Aspen Research Group, Ltd.

Kase Analysis Studies on Aspen Graphics

Revision 1.d

KASE ANALYSIS STUDIES ON ASPEN GRAPHICS

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This document describes software designed to monitor stocks, commodities, and other market instruments. Using this software to sell or purchase these instruments may have significant financial implications. Please consult a professional before using Aspen Optionalysis or other Aspen Graphics features to buy or sell these instruments.

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1. PREFACE

This document describes Kase Studies in detail while remaining as concise as possible by assuming a certain level of previous audience training. This document describes Kase Study types and their associated parameters and assumes the reader knows how to view the studies and apply parameter values. You may refer to the *Aspen Graphics User Guide* for a complete discussion of the application of studies and their parameters.

1.1 Conventions

This document employs the following conventions:

Convention Style	**Meaning**
Underlined Italics	Referenced document title.
 Red Arial with Exclamation Point	Product Warning.
Indented, Bold, Arial	Product Note.
<*italics*><*italics*>	Symbol Syntax
"CAPS" in Quotes preceded by a period	Command syntax

TABLE 1 Document Conventions

2. INSTALLATION

Installation of KASE Studies on Aspen Graphics is straightforward. KASE functions are already included in your version of Aspen Graphics software and only require an additional entitlement via the Admin utility to appear on your Studies Menu.

Entitling Kase Studies for Aspen Graphics is simple. A Kase Studies entitlement section has been added to the lower-right corner of the **Edit Entitlements for Profile** page. See Figure 1.

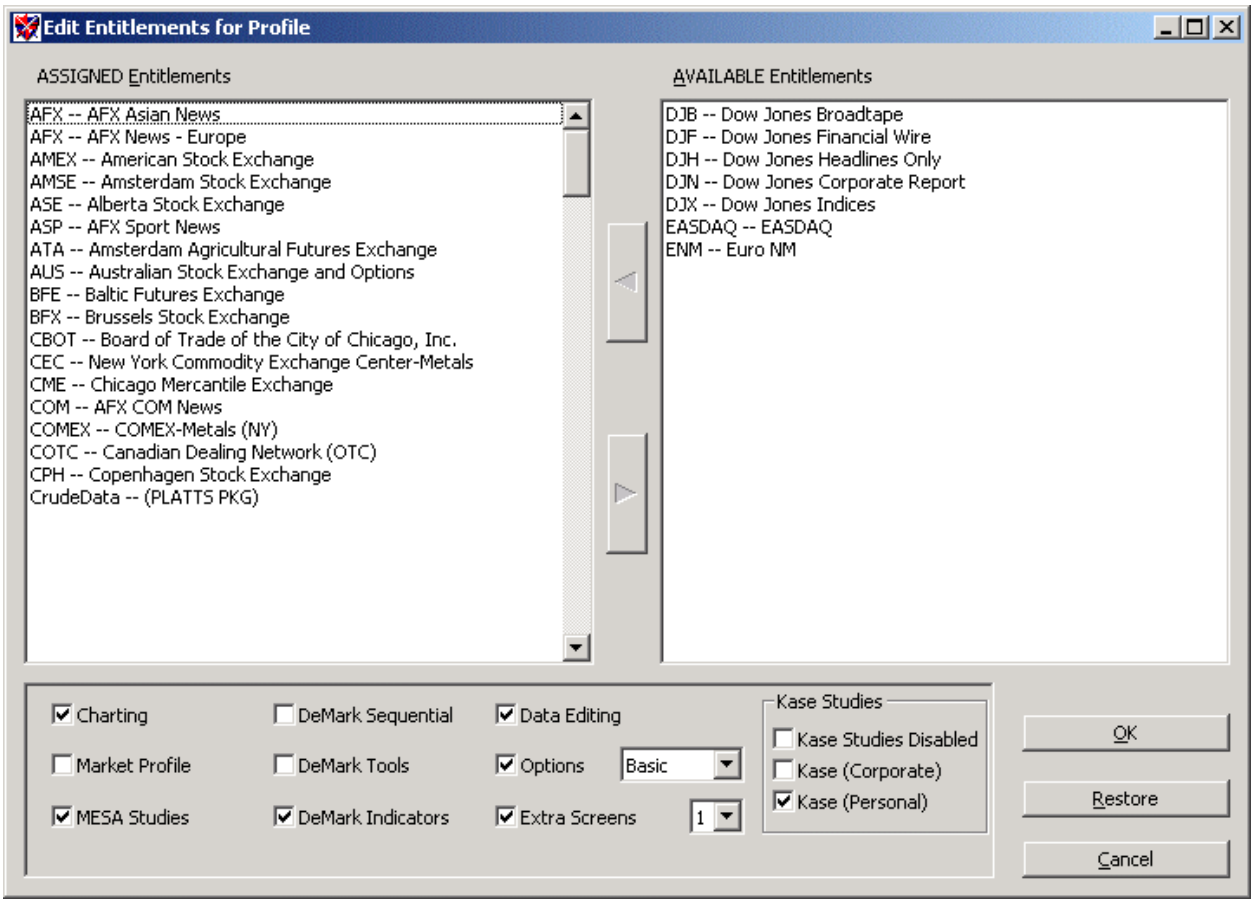

FIGURE 1 Edit Profile Entitlements Screen

Simply apply the desired entitlement level by left clicking on the white box next to the title. Kase Studies entitlement levels are defined below:

- Kase Studies Disabled – Default. Kase Studies are turned off.
- Kase (Corporate) – Adds user to the corporate-volume license.
- Kase (Personal) – Enables a single user to utilize Kase Studies.

Contact your Aspen Sales representative for more information. Please refer to the *Aspen Graphics – Admin Administration Utility* document for a complete description of Aspen entitlements.

3. KASE STUDIES

Kase Analysis Studies on Aspen Graphics provide an unparalleled systematic approach to structured market timing. The Kase Analysis package consists of two overlays and six conventional studies. Taken together, the features of the Kase Analysis package make it one of the most complete market monitoring systems available. Its accuracy is well documented and exhibits a versatility that is second to none.

3.1 The Select Kase Study Menu

The Kase Studies are available through the Select Study menu. Once Kase studies are enabled through Admin, the selection on the Select Study menu is made available. Selecting *Kase Studies*… displays the Select Kase Study menu.

