or peak must be before a signal is generated. A setting of 0 is a perfectly centered peak or valley.
- **Anchor**—Specifies the minimum size of the pattern origin relative to the peak of the pattern. In order to be considered for signal generation, this level must be exceeded. For example, if you set the anchor value at 1.5, the CPS plug-in will only recognize patterns that have an anchor point of at least one and a half times the pattern peak.
- **Pivot Width**—Specifies the minimum number of bars between the pivots a pattern must be before a signal is generated.
- **ATR Periods**—Defines the number of periods used in Average True Range (ATR) calculations. ATR measures the volatility of the security
- **Cross Center**—Specifies whether the signal is fired when the pivot formation occurs or when the center peak or valley level is crossed. Select 0 to set the signal

to fire when the pivot is formed. Select 1 to set the signal to fire when the center peak or valley level is crossed.

CPS3 Volume Pattern System Parameters

The CPS3 Volume System uses the following parameters:

- **Type of Pattern:**
 - **0** — All Volume Patterns
 - **1** — Volume Climax
 - **2** — Volume Trend
 - **Volume MA Period**—Period used to calculate average volume
- **Min Volume Spike Factor**—Minimum ratio of volume over average recorded volume
- **Max Volume Spike Factor**—Maximum ratio of volume over average recorded volume
- **Strength**—Defines the strength setting of the patterns displayed. A strength of 1 is the weakest, displaying all patterns detected by the module. A strength of 5 is the strongest, displaying only the most historically profitable patterns. The strength rating comes from an analysis of over one million bars of market data and

