

# Nirvana Systems

## Guppy Multiple Moving Average Package

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### Overview

Daryl Guppy is an equities trader, author, and is well known for his teachings on the use of multiple moving averages. The set up conditions that Mr. Guppy emphasizes are based on convergence and divergence of traders and investors as represented by multiple moving averages. The indicator which he has created to reflect the sentiment of these two camps is called the Guppy Multiple Moving Average (GMMA). “The GMMA is a tool for understanding the nature and character of the trend,” Guppy says. “It does this by tracking the inferred activity of short-term traders – the short-term group of averages – and the inferred activity of longer term investors – the long-term group of averages. It helps the trader to make a better decision about the most appropriate trading tactics to apply to a given trading opportunity.”

The systems and indicators in this package are based on Daryl Guppy’s Multiple Moving Average indicator (GMMA). The GMMA is comprised of two groups of six exponential moving averages (EMA). There is a short-term group (representing traders) of EMA’s and a long-term group (representing investors) of EMA’s. The systems and indicators are designed to take advantage of the behavior that is exhibited between each group of moving averages and also within each group of moving averages. The relationship within each group and the relationship between each group reveal characteristics about any current trend in the price series or lack thereof. The two groups of six EMA’s are; a short-term group comprised of 3, 5, 8, 10, 12 and 15 periods and a long-term group comprised of 30, 35, 40, 45, 50 and 60 periods. While different time periods may be chosen, these are the periods most frequently used and recommended by Daryl Guppy.

“Apart from providing a better understanding of the trend, the GMMA has five applications,” Daryl states. “From the long side it is used to identify:

- Rally opportunities in a downtrend
- High probability trend breakout opportunities
- Trend breakout rebound opportunities following rally and retreat behavior
- Trend entry of temporary price weakness in an underlying strong trend
- Bubble behavior

These same applications can be applied to short side trading.”

Guppy indicates that the multiple moving averages are used to determine if a profitable trade is plausible based on the current chart behavior, and to then use other confirming indicators to trigger a trade. Using the GMMA, traders are able to recognize the opportunity as a short lived rally, potential trend breakout, trend continuation, temporary price weakness, a developing price bubble, or a start of a decline in the uptrend. This information allows the trader to select the most appropriate trade management tools and stop conditions. Therefore, while we have defined trading systems and indicators that attempt to isolate events based on Guppy conditions, the systems themselves are used in conjunction with other systems and techniques for maximum effectiveness.

## **Description**

The Guppy Multiple Moving Average Package will install the following components into OmniTrader:

- 1- GMMA Profile
- 2- GMMA Strategy
- 3- GMMA Model
- 4- GMMA Indicator
- 5- GA Separation Indicator
- 6- GMMA Oscillator Indicator
- 7- GAMS Oscillator Indicator
- 8- GMMAD Indicator
- 9- GMAS System
- 10- GMMAB System

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comprised of 30, 35, 40, 45, 50 and 60 periods. While different time periods may be chosen, these are the periods most frequently used and recommended by Daryl Guppy.

## Indicators

There are three indicators in this package which are based on the groups of moving averages that represent the relationships within and between the two groups of moving averages. The GMMA Indicator is the visual representation of these moving averages. The GMMA Oscillator indicator will use both groups of moving averages and represents the relationship between them. The GA Separation indicator allows you to concentrate on the behavior of only one set of moving averages.

### GMMA Indicator

The GMMA indicator is consists of two groups of exponential moving averages. A short-term group the consists of EMA'S of 3, 5, 8, 10, 12 and 15 periods and a long-term group comprised of 30, 35, 40, 45, 50 and 60 periods. All other information is derived from this indicator.



*The GMMA Indicator plotted on a chart for Micron*

## GA Separation

The GA Separation Indicator takes three exponential moving averages and calculates the sum of the separation between all three EMA's. This indicator was designed to be used as a filter, allowing trades to the vote line only if there if the separation of the averages exceeds a value. In the GMMA Model, we use .38 as the value of separation for the long term group of averages to exceed in order for signals to be passed to the vote line. By filtering on this criteria, we are following one of the fundamental tenets of Daryl Guppy's teaching – that we only take trades when we have long term investor confirmation.