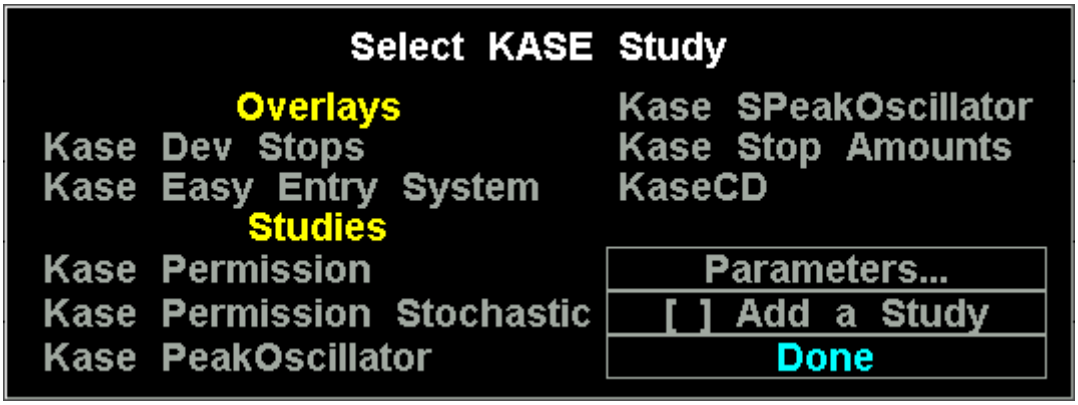

FIGURE 2 Select KASE Study Menu

Like other study menus, the Select KASE Study menu makes a distinction between overlays and conventional studies. Overlays automatically get displayed on top of information in the active chart window while conventional studies replace the information unless you chose to Add a Study.

4. KASE ANALYSIS OVERLAYS

The Kase Analysis Overlays apply color-coded buy, sell and stop signals to your Aspen Graphics Chart. Kase Overlays may be added to a bar chart window by selecting one from the Kase Study Menu.

4.1 KASE Entry Point

Often the computer's ability to provide information is greater than our own ability to synthesize and use it properly. Thus Kase's Entry Point study condenses buy and sell signals into a simplified color coded system employing Blue shades for long, Violet shades for short, and Cyan or Purple shades for ambiguous signals. Each colored signal appears over the top of your Aspen bar chart.

In one colored dot a trader can understand whether or not the market is generating a long or short signal and the status of the higher time frame filter.

FIGURE 3 KASE Entry Point Overlay

At a glance the trader knows if the short-term signal is fully permissioned, or whether the filter is an ambiguous state. By using such simple color coding techniques, Kase has been able to classify signals into first, second and third class without the trader needing to spend valuable time on market analysis and review of charts and chart patterns.

4.1.1 Easy Entry Point Overlay Parameters

The Kase Easy Entry Point Overlay for Aspen Graphics utilizes proprietary formulas to establish market indicators. While the formula parameters themselves can not be changed, subscribers are able to alter the appearance of the Entry Point indicators.

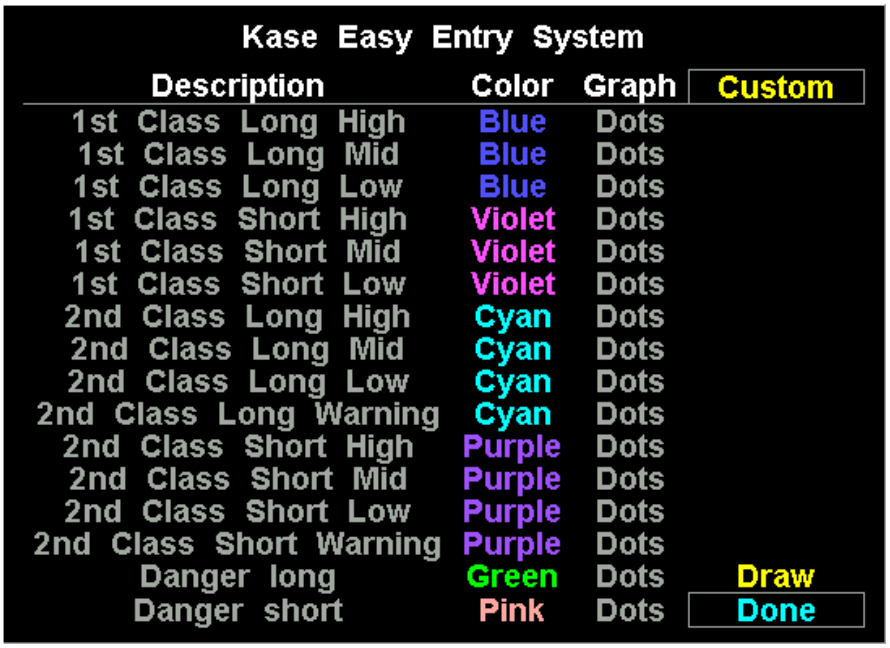

FIGURE 4 Easy Entry Point Default Parameters

Field	Function
Description	The description field lists the available study elements. There are sixteen study elements in the Easy Entry Point study, all are rendered indicators: 1st Class Long High 1st Class Long Mid 1st Class Long Low 1st Class Short High 1st Class Short Mid 1st Class Short Low 2nd Class Long High 2nd Class Long Mid 2nd Class Long Low 2nd Class Long Warning 2nd Class Short High 2nd Class Short Mid 2nd Class Short Low 2nd Class Short Warning Danger Long Danger Short
Color	Indicates the color in which the respective study element is rendered. Selecting any of the values in this field displays the Color menu. Choosing an alternative color from the menu changes the color of the respective study element. Defaults: 1st Class Longs – Blue 1st Class Shorts – Violet

Field	Function
	2nd Class Longs – Cyan 2nd Class Shorts – Purple Danger Long – Green Danger Short – Pink
Graph	Indicates the rendering method for the respective study element. Selecting any of the values in this field displays the Graph menu. Choosing an alternative selection from the menu changes the rendering of the respective study element. Default for all elements are Dots.

TABLE 2 Kase Easy Entry Point Parameters

4.2 KASE DevStop Overlay

The second overlay in Aspen's Kase package is a rigorous exit system. This stop system finds the optimal statistical balance between letting profits run, while cutting losses. Kase DevStop seeks an ideal stop level by accounting for volatility (risk), the variance in volatility (the change in volatility from bar to bar), and volatility skew (the propensity for volatility to occasionally spike incorrectly).

Kase Dev Stops are set at points at which there is an increasing probability of reversal against the trend being statistically significant based on the log normal shape of the range curve. Setting stops will help you take as much risk as necessary to stay in a good position, but not more.

