

GETTING STARTED WITH IQ CHART

A Guide for Using IQ Chart Version 5.0

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I. Registration – Becoming an IQ Chart Subscriber

Before you can begin using IQ Chart, you must register to be a subscriber.

To register, please go to <http://www.iqchart.com/iqchart/registration>

Complimentary trial periods are available to all new customers.

II. Downloading IQ Chart

IQ Chart is a software application. This means that you must download IQ Chart from our Web site and install it on your computer in order to use the software.

Please download IQ Chart at <http://www.iqchart.com/download/> and save the application.

IQ Chart is currently available for the following operating systems.

- Windows 95, 98, NT, 2000, ME, XP
- Macintosh
- Solaris 2.x
- Linux

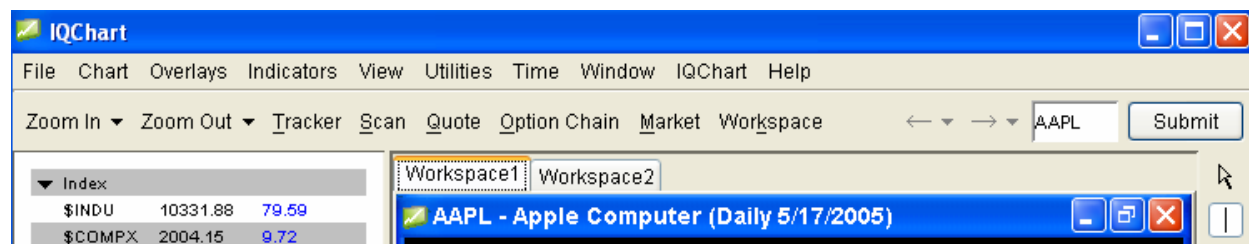
Once download is complete, double click on the application. The installation process will begin, and an IQ Chart icon will be found on the desktop of your computer.

The IQ Chart icon is called “IQ Chart 5”. Double click on the icon to open the software! You’ll be asked to enter the username and password you supplied when registering. If you have not yet registered, see Section I.



III. IQ Chart Menu and Navigation

The IQ Chart menu and navigation system is both powerful and easy-to-use. As shown on the snapshot below, it is found at the top of IQ Chart.



Here is a guide to the main features and functions of the menu system.

Top-Level Navigation

File	Open new windows, printing, export data and close the program.
Chart	Chart properties such as scale, color and font.
Overlays	Add or remove chart overlays like moving averages.
Indicators	Add or remove technical indicators.
View	Open or close the favorites column and toolbox.
Utilities	Misc. features such as ticker search and slide show.
Time	Change the time scale of the chart.
Window	Arrange the windows of IQ Chart.
IQ Chart	Open a browser to http://www.iqchart.com/
Help	Quick links to education portions of http://www.iqchart.com/

Second-Level Navigation

Zoom In	Reduce the number of data points on the chart.
Zoom Out	Add to the number of data points on the chart.
Tracker	Open a portfolio window.
Scan	Open a scan window.
Quote	Open a quote window.
Option Chain	Open an option chain window.
Market	Open a window with general market data.
Workspace	Open an additional workspace

IV. Creating Multiple Windows and Workspaces

The main window in IQ Chart allows multiple customizable workspaces so that you can create your own virtual trading desk! The snapshot of IQ Chart shown below has been customized to show a daily chart of IBM, and option chain of IBM and a portfolio. Instructions are below the snapshot.

Toggle Between Workspaces Option Chain for IBM Portfolio Tracker Stock Chart for IBM Enter Ticker Symbol

The screenshot shows the IQChart application window with the following components:

- Main Window:** IQChart. Menu bar: File, Chart, Overlays, Indicators, View, Utilities, Time, Window, IQChart, Help. Toolbar: Zoom In, Zoom Out, Tracker, Scan, Quote, Option Chain, Market, Workspace. Ticker: AAPL. Submit button.
- Workspace Tabs:** Workspace1, Workspace2.
- AAPL - Option Chain:**
 - Time range: Jul 2005 to Jan 2007.
 - Shaded options denote that symbol is "in the money".
 - Call Options table:
- AAPL - Apple Computer (Daily 5/17/2005):** Daily candlestick chart with a red moving average line. Volume x10,000,000.
- Portfolio Tracker:**
 - File, Portfolio menu.
 - Table with columns: Symbol, Last Trade, Change, % Change, Volume, F.

To create a new workspace, click on “File”, then “New” → “Workspace”.

To view a different workspace, click on the workspace tabs found in the top-left corner.

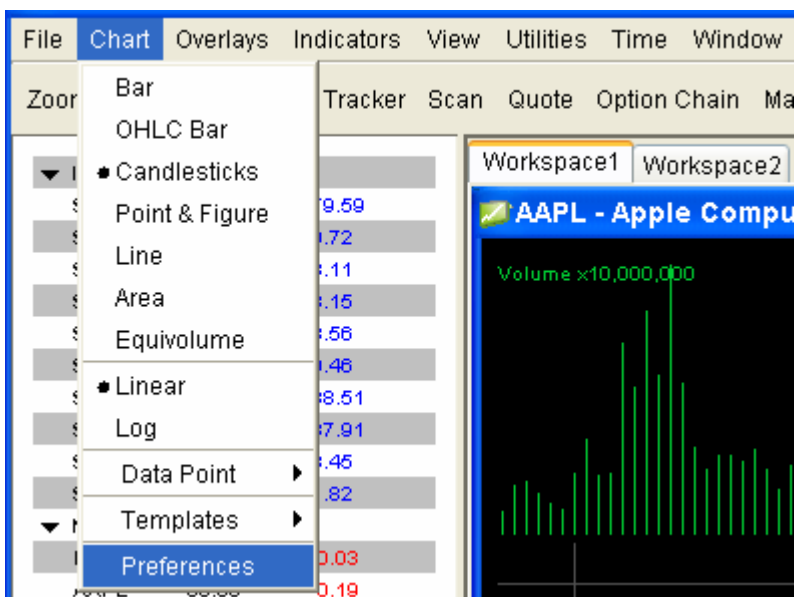
To add a chart window within an existing workspace, click on “File”, then “New” → “Window”.

To add an options chains or tracker window click on these buttons at the top of IQ Chart.

All windows can be minimized, maximized, resized, moved or closed using typical Windows or Mac commands.

V. Chart Properties

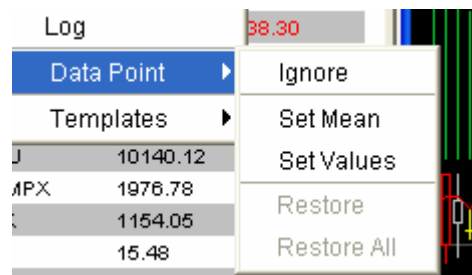
IQ Chart allows you to customize the chart window in many different ways. To alter a chart's properties, simply click on the "Chart" menu of the top-level navigation as seen below.



Current properties are marked with a ♦. The daily chart seen above is a Candlestick chart, and the scale is linear. To change these properties simply select them with your mouse and the chart window will change.

The **Data Point** menu is for correcting data errors that happen from time to time with a real-time datafeed. The example to the right shows a data error.

To select a data error for correction, first highlight that period of the chart with your mouse, and go to the Data Point menu.



Select "Ignore" to remove the data error entirely from the chart.

Select "Set Mean" to set the values of the period in question to the mean of the surrounding values.

Select "Set Values" to set the open, high, low, close and volume on your own.