*The GA Separation Filter only allows trades when the separation of the long term averages exceeds a predetermined value (Default=0.38).*

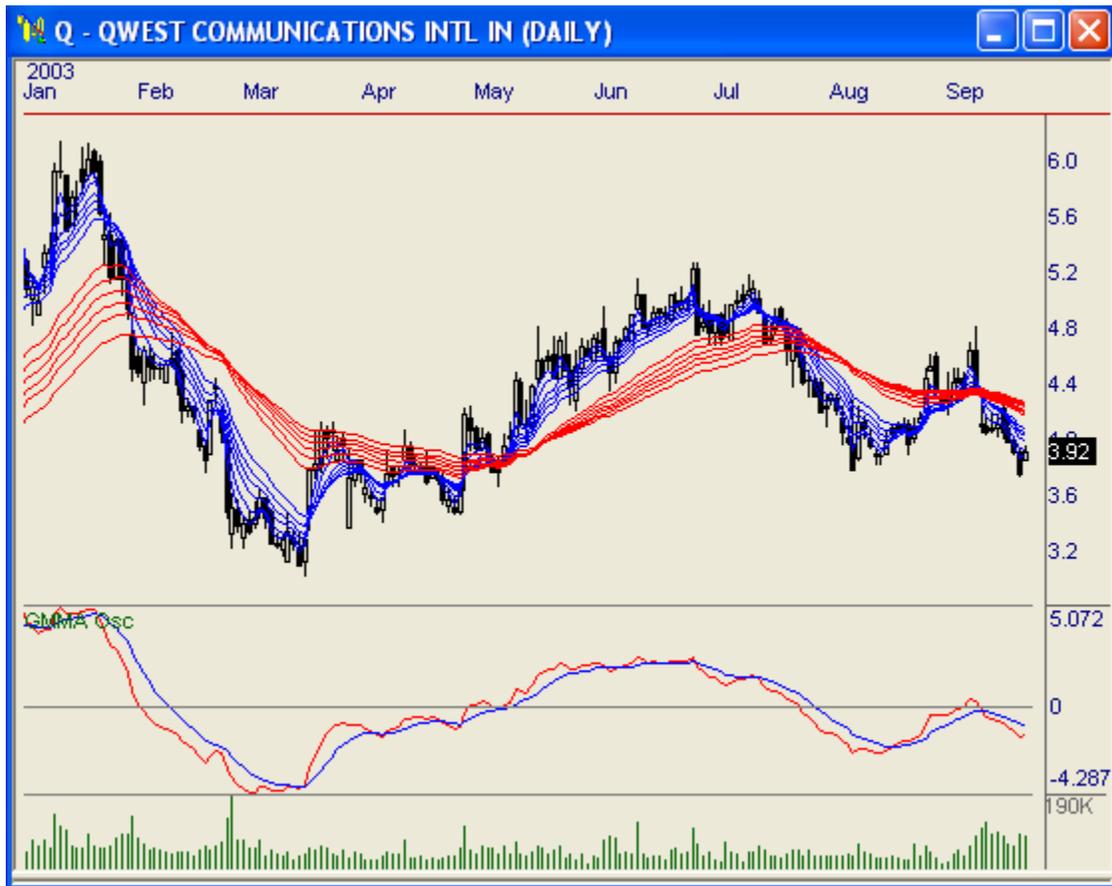
## GMMA Oscillator

An oscillator can be constructed by plotting the difference between the sums of the two groups of moving averages. A signal line will also be generated by additionally smoothing the oscillator value with another moving average (signal line default value of 15 periods). This is analogous to a MACD oscillator, but instead of two moving averages we use two groups of moving averages. This indicator represents the relationship between the two groups of EMA's. A value near zero represents convergence between the two groups. Convergence, or a low value from the oscillator does not necessarily

mean the groups are crossing over, only that they have become close together. They may crossover, as represented by cross of the zero line by the oscillator, or it may just be a pullback in a developing trend. The important information is that they are close together and are agreeing on price. This is the type of setup Guppy looks for, as this agreement on price, whether it is an actual crossover or not, indicates an actionable point. It is up to the user of the indicator to determine what type of action to take, if any.