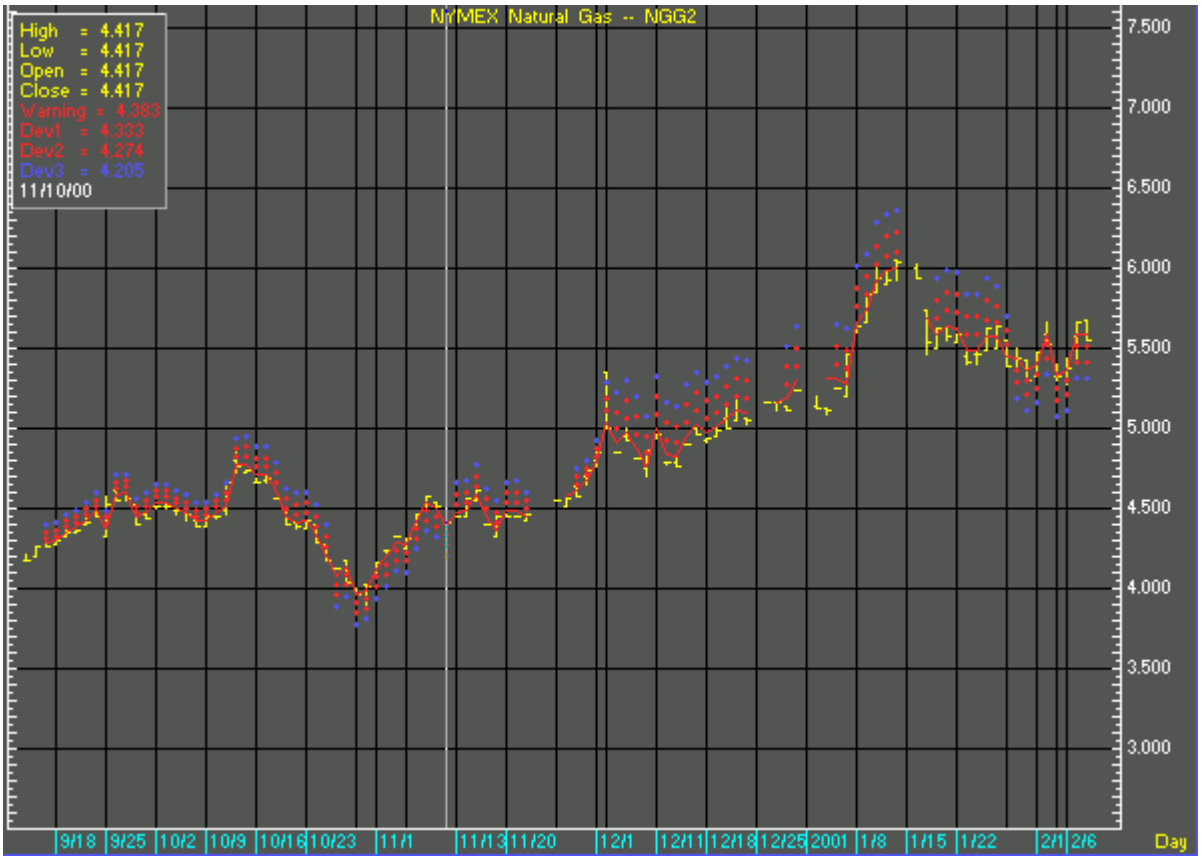

FIGURE 5 KASE Dev Stop Overlay

4.2.1 DevStop Variance

Simply, variance can be understood to be the degree to which individual observations vary from the average or mean observation.

> **Example:** Imagine two different market conditions. In each condition, the average range of the market is $1 per day. However market 1 is highly varied with bars ranging from $0.20 to $5. Market 2 is regular, with bars ranging from $0.50 to $2.00. Thus, market 2 has less variance, and is less risky.

4.2.2 DevStop Applied

The DevStop overlay is based on various numbers of standard deviations above the mean over a 2-bar reversal. Using standard deviations automatically accounts for variance and allows the user to quantify the odds of being stopped out based on a normal distribution.

DevStop uses standard deviations at three levels. The stops are shown as colored indicators at a defined distance from a red Mean Line.

The application of the three level stops are as follows:

- Narrow stop: Red dot closest to Mean Line. Use early in the trade (prior to break-even) and late in the trade when indications are that a major reversal or end of the trend is imminent.
- Medium stop: Red dot furthest from Mean Line. Use as an intermediate stop to lighten up on trade-size during possible reversals.
- Wide stop: Blue dot. Safest of the three. Use most of the time.

4.2.3 Kase DevStop Parameters

The Kase Dev Stop Overlay for Aspen Graphics utilizes proprietary formulas to establish market indicators. While the formula can not be changed, subscribers are able to alter six of the study variables in order to customize the DevStop signals.

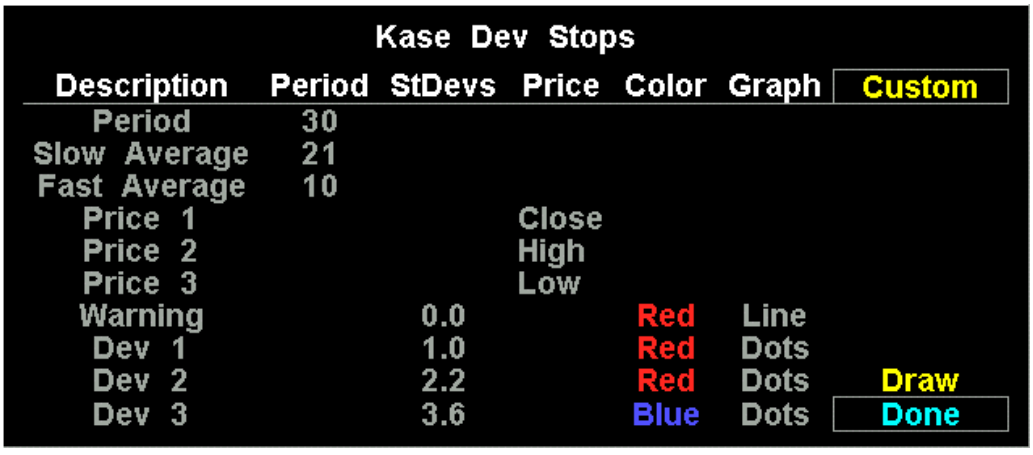

FIGURE 6 Kase Dev Stop Parameter Dialog

Field	Function
Description	The description field lists the available study elements. There are ten study elements in the Kase Dev Stop study. Six elements are study variables: Period Slow Average

Field	Function
	Fast Average Price 1 Price 2 Price 3 Four elements are rendered indicators: Warning Dev 1 Dev 2 Dev 3
Period	Indicates the number of bars used to calculate the standard deviations for each variable used in the DevStop indicator. Defaults: Period – 30 bars Slow Average – 21 bars Fast Average – 10
StDevs	Indicates the multiplier of the Standard Deviation for each DevStop indicator. Defaults: Warning – 0.0 Dev 1 – 1.0 Dev 2 – 2.2 Dev 3 – 3.6
Price	Indicates the price element (High, Low, Open, Close) used to calculate the Kase DevStop study. Defaults: Price 1 – Close Price 2 – High Price 3 – Low
Color	Indicates the color in which the respective study element is rendered. Defaults: Warning – Red Dev 1 – Red Dev 2 – Red Dev 3 – Blue
Graph	Indicates the rendering method for the respective study element. Defaults: Warning – Line Dev 1 – Dots Dev 2 – Dots Dev 3 – Dots

TABLE 3 Kase DevStop Parameters

5. KASE MOMENTUM INDICATORS

The term “momentum indicator” is used to describe a broad category of trading tools designed to identify overbought and oversold conditions and turns in the market. Kase’s momentum indicator set consists of two studies:

- The acclaimed PeakOscillator based on Kase’s serial dependency index which measures the degree of non-random behavior.
- The KaseCD which is a second derivative of PeakOscillator.

Each indicator is effective in gauging trends in the market using highly sophisticated statistical techniques.

5.1 KASE PeakOscillator

The PeakOscillator is unique among first derivative or “rate-of-change” indicators in that it statistically evaluates over fifty trend lengths and automatically adapts to both cycle length and volatility. In addition, it replaces the crude linear mathematics of old with logarithmic and exponential models that better reflect the true nature of the market.

Thus, the PeakOscillator is a self-optimizing indicator which need not be back tested for optimal inputs as these are self-generated. The PeakOscillator is unique in that it can be applied across multiple time frames and different commodities.