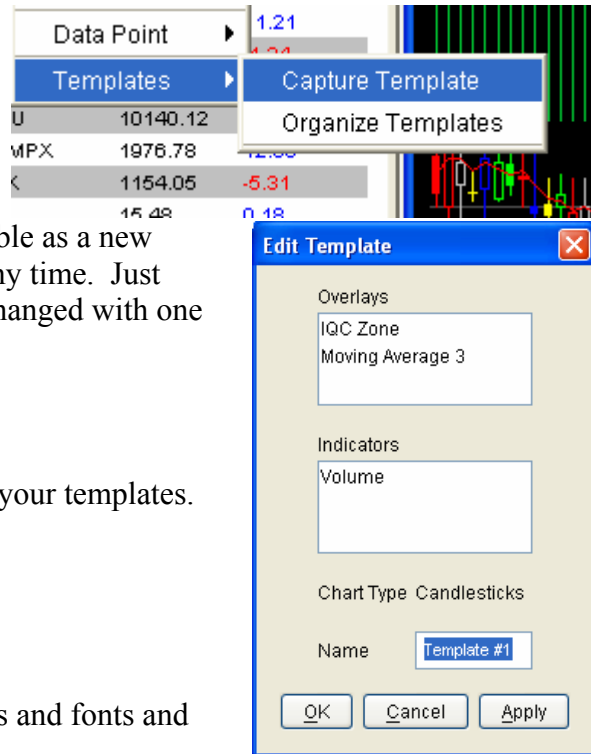
The **Templates** menu is for saving, modifying and selecting different types of settings for the chart window.

Suppose that you were viewing a chart with the “IQC Zone” and “Moving Average 3” overlays, and the “Volume” indicator.

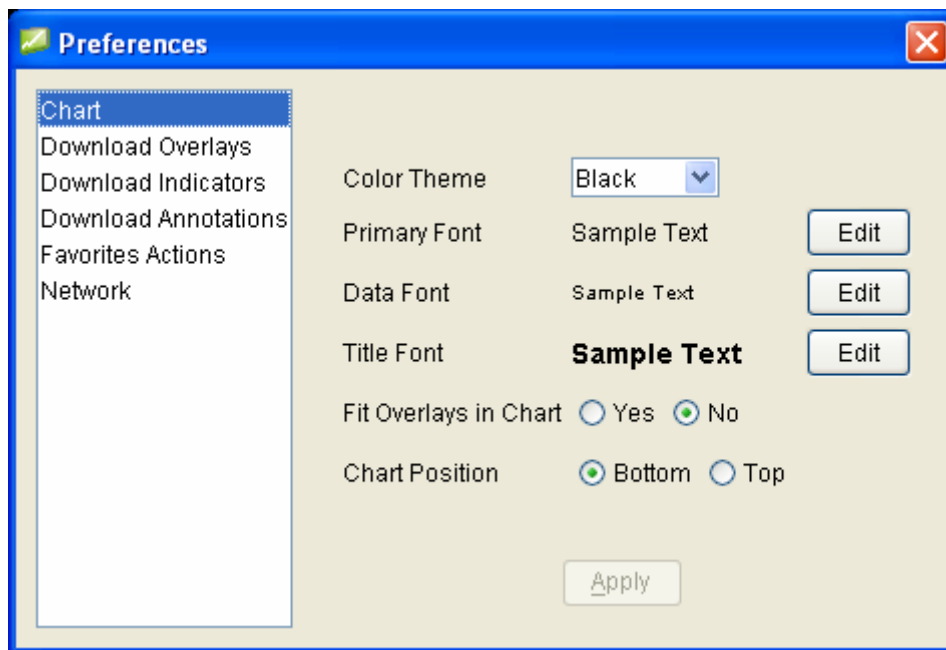
By selecting “Capture Template”, you could save this template, name it and it would be available as a new group of settings within the Templates menu at any time. Just select the template and your chart settings have changed with one click!

Create as many templates as you like!

Select “Organize Templates” to modify or delete your templates.



The **Preferences** menu allows you to select colors and fonts and themes to customize the look & feel of IQ Chart.



VI. *Overlays and Technical Indicators*

IQ Chart has dozens of technical analysis tools to help traders and investors make intelligent and informed decisions on their investment.

The **Overlays** menu contains studies that are superimposed upon the chart, and include tools such as “Moving Averages” and “Bollinger Bands”. Simply select an overlay to add it to the chart or select an existing overlay to remove it.

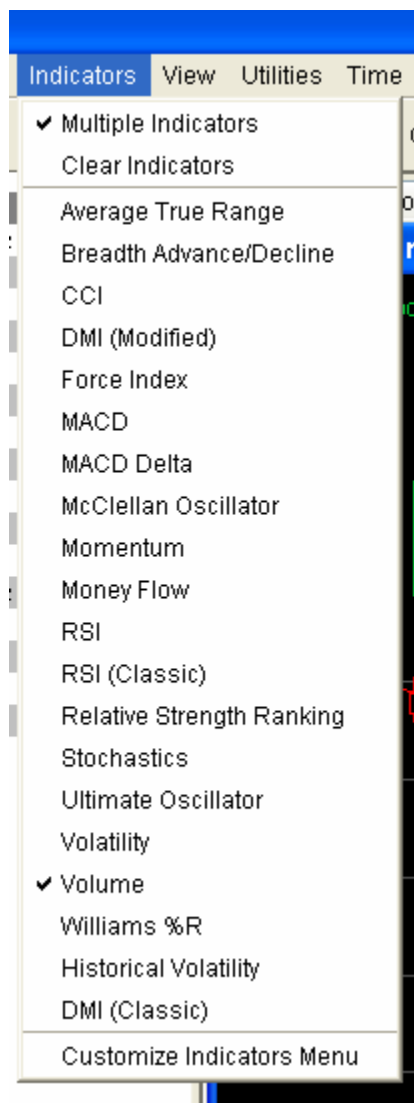
The **Indicators** menu contains studies that are found above the chart, and include tools such as “Volume” and “Stochastics”. Simply select an indicator to add it to the chart or select an existing indicator to remove it.

There are several advanced features that work with Overlays and Indicators.

At the bottom of the Overlays and Indicators menu, you can customize the menu. This allows you to add or remove indicators from the menu for easier selection and organization.

IQ Chart will also be making indicators available for download from time to time. Simply select the download option in the Overlays or Indicators menu to add these indicators to your list.

By right-clicking on a chart, you can change the properties of an overlay or indicator. Examples would be change the period used for moving averages.



VII. Favorites – Setting Up Your Quote Watchlists

The IQ Chart Favorites Column is a customizable, real-time watchlist to help you keep track of stock prices throughout the trading day.

Right-clicking your mouse on the Favorites Column provides several options, including adding a symbol (or more than one symbol) and adding a folder.

To delete a symbol, simply select it with your mouse; then hit the delete button on your keyboard. Or right-click your mouse on the symbol and select that option.

To move a symbol, simply click and drag it with your mouse to a new location.

The Organize button has several features, including

- Adding pre-defined lists of symbols
- Executing real-time scans such as top gainers and losers
- Adding or removing data points, such as % change or trend.

The Update button refreshes all of the values in the favorites column.

To hide the favorites column, select “Favorites” in the “View” menu of the top-level navigation.



VIII. Toolbox – Drawing and Pointing Devices

The IQ Chart Toolbox is found on the right-hand side of the software, and is used for pointing and drawing on the chart.

When a feature is being used, it will appear "indented".

The pointing functions available are Pointer and Cross, and are directly below the "Arrow" symbol.

Pointer: is represented by a vertical line. The pointer isolates a specific period of time with a vertical line. The price and technical information for that period will be displayed at the bottom of the chart window.

Cross: The cross utilizes a vertical and horizontal line to form a crosshair. The period isolated by the vertical line will be displayed on the bottom of the chart window along with the price or technical information targeted by the horizontal line.

The rest of the symbols are drawing functions. In order to use a drawing function, the "Arrow" symbol must be selected.