## Parameters

Period: A smoothing period may be specified and is used to smooth the oscillator values to generate the signal line. [Default=15]



*The GMMA Oscillator plotted on a chart for Qwest Communications*

## GAMS Oscillator

The Guppy Average Maximum Separation (GAMS) oscillator calculates the standard score of the GMMA oscillator against historical values and plots the values in the full area with scale lines for  $-2$ ,  $-1$ ,  $0$ ,  $1$ ,  $2$  standard deviations. This represents the distance between the two groups of EMA's relative to past measurements. If the value is say

above 1, we know that the current reading is greater than 68% of past readings, this gives us relative position of the two groups of EMA's relative to historical behavior.



*The GAMS Oscillator measures the distance between the short and long term moving average groups. It is used in the GAMS System.*

### **GMMAD Oscillator**

The “D” is for delta or difference. An oscillator will be constructed by plotting the sums of the differences of successive EMA's in a group of EMA's. An increasing GMMAD indicates an increasingly positive (bullish) trend, while a declining GMMAD indicates an increasingly negative (bearish) trend. A zero line cross represents a change in trend. As the indicator moves away from zero, the current trend is strengthening in that direction. This oscillator is essentially used to indicate convergence and divergence within a group of MA's. The indicator consists of two lines. The blue line represents oscillator value for the long-term group of moving averages as defined by the GMMA indicator. The red line represents the oscillator value for the short-term group of moving averages as defined by the GMMA indicator.



*The GMMAD Indicator plotted on a chart for Lehman Brothers*

## Systems

Nirvana Systems has created two systems based on the teachings of Guppy. The GMMA Breakout System (GMMAB) and the GAMS System are both used to identify opportunities when the short term group of averages pulls back to the long term group of averages before continuing with the previous trend.

### ***GMMA Breakout System (GMMAB)***

This system will use the GMMA information as a set up and then use the GMMAD of the short-term moving averages to generate signals. This system should address pullbacks in an already trending price series and the points Mr. Guppy makes about trend breakout rebound opportunities following rally and retreat behavior. These signals are best used as setup or confirming information for other systems.

## Parameters

Standard deviation: A standard deviation measure of the long-term component of the GMMAD indicator to determine that the divergence of the long-term group EMA's is greater than a particular number of historical measurements. [Default = 1]

Smoothing: A period used to generate the signal line of the GMMA oscillator. [Default = 15]

ATR Look back: The look back period to use to determine an ATR breakout. [Default=5]

Short-term convergence Standard deviation: standard deviations score that the short-term GMMAD oscillator value must be below. [Default=0.1]

Long-term divergence standard deviation: standard deviations score that the long-term GMMAD oscillator value must be above. [Default=1.0]

## Setup

All of the short-term EMA's are on one side of the long-term EMA's, this is represented by the GMMA oscillator being above / below the zero line.

Short-term convergence as indicated by the low short-term GMMAD value. Long-term divergence as indicated by the long-term GMMAD oscillator value being above a standard deviation score, which represents a separation among the long-term group of moving averages.

## Signals

Long Signal: After the setup conditions (GMMA oscillator being above the zero line), and the GMMAD signifying divergence among the long-term group of EMA's, a breakout to the up side as indicated by a move above the zero line by the short-term moving averages GMMAD indicator.

Short signal: After the setup conditions (GMMA oscillator being below the zero line), and the GMMAD signifying divergence among the long-term group of EMA's, a breakout to the down side as indicated by a move below the zero line by the short-term moving averages GMMAD indicator.

The chart below was created using the GMMA Break system with the settings of: 15 period GMMA oscillator signal line, 3 period ATR look back, 0.1% short term convergence setting – the short term GMMAD value is within 0.1% of price of the zero line, 0.5% long term divergence setting – the long term GMMAD value is 0.5% of price greater than zero. The system is designed to identify pullbacks (represented by the short-term convergence factor) in an existing trend (represented by the long-term divergence factor).