As a hybrid indicator, the PeakOscillator also generates a trend signal via the crossing of the histogram through the zero line. In addition, the purple KPeak histogram line indicates when the oscillator has reached an extreme condition. When the oscillator reaches this peak and then turns, it means that most of the time the market will turn either at the present extreme, or (more likely) at the following extreme.

The study consists of three indicators:

- The PeakOscillator itself is rendered as a histogram.
- KPeak is a purple line within the histogram signifying a market extreme.
- The Blue Kpeak-Min line is a maximum of two standard deviations of the PeakOscillator value.
- The Red PeakOut line is a minimum of two standard deviations of the PeakOscillator value.

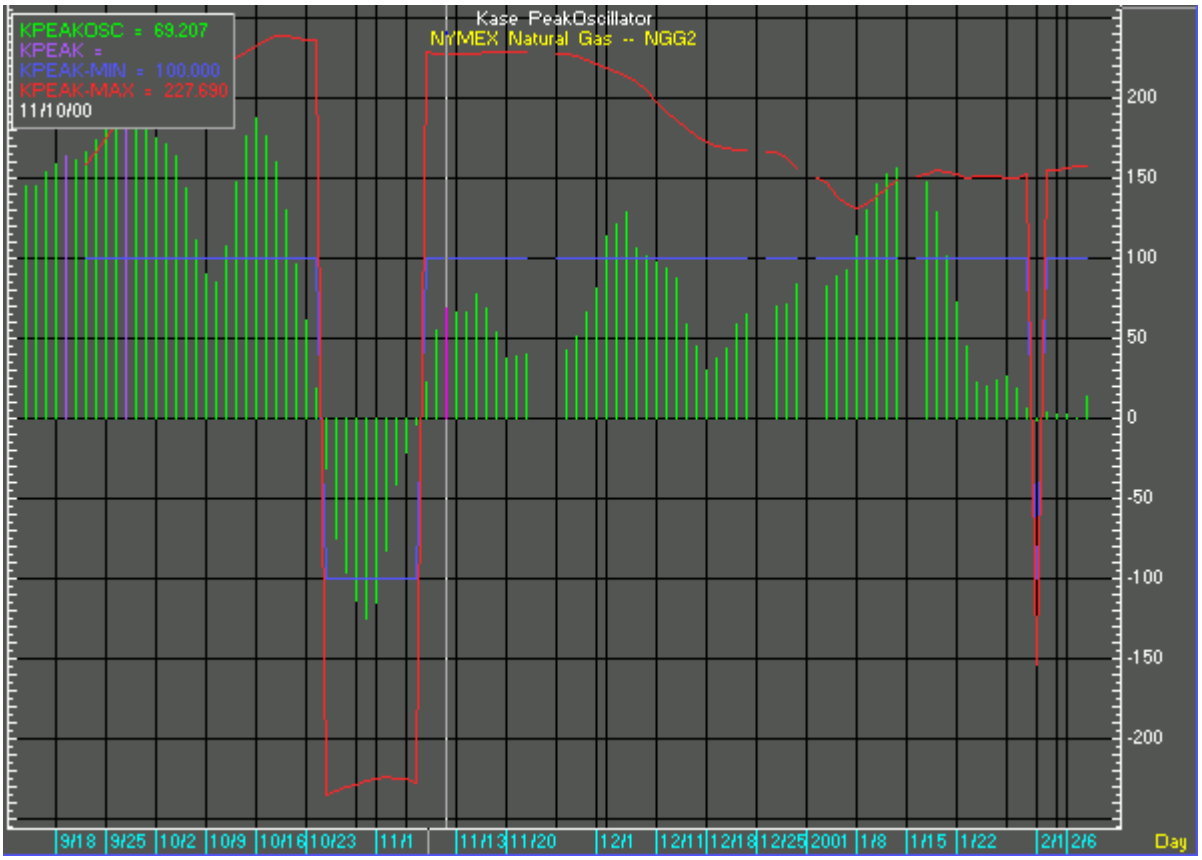

FIGURE 7 Kase PeakOscillator Momentum Indicator

5.1.1 Kase PeakOscillator Parameters

The Kase PeakOscillator Study for Aspen Graphics utilizes proprietary formulas to establish market indicators. Certain formula variables may be altered to customize the resultant study indications.

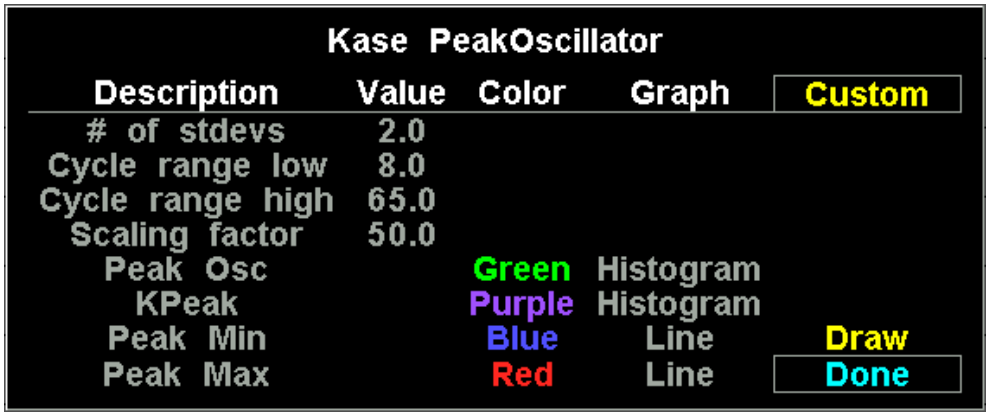

FIGURE 8 Kase PeakOscillator Default Parameters

Field	Function
Description	The description field lists the available study elements. There are eight study elements in the Kase PeakOscillator study.

Field	Function
	Four elements are study variables: # of StDevs Cycle Range Low Cycle Range High Scaling Factor Four elements are rendered indicators: Peak Osc Kpeak Peak Min Peak Max
Value	Indicates the value of each respective study variable. Defaults: # of StDevs – 2.0 Cycle Range Low – 8.0 Cycle Range High – 65.0 Scaling Factor – 50.0
Color	Indicates the color in which the respective study element is rendered. Defaults: Peak Osc – Green Kpeak – Purple Peak Min – Blue Peak Max – Red
Graph	Indicates the rendering method for the respective study element. Defaults: Peak Osc – Histogram Kpeak – Histogram Peak Min – Line Peak Max – Line

TABLE 4 Kase PeakOscillator Parameters

5.2 KASE SPeakOscillator

The Kase SPeakOscillator is identical to the PeakOscillator with one exception:

- Kase SPeakOscillator's Peak Max indicator will always be 10 points closer to zero.

Please refer to Section 5.1 for a description of the Kase PeakOscillator.