Horizontal Line: Using this feature forms a horizontal line across the entirety of the chart window.

Gann Fan: This icon looks like an arrow pointing to the bottom-left.

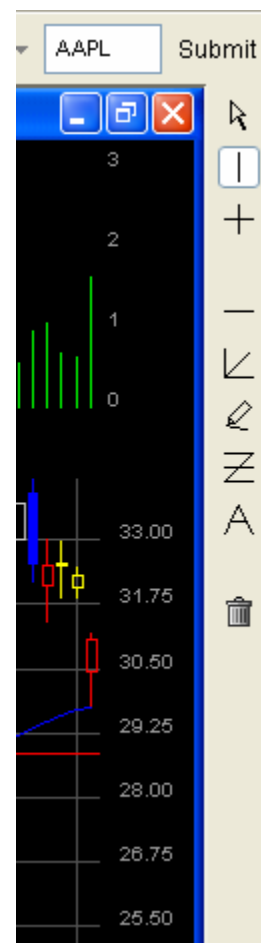
Trendline: This icon looks like a pencil drawing a line, and it allows you to draw a trendline on the chart.

Fibonacci Retracement: This icon is represented by a Z with a horizontal line through the center. When used, this will create a set of five horizontal lines connected by a diagonal line.

Area/Notes: This icon is represented by an A. It highlights an area of the chart, and allows you to enter a text note about the chart.

Move a drawing by clicking and dragging with your mouse.

Delete using the delete key or the "Trash" icon.



XI. Tracker – IQ Chart’s Portfolio Manager

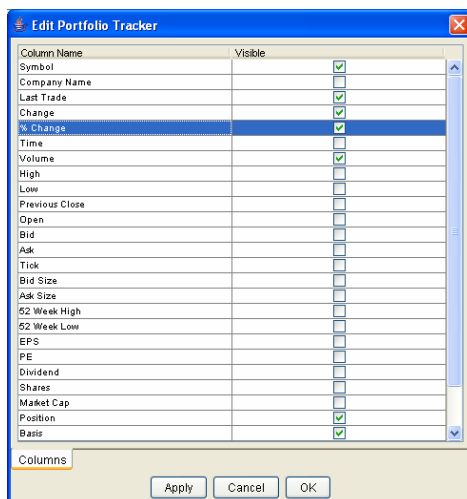
IQ Chart’s portfolio tool is called “Tracker”, and can be opened by clicking on the “Tracker” button in the top-level navigation.

You can create multiple portfolio trackers, and toggle between them using folder functionality as shown below. As opposed to charts, which operate within workspaces, the tracker operates as a separate window. Right-clicking on a portfolio gives a variety of choices for changing the columns tracked or adding/deleting symbols.

Symbol	Last Trade	Change	% Change	Volume	Position	Basis	P/L Today	P/L	Value
GOOG	237.44	4.31	1.85	5,094,688	200	200.00	862.00	7488.00	47488.00
MSFT	25.65	0.19	0.75	24,664,250	300	30.00	57.00	-1305.00	7695.00
IBM	76.02	1.73	2.33	4,523,800	150	40.00	259.95	5403.45	11403.45
WVW	25.40	-0.09	-0.35	87,700	500	25.00	-45.00	200.00	12700.00
Total							1133.95	11786.45	79286.45

When entering symbols, you also have the option of entering a position (number of shares) and the basis (price you purchased it at). To track short sales, enter a negative position. For example, if you are short 200 shares, enter -200.

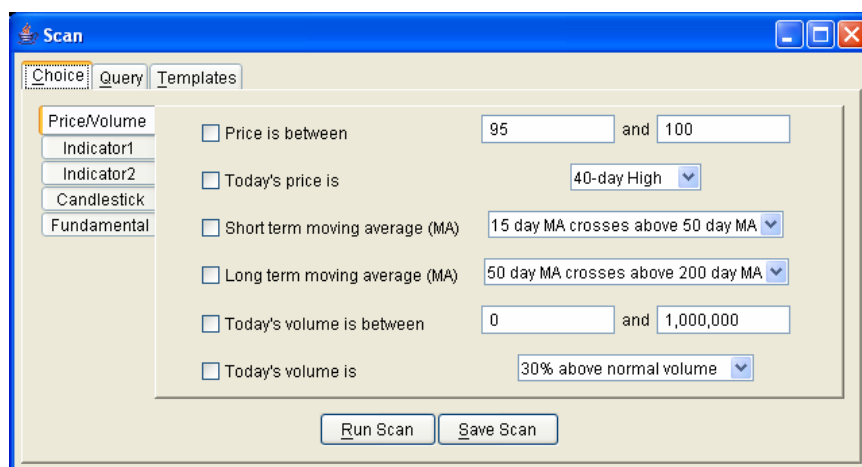
There a number of columns available in the portfolio tracker. To access the full list, simply right-click on the portfolio and select “Preferences”. All checked columns are displayed.



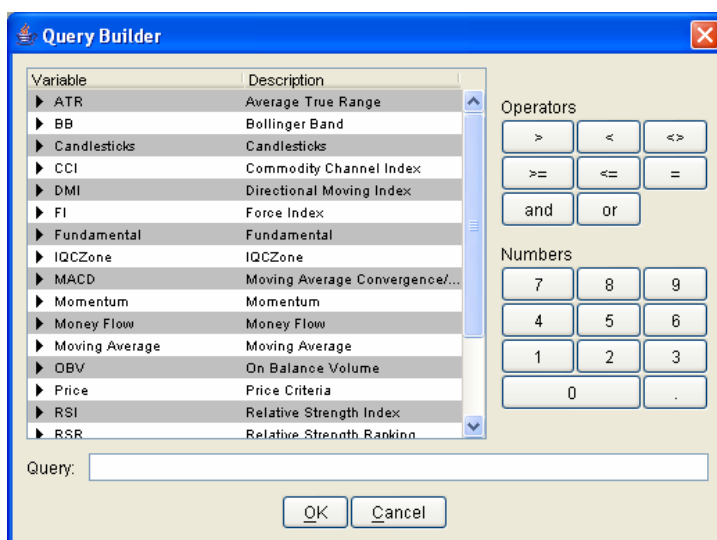
X. Stock Scan – Screening the Markets for Trading Opportunities

IQ Chart's scan function is designed to help an investor find the type of stock he or she is looking for. With over 200 variables to choose from, you can develop your own customized stock screen using price-, volume-, technical-, fundamental- and candlestick- based criteria. The scan function is located at the "Scan" button across the top of IQ Chart.

The **Choice Folder** allows you to choose among predefined search options. When opened, the Scan folder should show the "Price/Volume" menu. There are four others: Indicator 1, Indicator 2, Candlestick & Fundamental.



The **Query Folder** allows you to build more customized scans with a group of over 200 built-in criteria. This is an advanced feature, and more information on how to use this feature can be found at http://www.iqchart.com/support/user_guide/14.asp



XI. Further Questions?

If you have further questions about using IQ Chart, our customer service team is happy to help. Please send e-mail to support@iqchart.com

Appendix A: Chart Overlays and Technical Indicators

This section provides definitions and interpretations for chart overlays and technical indicators found in IQ Chart. This appendix organizes these technical analysis tools in alphabetical order.

Average True Range

Definition:

Average True Range is a measure of volatility, and is measured by taking a moving average of the greatest value of the following:

- The distance between this period's high & low,
- The distance from last period's close to this period's high or
- The distance from last period's close to this period's low

Interpretation:

Like other indicators that measure volatility, the conventional interpretation is for high periods or peaks in ATR to sometimes be considered clues that investors are having a bull vs. bear struggle, perhaps signaling that a top or bottom is approaching.