## ***GAMS System***

This system uses the GAMS Oscillator to signify levels to take action at. The levels are specified in standard deviations. Signals are generated on crosses of positive and negative values of the specified standard deviation. So let's say you want the separation between the two groups of averages to be more than 68% of the other past measurements, then you would specify a standard deviation of 1.0. In this example a long would be signaled when the GAMS crosses above 1.0 and shorts when it crosses below -1.0. Additionally I allow the user to specify a negative standard deviation, this has the effect of flipping the signals from inside out to outside in and flips the short signals to the top of the range and the long signals to the bottom of the range. The system is based entirely on the GAMS indicator with no implied relationships.

This system can be used to identify unusual measures of the separation between the two groups of EMA's which represent trading opportunities.

## **Parameters**

Standard Deviation: Specify a standard deviation, its positive and negative values are used as a signal line [Default=1]

Aggressive: A Boolean flag that represents aggressive or conservative use of the system. (0=conservative, 1=aggressive) [Default = 0]

## **Setup**

There is no chart setup for this system. The system is a straightforward interpretation of the GAMS oscillator.

### **Conservative Signals (Aggressive = 0)**

Long signals: Long signals are generated when the value of the GAMS oscillator crosses from below to above the standard deviation.

Short signals: Short signals are generated when the value of the GAMS oscillator crosses from above to below the negative standard deviation.

### **Aggressive Signals (Aggressive = 1)**

Long signals: Long signals are generated when the value of the GAMS oscillator crosses from below to above the negative standard deviation.

Short signals: Short signals are generated when the value of the GAMS oscillator crosses from above to below the standard deviation.

The chart below shows a GAMS oscillator plotted below the price series. Back testing yielded a standard deviation setting of 0.5 and is set to be conservative (Aggressive set to 0). So when the oscillator crosses from below 0.5 to above 0.5 standard deviations, then a long signal is issued, and when the oscillator crosses from above to below  $-0.5$  standard deviations a short signal is generated (as shown in the chart).



*The GAMS System firing after pullbacks to the long term moving averages*

## The GMMA Profile

### Description

The GMMA Profile uses the systems and indicators mentioned earlier in conjunction with OmniTrader's Voting Engine. By combining these elements, we have created the GMMA Strategy, which is the only active strategy in the GMMA Profile. It is meant to signal opportunities in the direction of the primary trend as well as finding confirmed reversal candidates. These opportunities are based on the teachings of Daryl Guppy.

### Overview

The GMMA Strategy forces the GMMAB system, the GAMS system, and the ADX-B system to be considered during the voting process. Since we are looking for trending candidates, some of OmniTrader's systems have been turned off in this strategy if they are constructed to look for sharp reversal candidates. This strategy also makes use of three different filters. Two of the filters are based on the MACD indicator and are applied to only allow signals to the vote line if the short term group of averages are above

the long term group of averages in the case of long signals, and vice versa in the case of short signals. The third filter is based on the GA Separation indicator. This filter requires a minimal amount of separation in the long term group of averages. This method insures that the investors, as defined by Guppy, are in agreement on the direction of the security.



In the chart for EMC, we see two good long signals. Both of these opportunities exhibit the separation in the long term group of averages (red) for confirmation on the short term trend. The second signal in particular shows an excellent trading opportunity as the short term group of averages pulled back in to the long term group of averages before continuing on the upward trend. The composite filter (a visual representation of all filters) below the Vote Line shows that the minimal separation of the long term averages is met just as the security is about to make a new high. This type of behavior in the two groups of averages presents excellent short to medium term trading opportunities.



Our second example shows excellent short and long opportunities over the course of two years for CTXS. This example also shows the effectiveness of the GA Separation filter at the far right edge of the chart. While the short term averages are in a state of flux, the long term averages have converged to where they are almost on top each other. By filtering for minimal separation, we are able to restrict signals from firing while the long term investors are undecided on the securities future direction.

## Conclusion

Nirvana Systems' GMMA systems and indicators were designed in attempt to quantify the teachings of Daryl Guppy. While the results of these components, strategy and the profile in which they are applied will help you isolate good trend trade opportunities, it is recommended that you familiarize yourself with the teachings of Guppy in order to confirm these candidates and improve your trading results. You can learn more about Daryl Guppy, the GMMA Indicator, and his teachings in general by visiting his website at [www.guppytraders.com](http://www.guppytraders.com).

*Nirvana Systems wishes to thank Daryl Guppy for his assistance in creating this package.*