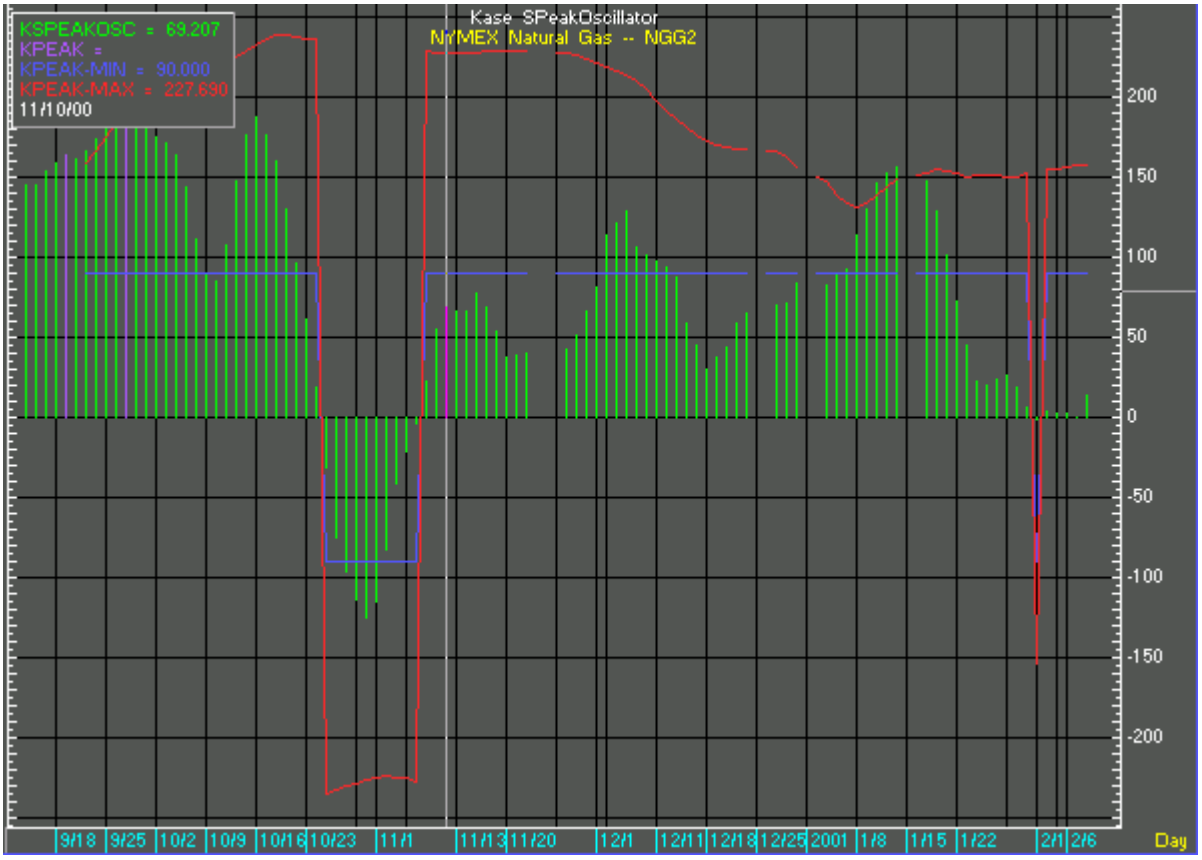

FIGURE 9 Kase SPeakOscillator Momentum Indicator

5.2.1 Kase SPeakOscillator Parameters

Kase SPeakOscillator parameters are identical to the Kase PeakOscillator parameters. Please refer to Section 5.1.1.

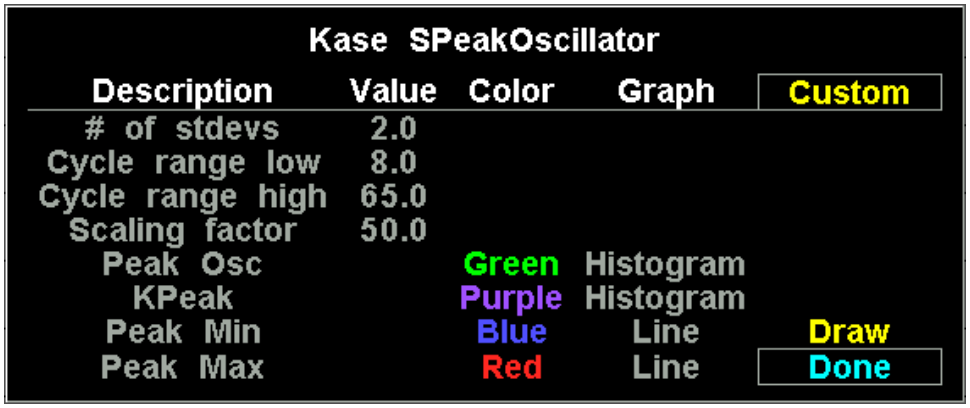

FIGURE 10 Kase SPeakOscillator Default Parameters

5.3 KaseCD Oscillator

KaseCD is a sensitive, second derivative indicator of the PeakOscillator. Since the KaseCD is derived from the PeakOscillator it is also adaptive, unlike the fixed value MACD.

KaseCD is derived by plotting the difference between the PeakOscillator and a moving average of itself.

The KaseCD verifies divergence. It is more sensitive than the PeakOscillator so it detects minor turns and corrections. The KaseCD exhibits much higher, more reliable signals when used in the same familiar manner as the MACD.