During low periods or valleys in ATR, some investors consider this a sign of consolidation or sideways periods.

For certain volatility studies (because the value of Average True Range is expressed as an average of the distance between two prices rather than a percentage), the value of the ATR should not only be considered relative to itself, but also relative to the price of the stock.

In other words, a change in ATR value from 2 to 3 for a \$15 stock represents a move of Price/ATR from 13% to 20%. A change in ATR value from 2 to 3 on a \$50 stock represents a move of Price/ATR from 4% to 6%.

The typical moving average used for Average True Range is 14, which matches the default value in IQ Chart. A higher moving average might be used for long-term study while a shorter moving average can be used for very short-term study.

Bollinger Bands

Definition:

Investors use trading bands, lines drawn above and below the moving average, to isolate a range of prices for a given security, based on the concept that a stock generally trades within a predictable range on either side of the moving average. When a stock is near the upper or lower limits of the trading bands is when an investor should pay closest attention, according to conventional wisdom.

Bollinger Bands are considered some of the most useful bands in technical analysis, for they vary in distance from the moving average of a security's price based on the security's volatility. During periods of increased fluctuation, the bands widen to take this into account, and when the fluctuation decreases, the bands are tapered for a narrower focus to the price range. The upper band is the standard deviation multiplied by a given factor above the simple moving average, and the lower band is the standard deviation multiplied by the same given factor below.

Interpretation:

The standard interpretation is that Bollinger Bands do not give absolute buy and sell signals, but instead indicate whether the price is relatively high or low, allowing for more informed confirmation with other technical indicators.

Bollinger Bands are typically drawn two standard deviations from a twenty day simple moving average for intermediate-term analysis, ten day for short term with 1.5 standard deviations, and fifty for long-term studies with 2.5 standard deviations. According to John Bollinger, for the most accurate average "choose one that provides support to the correction of the first move up off a bottom. If the average is penetrated by the correction, then the average is too short. If, in turn, the correction falls short of the average, then the average is too long. An average that is correctly chosen will provide support far more often than it is broken." Mr. Bollinger also contends that:

- Sharp moves tend to occur after the bands tighten to the average, when a stock is less volatile. The greater the period of less volatility, the higher the propensity for a price breakout.
- When the price hits the upper or lower bands, it is suggested to confirm with other indicators whether that price movement shows strength or weakness, respectively, which could indicate a continuation. If indicators do not confirm this movement, it can suggest a reversal.
- Tops or bottoms made outside the bands, followed by the same inside the bands, indicate a trend reversal.
- A move originating at one band tends to go to the other band.

Breadth Advance/Decline

Definition:

The Breadth Advance/Decline is a market breadth indicator developed by Martin Zweig. It is an indicator designed to track the momentum of the broader market and anticipate large upswings or downswings in price. This is based on the concept that the number of advancing securities accompanying a market rise is positively correlated with the probability for further advances. Likewise, the number of declining issues pushing the market downward can be correlated with the probability for further declines.

The Breadth Advance/Decline is calculated by taking the 10 day simple moving average of the number of advancing issues and dividing that number by the sum of the total amount of advancing issues and the total amount of declining issues on the New York Stock Exchange. The neutral point of the Breadth Advance/Decline indicator is .500 in a range of zero to one.

Interpretation:

There are several common modes of interpretation for Breadth Advance/Decline.

One type of interpretation involves extremely bullish or bearish behavior. When the Breadth Advance/Decline goes above .66, it can be considered very bullish conditions. If it falls below, .37, it can be considered very bearish conditions. Other indicators can verify whether these conditions warrant an overbought/oversold market or whether the market will continue in its current trend.

A second type of interpretation involves the rapidity of a rise or decline in the indicator. A rapid decline (defined as approximately .2 with 10 days) can indicate that the market has shifted from a simply overbought market to one of true weakness, potentially forecasting a prolonged bear market. A steep increase (defined as approximately .2 within 10 days) can indicate that the market has shifted from an oversold market to one of robust strength, potentially forecasting an extended period of strong growth. Remember, the Breadth Advance/Decline studies the entirety of the NYSE, and not individual stocks.

A final type of interpretation involves a crossover of the neutral line.

When the indicator goes from negative to positive (crosses above .500) a bullish climate can be interpreted for the market, and confirmed by other indicators for individual stocks or industries.

When the indicator goes from positive to negative (crosses below .500) a bearish signal can be interpreted for the market, and confirmed by other indicators for individual stocks or industries.

Commodity Channel Index (CCI)

Definition:

The value of the Commodity Channel Index (CCI) is not limited to commodities, and was developed by Donald Lambert as a market timing tool, designed to keep trades neutral in a sideways moving market, and identify entry points when a breakout occurs. Specifically, this oscillator measures how high or low prices are relative to their statistical mean. A high value means prices are relatively high and while a low value means the opposite. An oscillator refers to a momentum or rate-of-change indicator that is usually valued from -1 to +1 or 0% to %100.

The CCI is often best-suited for securities with cyclical patterns, with an optimal period being at least less than 1/3 the number of periods of the cycle.

Interpretation:

The Commodity Channel Index can be interpreted in several different ways, and can be incorporated into many different types of trading schemes or philosophies depending on the type of security and the periods being analyzed.

One interpretation is to use CCI as an overbought/oversold oscillator, meaning that when CCI is in its upper ranges, extending beyond +100, CCI is overbought and a price correction is forthcoming. When CCI is well into its lower ranges, extending below -100, a price rally is approaching.

A second interpretation is that when the CCI breaks into triple digits it will continue a trend.

- When the CCI rises above +100, it is a bullish signal.
- When the CCI dips below -100, it is a bearish signal.

Critics of the indicator say that CCI often misses the early part of the price movement. To overcome this, some traders use signals when the CCI crosses the zero.

- When CCI crosses zero from negative to positive, it is potentially a bullish signal.
- When CCI crosses zero from positive to negative, it is potentially a bearish signal.

A third interpretation is to integrate the two views, and look for divergences as the distinguishing factor. For instance, if the price is breaking new highs, as the CCI is not, the security is potentially oversold, whereas if both are reaching new highs, then an uptrend will possibly ensure. The reverse conditions can hold true when the price reaches new lows over a given period.

Directional Movement Index (DMI)

Definition:

The Directional Movement Index (DMI) is a trend-following indicator developed by J. Welles Wilder, Jr., designed to determine whether a security is in a trending or non-trending market. Since the market is in a strong trend only about 30% of the time and in sideways about 70% of the time, this indicator is used to capture the period when the market shows significant trending or directional behavior.

The calculation of the DMI is fairly complex, and consists of three lines:

- +DI: current positive directional index, the range of highs divided by the price range over the last day and previous close, smoothed over a given number of periods.
- -DI: current negative directional index, the range of lows divided by the price range over the last day and previous close, smoothed over a given number of periods.
- ADX: modified moving average of the difference of +DI and -DI divided by the sum of +DI and -DI, multiplied by 100.

Interpretation:

When the +DI rises above the -DI, it can be considered a signal for an uptrend. When the +DI crosses below the -DI, it can be considered a signal for a downtrend.

According to conventional interpretation, three criteria should be met for a signal to be considered valid in most circumstances.

1. ADX should be rising
2. ADX should be above 50
3. Confirmation from another indicator is encouraged pointing towards strong trending or volatility characteristics.

A more strict interpretation of the Directional Moving Index calls for a fourth criterion to be met. For an uptrend to be valid, the price of the security must rise above the high of the day that the +DI crossed above the -DI. For a downtrend to be valid, the price of the security must dip below the low of the day that the +DI crossed under the -DI.

Fibonacci Retracement

Definition:

Leonardo Fibonacci was a mathematician born in 12th Century Italy. His study of Fibonacci numbers (a sequence of numbers where each number is the sum of the two previous numbers) is often applied by modern technical analysts to find support and resistance in stock charts.

When one Fibonacci number is divided by the next number in the sequence, the result is approximately 62%. When that Fibonacci number is divided by the following number, the result is approximately 38%. These are the key Fibonacci retracement levels.

The principle behind a Fibonacci retracement is that after a stock moves upward or downward, the price will often retrace or correct some of this movement. Many technical analysts believe that the amount of retracement will often correspond to one of the Fibonacci levels. The five horizontal lines represent percentages of 100%, 62%, 50%, 38% and 0% (with 62 and 38 being Fibonacci numbers).

Interpretation:

The Fibonacci Retracement indicator in IQ Chart automatically draws a Fibonacci Retracement between the most recent peak and valley that is at least 10% apart (this percentage can be changed by clicking "Utilities" >> "Parameters" and selecting "Fib Retracement" in the resulting pop-up window.)

This indicator can be useful for identifying support and resistance levels when stocks correct upwards or downwards from a high.

Filtered Wave

Definition:

Filtered Wave automatically draws lines between the top and bottom of a price movement that is at least 10%. This percentage can be changed in IQ Chart by clicking "Utilities" >> "Parameters" and selecting "Filtered Wave" in the resulting pop-up window.

Interpretation:

The Filtered Wave does not have any predictive value in it of itself. However, it is useful in studying the degree of retracements during major price movements and can be used alongside other types of indicators (such as Elliot Wave analysis or Fibonacci Retracements).

The Filtered Wave can also be used as a way of ignoring the "market noise" generated by the daily fluctuations of stocks, only showing the major movements of a stock.

Force Index

Definition:

The ForceIndex indicator relates price to volume by multiplying net change and volume.

ForceIndex is calculated using the following equation:

$$\text{ForceIndex} = \text{Volume}(\text{today}) * (\text{Close}(\text{this period}) - \text{Close}(\text{last period}))$$

ForceIndex is typically presented as two smoothed averages (slow and fast) to reduce the likelihood of false signals.

Interpretation:

ForceIndex is used by some investors as a running total of where money is flowing. Because this indicator multiplies price movement in a period by the volume of that period, the value of ForceIndex will change the most when net change is accompanied by higher relative volume. Investor can use this index to both (a) compare current price movements to past ones and (b) evaluate the current trend.

The periods used are a moving average of the ForceIndex values, which reduces choppiness. Generally, investors use periods which match the length of the trends in which they are studying. The longer-average will be the intermediate or longer-term trend and the shorter-average will be a shorter-term trend. Some conventional interpretations follow:

One interpretation is to look for a confirmation or divergence between ForceIndex and the price. When ForceIndex moves up with price increases or down with price decreases, it can indicate that the current trend is has momentum. When ForceIndex diverges from price, it can indicate that the trend may change.

Another interpretation is to receive signals based on a crossover of the two lines. When the slow line crosses above the fast line and they are both increasing, it can be considered a confirmation of an uptrend. Conversely, when the fast line crosses below the slow line and they are both increasing, it can be seen as confirmation of a downtrend. When a crossover occurs when the lines are going in opposite directions, it can indicate a trend reversal.

Some traders seek to eliminate some false signals by using only the signals which correspond to the direction of the intermediate to long term trends.

Gann Fan:

Definition:

The Gann Fan is a drawing technique found in the Toolbox section of IQ Chart. It draws a series of lines with the centermost line being a 45 degree angle. The additional lines create a “fan” effect. The name Gann Fan comes from W.D. Gann, who studied price charts throughout the first half of the 20th century. Gann believed when price and time move together in lockstep (a 45 degree angle) that there is a balance between price and time.

Interpretation:

Gann lines are typically used as support and resistance lines, similar to trendlines. Any Gann line can be used as support and resistance. Gann Fans are traditionally analyzed on charts with equal time and price intervals.

IQC Zone

Definition:

IQC Zone is a proprietary indicator developed by IQC Corporation, backtested over thirty years of historical data. It utilizes an advanced artificial intelligence (AI) algorithm to generate bullish and bearish signals. There are two zones on the charts: Bullish zone (blue/green) and Bearish zone (red)

Due to the algorithm's complexity, IQC Zone is only available to stocks with history of more than one year. For IPO stocks, there is not enough data to calculate IQC Zone, and the indicator is charted with gray colors until it has been publicly traded for one year's time.

In IQ Chart there is also an IQC Zone Green/Red ratio in the "Market" section of the software. This is a bullish/bearish ratio covering all publicly traded stocks on the NYSE, NASDAQ & AMEX. This can't be found anywhere else.

Interpretation:

IQC Zone is not an absolute buy or sell signal, but can be an important consideration to trading and investment decisions when integrated into an overall trading or investment approach.

Although there are many powerful methods for incorporating IQC Zone into an investment scheme, here are several more conventional interpretations of the indicator:

Market Climate

- IQC Zone can be used to determine the appropriate climate when selecting stocks. If other indicators suggest an entry point while the security is in the bearish zone, one might consider delaying entry. However, if it is firmly within the bullish zone, entry may be warranted. The opposite conditions can hold true for determining a proper exit point.
- Because IQC Zone is calculated at the end of day only, this interpretation is not well-suited for intraday or very short-term trading approaches.
- The IQ Chart Green/Red Ratio found in IQ Chart by clicking on the "Market" button can be used as a bullish/bearish barometer for the entire U.S. market.

Market Timing

IQC Zone can be used as an intermediate-term trend indicator when the color changes.

- When the indicator changes from bearish to bullish, one might consider entering the market when verified with other indicators.
- When the indicator changes from bullish to bearish, one might consider exiting the market when verified with other indicators.

Risk Minimizing

When the color changes under certain circumstances, it may indicate a trend reversal or period of investor uncertainty.

- If the colors are fluctuating rapidly in a short or intermediate time frame, one may consider protecting current profits by standing aside as the market smooths.
- When the indicator turns from a prolonged bullish period to bearish, one may consider closing any open positions until a resumption of the trend or a trend reversal is confirmed.

Keltner Channel:

Definition:

Keltner Channel is often used as an alternative to Bollinger Bands, and is based on the Average True Range.

The Keltner Channel has an upper band, lower band and center band. The center band is simply a moving average. IQ Chart provides the option of using a simple moving average (default) or exponential moving average.

The upper and lower bands take a calculation of the average true range over half the periods used for the moving average, double the value and add or subtract for the upper and lower bands.

Interpretation:

Like most bands or envelopes, prices are expected to remain within the upper and lower bands, and if they trade above or below the bands can represent a trading opportunity.

Many traders do not use these as absolute buy or sell signals, but use them in conjunction with other indicators to make more informed decisions on entering or exiting a position.

Linear Regression

Interpretation:

Investors use trading bands, lines drawn above and below the moving average, to isolate a range of prices for a given security, based on the concept that a stock generally trades within a predictable range on either side of the moving average. When a stock is near the upper or lower limits of the trading bands is when an investor should pay closest attention, according to conventional wisdom.

There are two conventional interpretations for the linear regression line.

The first interpretation is to use the linear regression as the overall trendline for that given period. If the line is positive, it may suggest a buying opportunity, whereas a turn downwards suggests one may consider selling the stock. Price divergences below the line indicate a possible buying opportunity, for the market is oversold, while divergences above the line indicate the market is potentially overbought. Linear regression will work best when the period being studied is similar to the cycle length or typical trend length of the security in question.

A second interpretation is to construct a linear regression channel, consisting of two parallel lines at fixed distances above and below the linear regression line. These lines can be used as support and resistance lines, which are used to watch the battle between buyers and sellers.