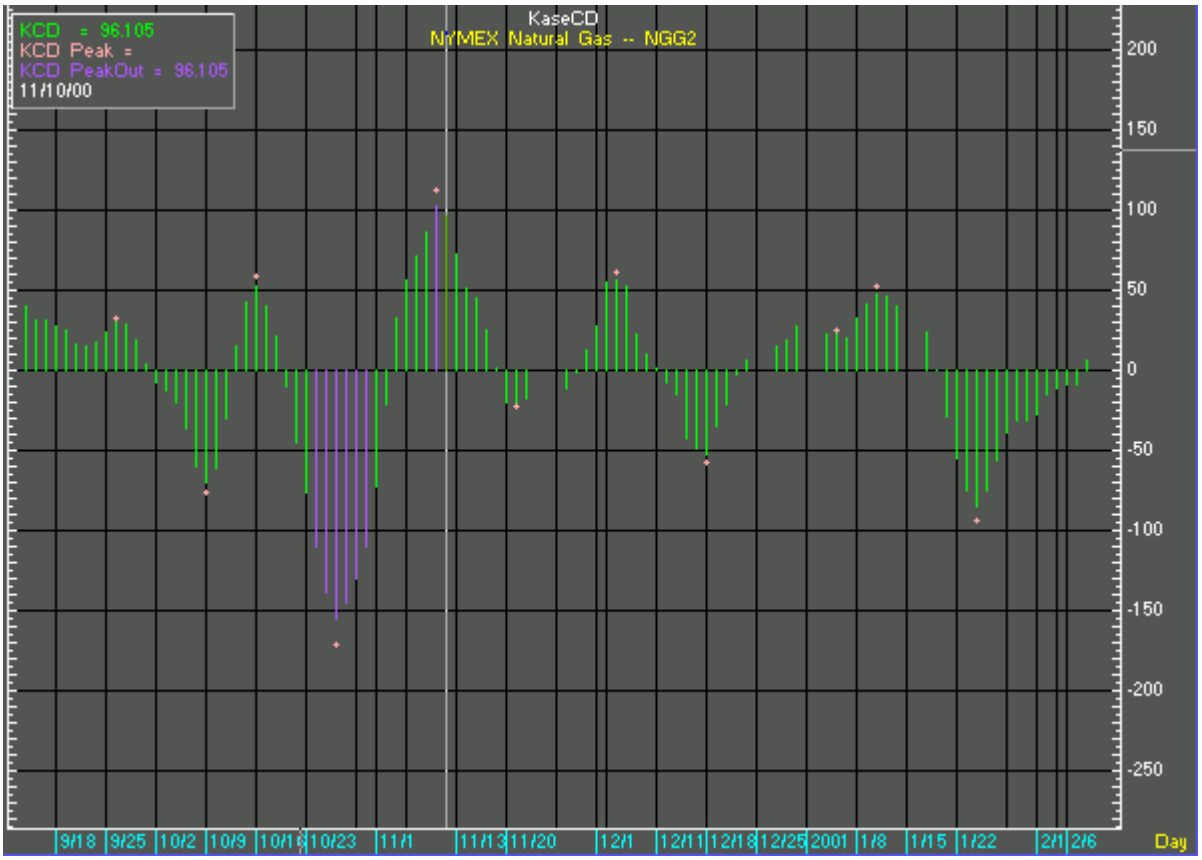

FIGURE 11 KaseCD Momentum Indicator

5.3.1 KaseCD Parameters

The KaseCD study for Aspen Graphics utilizes proprietary formulas to establish histogram-based market indicators. Four of the five study elements may be altered to produce a highly customized result.

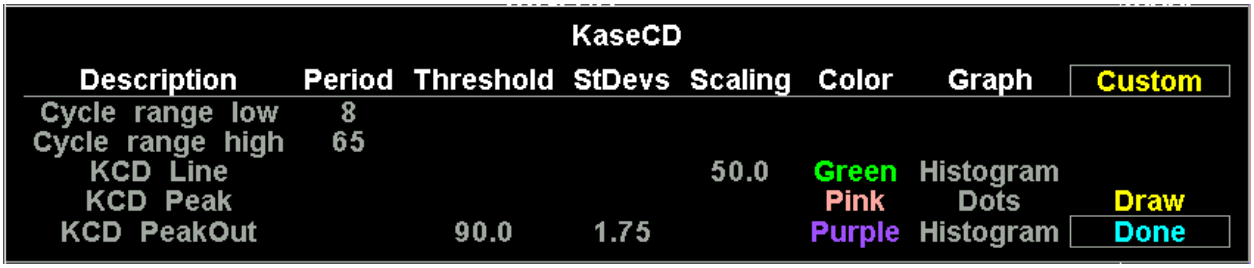

FIGURE 12 KaseCD Parameter Dialog

Field	Function
Description	The description field lists the available study elements. There are five study elements in the KaseCD study. Two elements are study variables: Cycle Range Low Cycle Range High Three elements are rendered indicators: KCD Line KCD Peak

Field	Function
	KCD PeakOut
Period	Indicates the number of bars used to calculate the standard deviations for each variable used in the KaseCD indicator. Defaults: Cycle Range Low – 8 Cycle Range High – 65
Threshold	Specifies the adjustment to the study calculation. The formula threshold compensates for significant price gaps using the specified percentage. Defaults: KCD PeakOut – 90.0
StDevs	Indicates the multiplier of the Standard Deviation for each KaseCD indicator. Defaults: KCD PeakOut – 1.75
Scaling	Indicates the price element (High, Low, Open, Close) used to calculate the Kase DevStop study. Defaults: KCD Line – 50.0
Color	Indicates the color in which the respective study element is rendered. Defaults: KCD Line – Green KCD Peak – Pink KCD PeakOut – Purple
Graph	Indicates the rendering method for the respective study element. Defaults: KCD Line – Histogram KCD Peak – Dots KCD PeakOut – Histogram

TABLE 5 KaseCD Parameters

6. KASE FILTERING

Kase Analysis for Aspen Graphics includes a filtering system called the Permission Screen based on the popular Kase Stochastic. The Kase Permission Screen generates a higher time frame filter "permission long" or "permission short." Whenever a signal is generated one can easily know the status of the longer time frame filter.

6.1 Kase Permission Screen

The Kase Permission Screen applies the rules for the Permission Stochastic and displays them in a simple color histogram.

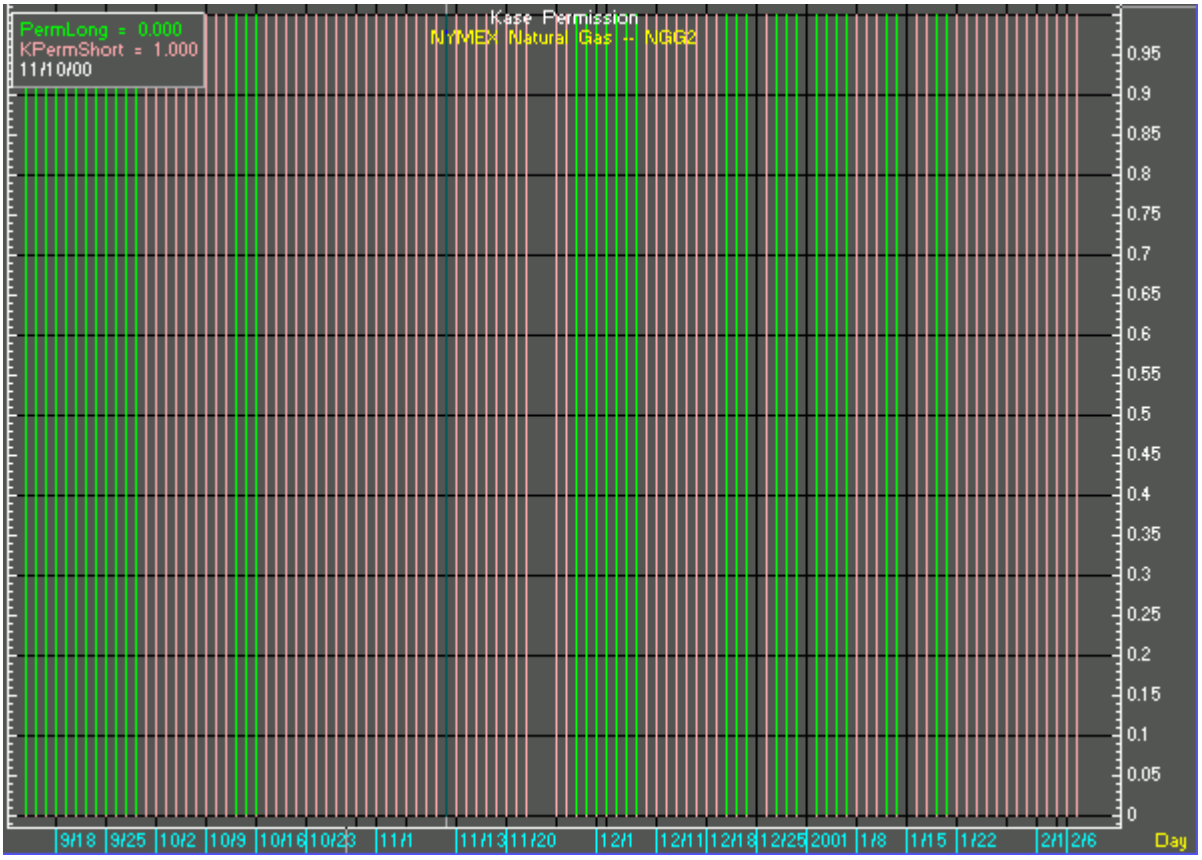

FIGURE 13 Kase Permission Screen Filter

If the histogram is green, a permission long exists, which means you can take any long trades generated short term. If the histogram is red, a permission short exists, which means you can take any short trades generated short term.