Support and resistance lines are drawn as the upper and lower limits of a trading range, whereby the support line is the bottom line, and is the point at which "bulls" will not let the price fall below, and the resistance line is the top line, the point above which the "bears" will not let the price rise above.

Conventionally, a breakout above resistance or below support indicates that there is either a) some news about the company which justifies recreating the upper and lower trading limits or b) there is about to be a correction towards the range as trader's are hesitant about the stock's new value.

Using the Linear Regression Channel can assist in finding support and resistance levels from the Linear Regression.

Moving Average Convergence and Divergence (MACD)

Definition:

Moving Average Convergence and Divergence (MACD) is the difference between a fast exponential moving average (fast EMA) and a slow exponential moving average (slow EMA). The name was derived from the fact that the fast EMA is continually converging towards and diverging away from the slow EMA.

In IQ Chart, we show the difference between the two moving averages (the MACD) plotted as green or blue vertical lines, and a red signal line plotted over the MACD which is a moving average of the MACD line.

Interpretation:

The MACD can be a very helpful technical indicator, and is subject to several conventional interpretations which can all be useful depending on your trading and investment philosophies.

One interpretation is that a positive MACD value is a bullish signal, and a negative MACD value is a bearish signal.

The crossover interpretation posits that the signal line can be used alongside the MACD to determine the appropriate entry and exit point. (The signal line is a moving average of the MACD line). When the MACD falls below its signal line, it can be considered a sell signal. Similarly, a buy signal can be interpreted when the MACD rises above its signal line.

A third popular method of interpretation is that when the MACD is making new highs or lows, and the price is not also making new highs and lows, it signals a possible trend reversal. This type of interpretation is often verified with an overbought/oversold oscillator.

MACD Slope Indicator

The MACD slope indicator is based on the MACD. The MACD slope indicator plots the change in the slope of the MACD signal line. When the slope changes from positive to negative, a red arrow is plotted, possibly indicating prices heading lower. When the slope changes from negative to positive, a green arrow is plotted, possibly indicating higher prices ahead.

McClellan Oscillator

Definition:

The McClellan Oscillator is a technical indicator based on the New York Stock Exchange, not any one particular stock. It is a short term and intermediate term "market breadth" indicator, meaning it is designed to determine the strength of a market trend. This is based on the concept that a robust uptrend or downtrending market is characterized by a large number of stocks advancing or declining moderately, rather than a small number of stocks making large gains or losses.

The McClellan Oscillator is calculated by subtracting a 39-day exponential moving average of the difference between the advancing issues and the declining issues from a 19-day exponential moving average of the difference between the advancing issues and the number of the declining issues in the New York Stock Exchange.

Interpretation:

Volatility has several uses and potential interpretations.

There are two major sets of interpretations for the McClellan Oscillator.

The first interpretation is to use regions to derive bullish and bearish signals. If the Oscillator extends below -100 or above 100, it represents extreme oversold/overbought conditions, and suggests a continuation of the current downtrend or uptrend for a short-to-intermediate period of time, respectively.

If the McClellan Oscillator falls into the -70 to -100 region and turns up, it can be considered bullish. On the other hand, if it rises into the +70 to +100 region and turns down, it can be considered bearish.

The second interpretation is to look at whether the Oscillator is positive or negative.

- When the indicator goes from negative to positive, a bullish signal is generated.
- When the indicator goes from positive to negative, a bearish signal is generated.

Momentum (Rate-Of-Change/ROC)

Definition:

Momentum is a relatively straightforward indicator that measures the rate of change in price as opposed to price itself. It is calculated by subtracting the price of x periods ago from the price now. This indicator can also be referred to as rate-of-change (ROC).

To reduce the choppiness of the indicator, the value given in IQ Chart is a five-period exponential moving average of itself.

Interpretation:

The conventional interpretation is to use momentum as a trend-following indicator. This means that when the indicator peaks and begins to descend, it can be considered a sell signal. The opposite conditions can be interpreted when the indicator bottoms out and begins to rise.

If momentum reaches very high or low values relative to its range historically, a continuation of the current trend is likely, and a change might not be considered until the actual price begins to dip down or rise, respectively.

Money Flow

Definition:

Money Flow is one of the more sophisticated and powerful technical indicators relating price to volume, and is calculated based in each tic during the trading day. The value increases by the shares traded on the level of an uptick, and decreased by the shares traded on the level of a downtick.

Therefore, if there is an uptick on 5,000 shares traded, money flow will increase by 5,000. If there is then a downtick on 600 shares traded, money flow will decrease by 600. If these two trades comprised the entire trading day, price would have ended even for the day, while money flow would have increased by 4,400.

Interpretation:

Signals are generated when there are divergences between the Money Flow and price.

- When price is increasing while money is flowing out of the security, it is a warning of an impending collapse in the price of the stock.
- When the price is trending downward while money is flowing into the security, it is a sign that some savvy buyers are accumulating the stocks.

Moving Average

Definition:

Moving Average (MA) is perhaps the oldest and the most widely used technical indicator. It shows the average value of a security's price over time.

Moving averages can be calculated in a number of ways.

A simple moving average is calculated by adding the prices over a given number of periods, then dividing the sum by the number of periods. For example, a nine-day simple moving average would add together the closing prices for the last nine days, and then divide that number by nine.

An exponential moving average gives more weight to recent prices, and is calculated by applying a percentage of today's closing price to yesterday's moving average. The longer the period of the exponential moving average, the less total weight is applied to the most recent price. The advantage to an exponential average is its ability to pick up on price changes more quickly.

Both IQC.COM and IQ Chart use exponential moving averages.

Moving averages are very flexible, and can be incorporated into most trading and investment philosophies.

One thing to keep in mind is the shorter the time period, the more reactionary a moving average becomes. A 10-day moving average is much more sensitive to moves than a 50-day moving average. However, a shorter period also means that you may have a greater number of false moves within an existing trend, what is considered "market noise" or a "whipsaw".

Moving averages can be used to evaluate trends in both the short-term and long term. A typical short term moving average ranges from 5 to 25 days, an intermediate-term from 25 to 100, and long-term 100 to 250 days.

Formula:

The formula for an exponential moving average is as follows:

Exponential Percentage = $2/(\text{Time Period} + 1)$

Therefore, a 50-day EMA will have a 3.9 % exponential average. $.039 = 2/50 + 1$

This means that the most recent day will be weighted 3.9% of the value of the EMA. For a 50-day simple moving average, each day has precisely a 2% weight.

Interpretation:

There are two major ways moving averages are used.

First, the moving average can be compared to the price. If the price rises above the moving average it can be considered a bullish signal, and if the price dips below the moving average, it can be considered a bearish signal. This "crossover" or "penetration" will not be at the top or bottom, but normally shortly after the price bottoms out or tops out.

Second, longer-term and shorter-term moving averages can be compared to each other, and generate signals when they cross. When a shorter term MA moves across a longer term MA and both slopes go up, it can be considered a bullish signal. When a shorter term MA moves across a longer term MA and both slopes go down, it's can be considered a bearish signal.

On Balance Volume (OBV)

Definition:

On Balance Volume (OBV) relates price to volume, and tries to capture the buying and selling pressure in the market. It assumes that when a security closes up for the day, the number of shares transacted represent buying power. Conversely, the amount of volume on a down day represents selling power.

Therefore, if the price ends up for the day on 10,000 shares traded, OBV's value will increase by 10,000. Should the price decrease on 25,000 shares, OBV's value will decrease by 25,000.

Interpretation:

Proponents of On Balance Volume maintain that trend changes in OBV occur before trend changes in price. Therefore, if OBV is going down over time while price is increasing, a price collapse is possible. If OBV is trending up while price is trending down, the security could be heading for an upswing in price.