The Kase Permission Screen is designed for use in spread trading. To apply the study, plot it against the instruments in a spread. Where the Kase Permission studies are in opposition, long on the instrument that yields green, and short on the instrument that yields red.

6.1.1 Kase Permission Parameters

The Kase Permission filter is designed with simplicity in mind. Therefore, the parameters for this study are correspondingly simple.

FIGURE 14 Kase Permission Default Parameters

Field	Function
Description	The description field lists the available study elements. There are four study elements in the Kase Permission filter. Two elements are study variables: Period Multiplier Two elements are rendered indicators: Perm Long Perm Short
Period	Indicates the number of bars used to calculate the standard deviations for each variable used in the Kase Permission filter. Defaults: Period – 9 Multiplier – 5
Color	Indicates the color in which the respective study element is rendered. Defaults: Perm Long – Green Perm Short – Pink
Graph	Indicates the rendering method for the respective study element. Defaults: Perm Long – Histogram Perm Short – Histogram

TABLE 6 Kase Permission Filter Parameters

6.2 Kase Permission Stochastic

The Kase Permission Stochastic validates trades. Trades taken in the direction of a major trend tend to be more successful than trades taken against the trend. Long positions are indicated when KPermK is greater than KpermD in the Permission Stochastic. The converse applies to short positions.

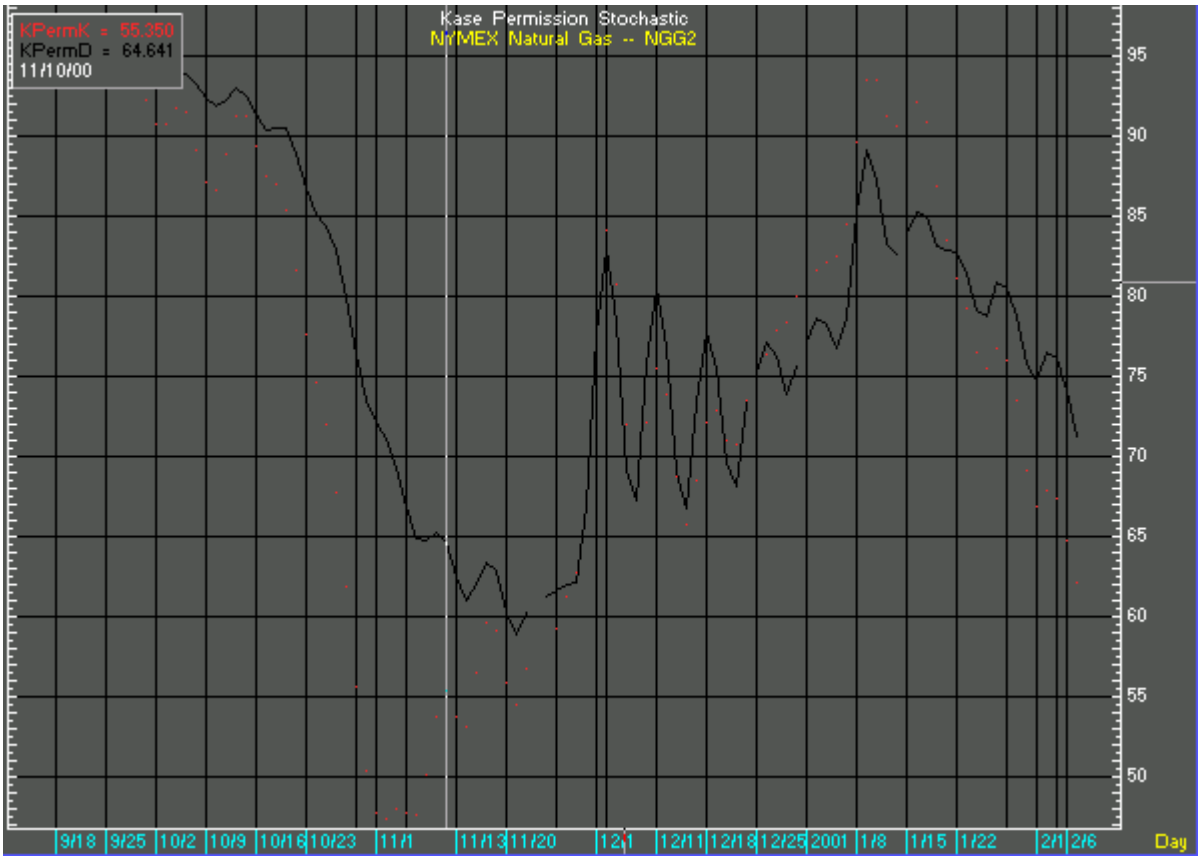

FIGURE 15 Kase Permission Stochastic Filter

6.2.1 Kase Permission Stochastic Parameters

The Kase Permission Stochastic is designed to validate trading positions via an easy to understand indicator. Therefore, the parameters for this stochastic are correspondingly simple.

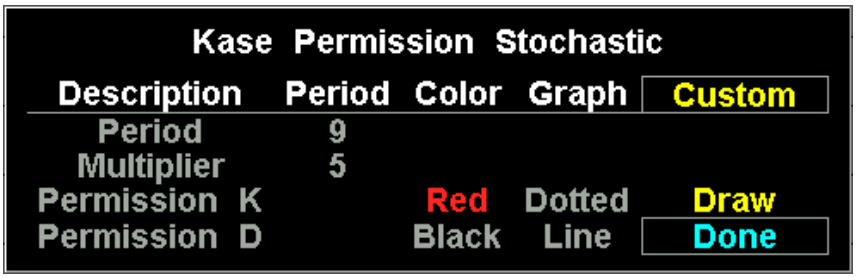

FIGURE 16 Kase Permission Stochastic Parameters

Field	Function
Description	The description field lists the available study elements. There are four study elements in the Kase Permission Stochastic. Two elements are study variables: Period Multiplier Two elements are rendered indicators: Permission K Permission D

Field	Function
Period	Indicates the number of bars used to calculate the standard deviations for each variable used in the Kase Permission Stochastic. Defaults: Period – 9 Multiplier – 5
Color	Indicates the color in which the respective study element is rendered. Defaults: Permission K – Red Permission D – Black
Graph	Indicates the rendering method for the respective study element. Defaults: Permission K – Dotted Permission D – Line

TABLE 7 Kase Permission Stochastic Parameters

6.3 Kase Stop Amount

The final study in Aspen's Kase package is a rigorous exit system. This stop system finds the optimal statistical balance between letting profits run, while cutting losses. Kase Stop Amount seeks an ideal stop level by accounting for volatility (risk), the variance in volatility (the change in volatility from bar to bar), and volatility skew (the propensity for volatility to occasionally spike incorrectly).