Parabolic SAR

Definition:

Parabolic SAR was developed by J. Welles Wilder. It is designed to create exit points for both long and short positions in such a way that it allows for reactions or fluctuations at the beginning of the position, but accelerates upward (for long positions) or downward (for short positions) as the movement tops out.

Parabolic SAR is plotted around the price chart like a moving average or Bollinger Bands. The formula is complex, but is described in great detail in Wilder's book, *New Concepts in Technical Trading Systems*.

Interpretation:

If the price is above the reading for the SAR, one may consider entering a long position (or bullish). The SAR for each day is the exit point under this interpretation. Therefore, if the price falls below the SAR one may consider closing this long position.

If the price is below the reading for the SAR, one may consider entering a short position (or bearish). The SAR for each day would be the exit point under this interpretation (or a possible entry point for a long position.) Therefore, if the price rises above the SAR one may consider closing this short position.

Wilder suggests using this indicator in a trending (or directional) market. If the security is trending up, then one might only take long positions. If the security is trending down, one might only take short positions.

Relative Strength Ranking (RSR)

Definition:

Relative Strength Ranking (RSR) is based on the idea that most successful stocks must rank well as compared to the overall market based on several criteria. RSR measures the performance of a stock based on the past year's worth of data. Relative Strength Ranking is measured on a scale of 0 to 100, where each number can be considered a performance percentile out of all available individual stocks in the market.

Interpretation:

Relative Strength Ranking can be used as part of an overall selection criteria for purchasing new stocks, and as verification for a stock that has limited potential for a major price advance. Many of the biggest price advances in recent history have been for stocks with an RSR topping eighty.

- Choose leading stocks with high RSR.
- Avoid laggard stocks with low RSR.

Relative Strength Index (RSI)

Definition:

Relative Strength Index (RSI), an oscillator introduced by J. Welles Wilder, Jr., could be more appropriately called the internal strength index, for it compares the price of a security relative to itself. The RSI is based upon the difference between the average of the closing price on up days vs. the average closing price on the down days over a given period, and is plotted on a vertical scale of 0 to 100. An oscillator refers to a momentum or rate-of-change indicator that is usually valued from -1 to +1 or 0% to %100.

Wilder advocated a 14-day RSI, although shorter and longer periods have gained popularity when the market exhibits certain characteristics. Generally, RSI is measured in a period between 5 and 25.

RSI is IQ Chart's original method of displaying this indicator. Classic is the conventional calculation of the RSI indicator and is new with version 4.11. RSI is a value calculated with the following equation:

$$\frac{1}{1 + U/D}$$

Where U is the average of upward movement and D is the average of downward movement. RSI Classic uses this calculation.

There are two formulaic differences between RSI Classic and RSI (IQ Chart's original method of displaying this indicator).

- *Whereas RSI classic creates U by (total upward movement/number of up days) and creates D by (total upward movement/number of down days), IQ Chart's formula creates U by (total upward movement) and D by (total downward movement).*
- *RSI Classic uses an exponential moving average of (AvgGain/AvgLoss) where AvgGain = total gain in n periods. N is the rsi period.*

See RSI Classic

Interpretation:

There are several possible interpretations for the Relative Strength Index, any of which can be very powerful depending on the market conditions and trading/investment approach: One interpretation is that buy signals are triggered when RSI is in oversold (20-30) area, potentially meaning that the stock is about to reach its low for this trend, and sell signals are triggered when RSI is in overbought (70-80) area, potentially signaling a market top.

A second mode of interpretation is to look for support and resistance lines or common chart formations such as head and shoulders in the RSI itself, indicating potential reversals that the stock chart may not.

A third mode of interpretation is to recognize divergences in the RSI, such as when the price is moving up when the RSI is moving down or vice versa. This can mean that the price is going to "correct" and move in the direction of the RSI.

A fourth mode of interpretation for the RSI is to view it as a bullish or bearish signal when it crosses 50. When the RSI crosses above 50 it can be considered bullish, and when it crosses below 50 it can be considered bearish.

Relative Strength Index Classic (RSI)

Definition:

Relative Strength Index (RSI), an oscillator introduced by J. Welles Wilder, Jr., could be more appropriately called the internal strength index, for it compares the price of a security relative to itself. The RSI is based upon the difference between the average of the closing price on up days vs. the average closing price on the down days over a given period, and is plotted on a vertical scale of 0 to 100. An oscillator refers to a momentum or rate-of-change indicator that is usually valued from -1 to +1 or 0% to %100.

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See RSI

Interpretation:

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A second mode of interpretation is to look for support and resistance lines or common chart formations such as head and shoulders in the RSI itself, indicating potential reversals that the stock chart may not.

A third mode of interpretation is to recognize divergences in the RSI, such as when the price is moving up when the RSI is moving down or vice versa. This can mean that the price is going to "correct" and move in the direction of the RSI.

A fourth mode of interpretation for the RSI is to view it as a bullish or bearish signal when it crosses 50. When the RSI crosses above 50 it can be considered bullish, and when it crosses below 50 it can be considered bearish.

Stochastics Oscillator

Definition:

The Stochastics oscillator, a popular and dynamic indicator developed by Dr. George Lane, is based on the premise that during an upward trading market, prices tend to close near their high, and during a downward trading market, prices tend to close near their low. Stochastics measures at what point the price of a security is within the entire price range of the security over a given period.

The stochastics indicator is plotted as two lines, %K and %D. The range of the Stochastics is between 0 and 100. With a price range of ten to twenty, ten would be given a 0 designation, fifteen would be at 50, and a price of twenty would be at the 100th percentile. The values of the stochastics calculations are dependent on the parameters given to %K and %D.

There are two types of stochastics: fast stochastics and slow stochastics. When calculating fast stochastics, the raw value of %K is the point at which the current price lies within the historical price range of its given period, and the value of %D is the moving average of %K over a given number of periods.

When calculating slow stochastics, the value of %K slow is the %D-period moving average of the point at which the current price lies within the historical price range of its given period (or raw %K), and the value of %D slow is the moving average of the %K slow over a given number of periods.

IQ Chart and IQC.COM use slow stochastics, which by being smoothed, tend to exhibit less market noise.

An oscillator refers to a momentum or rate-of-change indicator that is usually valued from -1 to +1 or 0% to %100.

Interpretation:

There are several major interpretations for stochastics, which may be more beneficial when combined with other indicators that discern whether a market is in a trending or cyclical rotation mode.

One interpretation (and the one Dr. Lane believes to be most important) is to look for a divergence between %D and the price. An overbought market occurs when %D makes a series of lower highs while the price makes a series of higher highs. An oversold market occurs when the price makes a series of lower lows while %D makes a series of higher lows.

A second interpretation is to receive signals based on a crossover of the two lines. When the %K line rises above the %D line it is considered bullish, and when the %K line falls below the %D line, it is considered bearish. You can eliminate some false signals by using only the signals which correspond to the direction of the intermediate to long term trends.

A third interpretation is that a buy signal is generated when either line dips below and then rises above 20, and a bearish signal is generated when either line rises above and then dips below 80.

Many investors combine several of these interpretations as a major criterion used for making trading decisions.

Tirone Levels:

Definition:

Tirone Levels were developed by John Tirone, and are used as a technical analysis tool to locate support and resistance.

Tirone Levels are represented by three horizontal lines, referred to as the top line, center line and bottom line. The data used to calculate Tirone is based on the high and low over the entire date range available for display within your chart window.

The top line is calculated as follows:

$$High - [(High - Low) / 3]$$

The center line is calculated as follows:

$$Low + [(High - Low) / 2]$$

The bottom line is calculated as follows:

$$Low + [(High - Low) / 3]$$

Interpretation:

The general interpretation for Tirone Levels is to use them as support and resistance lines. Support levels are those where prospective buyers are expected to view the stock as undervalued and support the stock. Resistance levels are those where prospective sellers are expected to view the stock as overvalued and resist further positive price movement.

Ultimate Oscillator

Definition:

Larry Williams developed the Ultimate Oscillator as a way to account for the problems experienced in most oscillators when used over different lengths of time. Williams' Ultimate Oscillator, therefore, combines three oscillators which represent short, intermediate, and long term market cycles (7, 14, & 28-period). It is expressed as a single line plotted on a vertical range valued between 0 and 100.

An oscillator refers to a momentum or rate-of-change indicator that is usually valued from -1 to +1 or 0% to %100.

Interpretation:

Williams' suggested interpretations must meet fairly rigorous criteria, but can be very powerful in certain market climates and when verified with other indicators.

A first set of signals is generated when there is a divergence between price action and what is seen on the Ultimate Oscillator.

When the price reaches a lower low and is not supported by a lower low of the Ultimate Oscillator, a bullish signal is generated, provided that the Oscillator falls below thirty during this divergence AND the Oscillator then rises above its high during the span of the divergence.

The subsequent uptrend can be ended, according to Williams' interpretation, should the value of the Ultimate Oscillator rise above seventy OR rise above fifty and then dip below forty-five.

When the price reaches a higher high and is not supported by a higher high of the Ultimate Oscillator, a bearish signal is generated, provided that the Oscillator rises above fifty during this divergence AND the Oscillator then falls below its low during the span of the divergence.

The subsequent downtrend can be ended, according to William's interpretation, should the value of the Ultimate Oscillator rise above sixty-five OR fall below thirty.

Up/Down/In/Out

Definition:

Up/Down/In/Out is a chart overlay available on IQ Chart that color-codes individual bars or candlesticks based on price movement. It relates the current high and low price with the previous high and low price.

Up (Green) indicates the current high is higher than the previous high and the current low is higher than the previous low.

Down (Red) indicates the current high is lower than the previous high and the current low is lower than the previous low.

In (Yellow) indicates the current high is lower than the previous high, and the current low is higher than previous low.

Out (Blue) indicates that the current high is higher than the previous high, and the current low is lower than the previous low.

Neutral (Gray/Black) indicates that none of the above conditions were met. This typically happens if the current periods high (or low) is equal to the previous period's high (or low).

(This indicator can not be used at the same time as IQC Zone as both indicators color-code the price bars or candlesticks.)

Interpretation:

There is no specific conventional interpretation for this chart overlay. However, many investors use color-coded bars with other technical indicators and overlays to help evaluate historical patterns and anticipate future direction.

Volatility

Definition:

Volatility is a measure of a stock's tendency to fluctuate over a range of prices during a set period of time. IQ Chart calculates volatility as the annualized standard deviation of the price fluctuation over a given period.

Interpretation:

Volatility has several uses and potential interpretations.

First, the degree of volatility of a particular security can be used to determine whether or not a stock should be considered for selection. Low degrees of volatility can suggest that a stock will tend to stick to its underlying trend while high degrees of volatility can suggest that a stock will move greatly about its trend. This knowledge can be valuable for incorporating into trading and investment strategies in a number of ways, including the likelihood of a price change being a trend change, how price movement is related to industry or market movement, whether a stock is more appropriate for longer-term or shorter-term analysis, and so on.

Second, when a stock tends to have a certain range of volatility over an extended period of time, and then breaks out of the range upward, it can mean that there will be a change in trend. If it breaks out of the range downward, it can mean that the frequency and severity of short-term price swings will decrease as the overall trend establishes itself among investors.

Third, recognizing cycles in volatility can be useful in determining appropriate times to anticipate a price breakout. Many stocks can have cycles with a high degree of regularity. Volatility's tendency to be autocorrelative (meaning that reversals often continue in the new direction) can help create circumstances to be a powerful leading indicator.

Finally, volatility can be used to calculate the theoretical option value.

Volume and Volume Average

Definition:

Volume is the total number of shares of transacted during a specified period. Although this is a rather basic indicator, volume can provide some very powerful clues to anticipate price behavior.

In IQ Chart, you can color-code the volume to more easily see which periods the price went up or down. Depending on your background color, blue/green indicates an up period, red indicates a down period and gray/black indicates an even period. **To turn on color-coding**, go to "Utilities" >> "Parameters" and select "Volume".

In IQ Chart you can overlay a volume average over the volume bars. **To activate the volume average and select its period**, go to "Utilities" >> "Parameters" and select "Volume Average".

Interpretation:

One interpretation for volume can be used to determine the strength of a trend, or confirm the movement of the price. During trending markets, volume tends to be positively correlated with the direction of a trend. In a longer-term upward trend, there will tend to be higher volume as the price goes up and lower volume as the price goes down. During a longer-term downward trend, there will tend to be higher volume as the price goes down and lower volume as the price goes up. If these characteristics are not exhibited, it can potentially signal the changing of the overall trend. This analysis can also be done on shorter and intermediate trends with certain characteristics.

During sideways markets, a higher level of volume can mean that the price will break out of that trading range.

Prolonged periods of lower volume can indicate high levels of uncertainty about the future direction of the price, often found in sustained sideways markets or market bottoms.

Volume Moving Average

Definition:

Volume Moving Average (VMA) shows the average value of a security's volume over time. IQ Chart uses an Exponential Moving Average. An exponential moving average gives more weight to recent volume and is calculated by applying a percentage of the current period's closing volume to the previous period's moving average. The longer the period of the exponential moving average, the less total weight is applied to the most recent price. The advantage to an exponential average is its ability to pick up on volume changes more quickly.

One factor to keep in mind is the shorter the time period, the more reactionary a moving average becomes. A 10-day moving average is much more sensitive to moves than a 50-day moving average. However, a shorter period also means that you may have a greater number of false moves within an existing trend, what can be considered "market noise" or a "whipsaw".

Formula:

The formula for an exponential moving average is as follows:

$$\text{Exponential Percentage} = 2 / \text{Time Period} + 1$$

Therefore, a 50-day EMA will have a 3.9 % exponential average. $.039 = 2 / 50 + 1$

This means that the most recent day will be weighted 3.9% of the value of the EMA. For a 50-day simple moving average, each day has precisely a 2% weight.

Interpretation:

Crossovers can help indicate the dynamics of future price changes. IQ Chart shows VMAs as an overlay, which provides a reasonable visual picture of a given bar's actual volume compared to its Exponential Moving Averages.

Williams %R

Definition:

The main concept of Williams' %R is "gravitation towards the mean." If within a given time period, the price is near the high end of a period's range, the security tends to be overbought, and is vulnerable for a selloff. Conversely, if the price is near the low end of a period's range a potential rally is could occur due to oversold market conditions.

IQ Chart does not plot Williams' %R as negative numbers, but on a scale of 0 to +100, so as to make its conventional signals in line with other common oscillators and indicators. An oscillator refers to a momentum or rate-of-change indicator that is usually valued from -1 to +1 or 0% to %100.

Interpretation:

If Williams' %R moves above 80, it can be considered a signal of an overbought market. When Williams' %R moves below 20, it can be considered a signal of an oversold market.

While Williams' %R is a very powerful indicator used by many market technicians, the following should be noted when using this indicator. Although %R has some tendencies to be a leading indicator (in other words, to bottom out or peak before the price does), some suggest that one might not consider buying in an oversold market until the price actually begins to turn upwards, or sell in an overbought market until the price actually begins to turn downward. This is due to potentially prolonged overbought/oversold periods. This suggests that %R should be confirmed with other indicators that may be able to distinguish between the two circumstances.

The optimal period for %R is the cycle length of the security, although periods of ten and twenty are also commonly used.