Kase Stop Amounts are set at points at which there is an increasing probability of reversal against the trend being statistically significant based on the log normal shape of the range curve. Setting stops will help you take as much risk as necessary to stay in a good position, but not more.

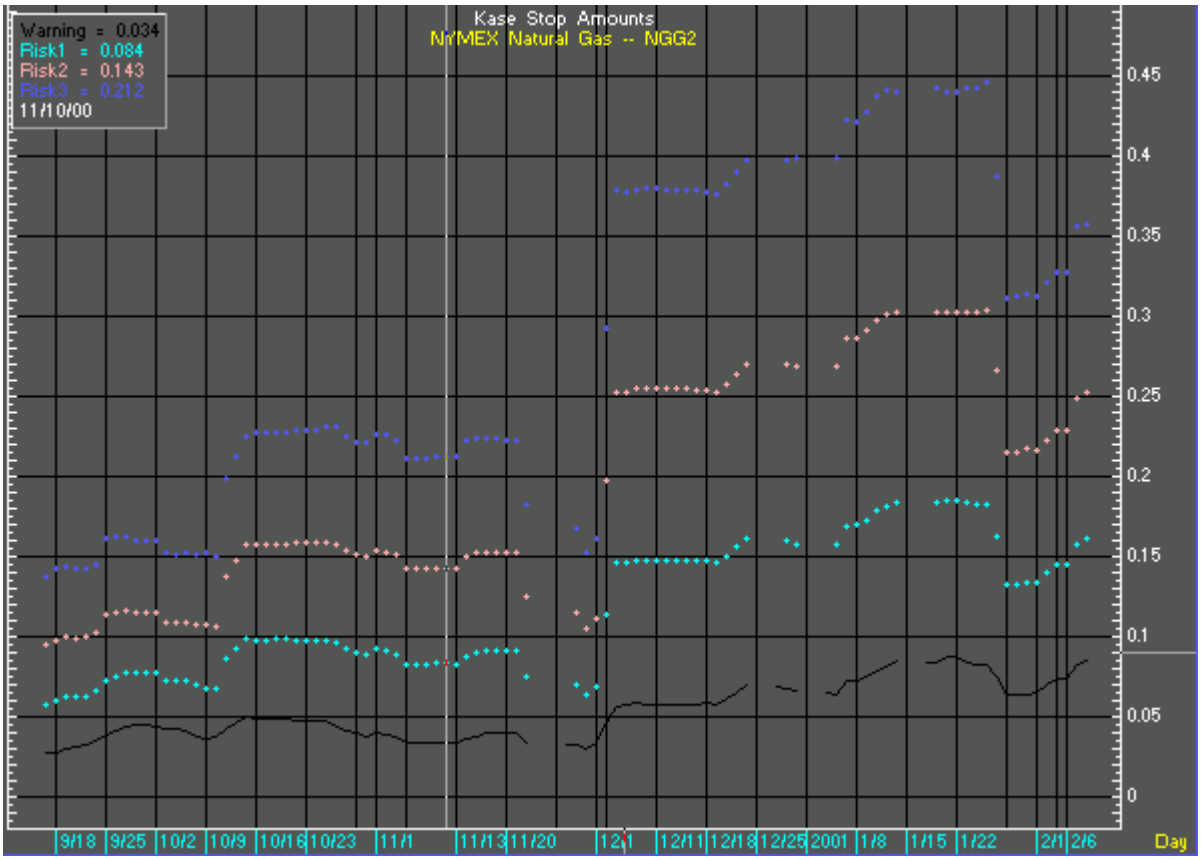

FIGURE 17 Kase Stop Points

6.3.1 Kase Stop Point Parameters

The Kase Stop Point study for Aspen Graphics utilizes proprietary formulas to establish market indicators. While the formula can not be changed, subscribers are able to alter five of the study variables in order to customize the Stop Point signals.

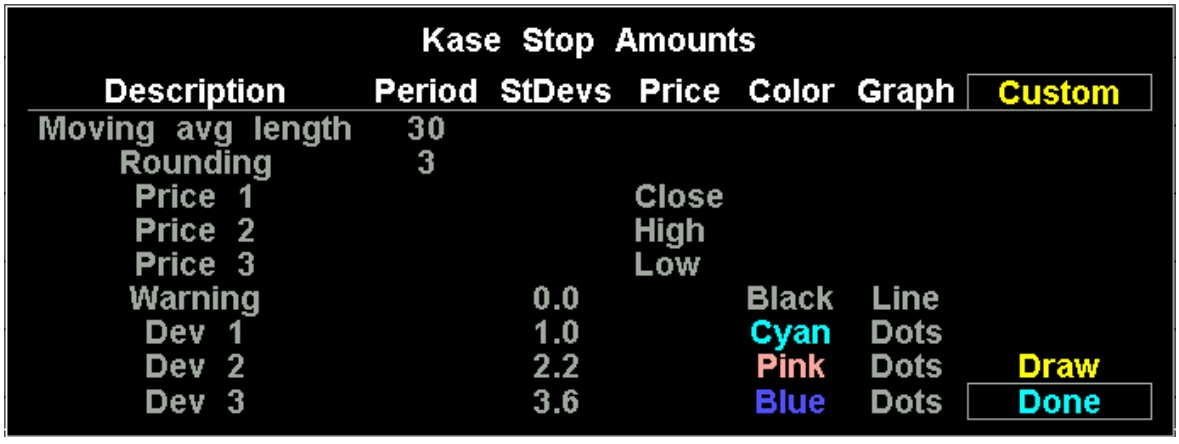

FIGURE 18 Kase Stop Point Default Parameters (this will change)

Field	Function
Description	The description field lists the available study elements. There are nine study elements in the Kase Stop Amount indicator. Five elements are study variables:

Field	Function
	Moving Avg. Length Rounding Price 1 Price 2 Price 3 Four elements are rendered: Warning Risk 1 Risk 2 Risk 3
Period	Indicates the number of bars used to calculate the standard deviations for each variable used in the Stop Amount indicator. Defaults: Moving Avg. Length – 30 Rounding – 3
StDevs	Indicates the multiplier of the Standard Deviation for each Stop Amount indicator. Defaults: Warning – 0.0 Risk 1 – 1.0 Risk 2 – 2.2 Risk 3 – 3.6
Price	Indicates the price element (High, Low, Open, Close) used to calculate the Kase Stop Amount study. Defaults: Price 1 – Close Price 2 – High Price 3 – Low
Color	Indicates the color in which the respective study element is rendered. Defaults: Warning – Black Risk 1 – Cyan Risk 2 – Pink Risk 3 – Blue
Graph	Indicates the rendering method for the respective study element. Defaults: Warning – Line Risk 1 – Dots Risk 2 – Dots Risk 3 – Dots

TABLE 8 Kase Stop Amounts Parameters