VOLUME FOOTPRINT INDICATOR FOR NINJATRADER

User Guide

1. Overview
The VolumeFootprint indicator is the second major 'market view' indicator written by Final for the NinjaTrader environment. The first, (TPO Chart) offers a complete Market Profile view and has been adopted by many NinjaTrader users interested in applying this well known approach to their trading.

With the addition of VolumeFootprint, NinjaTrader users now have access to a comprehensive set of 'views' for Bid/Ask and volume at price analysis. It can be used on any version of NinjaTrader on any instruments for which intraday Bid/Ask price and volume information is available.

VolumeFootprint can be applied to any intraday interval setting for NinjaTrader chart types Tick, Volume and Minute.

VolumeFootprint has been produced under licence from MarketDelta, the originators of the Footprint Bid/Ask analysis concepts.

Footprint® Copyright 2007 MarketDelta. ALL RIGHT RESERVED

2. Features Overview
VolumeFootprint incorporates the following;

Footprint (volume at price) views;
- Bid/Ask
- Bid/Ask Ladder
- Delta
- Graduated Volume
- Delta Colored Volume
- High/Low Volume
- Volume Histogram

Totals (per bar)
- Ask
- Bid
- Delta
- Max Delta
- Min Delta
- Cumulative Delta
- Cumulative Delta/Cumulative Volume %
- Volume
- Cumulative Volume

Totals (per price per session)
- Volume
- Bid/Ask Histogram
- Price Ladder

Candle Body
- Highlights Open/Close of overall Footprint bar

Action Bar
- A bar which operates independently bar to the right of the current bar to portray immediate price action in two ways in any of the Footprint views

Delta Calculation Type by
- Bid/Ask
- UpTick/DownTick

Trading
- Integrates with Chart Trader allowing direct trading from a Volume Footprint chart for Live Trading Versions of NinjaTrader (on any symbol that has full Bid/Ask price and volume data available)

More detail is provided in Features Description below.

3. Installation, Trial, Subscription
Volume Footprint is available for a 7 day free trial. It can be downloaded from this link
http://www.fin-alg.com/downloads/VolumeFootprint/VolumeFootprint_setup.exe

- Once the download is complete ensure NinjaTrader is closed.
- Double click on VolumeFootprint_setup.exe and follow the prompts.
- When the installation has completed, restart NinjaTrader and check that 'Volume Footprint' appears at or near the top of the Indicators list.
- During the trial a Licence dialog popup will appear to facilitate subscription.
- Subscription requires the Machine ID which can be copied from NinjaTrader; Control Center > Help > About. The Machine ID is on the third line.

4. Important Note
VolumeFootprint operates within the real-time NinjaTrader environment. NinjaTrader does not save price Bid/Ask volume data to its database, therefore this history is not accessible for VolumeFootprint to load. So, VolumeFootprint also functions on real-time data and does not plot any values for historical data. Data will only be captured within VolumeFootprint when NinjaTrader is open and connected to a real-time feed.

This also means that if any chart interval or indicator parameter (except as mentioned below in 6. Features > Selection Methods) is changed, then any accumulated real-time plots will be lost. It is suggested, that after experimentation to get the desired Volume Footprint parameter setup, a template is saved.

5. History - Future
Sometime soon after the next major release of Ninjatrader (v6.5), scheduled for late fall 2007, it **may** be possible that VolumeFootprint will offer limited re-loadable History based on a modified use of the Market Replay Recorder facility.

6. Features Description
Below are descriptions of the VolumeFootprint features.

Delta Calculation
Two methods of Delta calculation are available where Delta = Buy Volume – Sell Volume.

**Bid/Ask** – Delta calculated based on trades occurring at Bid/Ask as follows;

- If trade at Ask then trade direction is up & Volume = Buy.
- If trade at Bid then trade direction is down & Volume = Sell.

UpTick/Down Tick - Delta calculated based on price continuing to tick up or down as follows;

- If Ask > Last Ask then trade direction is up & Volume = Buy.
- If Bid < Last Bid then trade direction is down & Volume = Sell
  Else Volume = last trade direction.

Action Bar
The Action Bar is a bar that operates to a different set of rules to the main bar settings of the chart and is drawn to the right of the last normal chart bar. The Action Bar can be displayed in any of the Views available for the Footprint Bar (these are described below) It has two rule sets as follows;
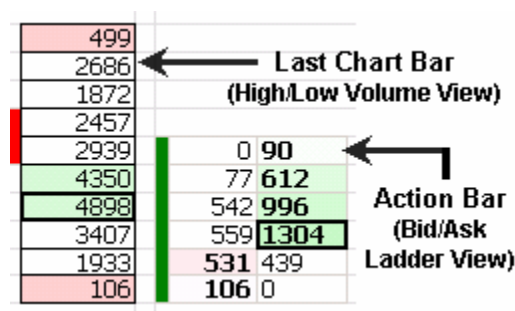
Pullback – in Pullback mode, the Action Bar resets every time the current Footprint bar makes a new high or low. If price continues to tick lower the Action Bar will reset at each new low. Then as price moves off the low the Action Bar will build, so showing the conviction of buyers to drive price away from the low. In this scenario, the Action Bar will continue to build until;
- The low is broken again.
- A new (bar) high is made.
- Or a new bar is started on the chart.
Any of these events will reset the Action Bar.

Continuation Bar – in Continuation mode, the Action Bar will display the last x price levels (default of 5) independently of the current bar. It maintains a constant number of price levels, so if price is ticking up, the Action Bar will move to the new high and drop its previously lowest price. Thus the Action Bar will 'slide' up and down the current bar showing the immediate volume at price action. The Action Bar will continue to build until;

- Price ticks above its current high, then its lowest price will drop.
- Price ticks below its current low, then its highest price will drop.

In Continuation mode the Action does not reset with a new chart bar.

Footprint Views

There are 7 different ways to View the Volume Footprint bar. In each View, individual prices are color graduated based on either higher or lower volume or delta;

Bid x Ask – displays the trades occurring at the Bid and Ask at each price point within the Footprint bar. The Highest Volume price has a heavier box outline.

0	x	499
1581	x	1105
1181	x	691
1438	x	1019
1941	x	998
2039	x	2311
2803	x	2095
1932	x	1475
1437	x	496
106	x	0

Bid/Ask Ladder – displays to the Bid x Ask except more compact and where the side that has the Highest Volume is colored and bolded to highlight it to allow for quick visual identification of directional price runs. The Highest Volume price has a heavier box outline on either the Bid or Ask side of the ladder.

0	**499**
1581	1105
1181	691
1438	1019
1941	998
2039	**2311**
2803	2095
1932	1475
1437	496
106	0

**Delta** – displays the net of Sell – Buy volume transactions at each price. The Highest Delta price has a heavier box outline.

| |
|----:|
| 499 |
| -476 |
| -490 |
| -419 |
| -943 |
| 272 |
| -708 |
| -457 |
| -941 |
| -106 |

Graduated Volume – displays the volume at each price color graduated to allow for easy visual differentiation lower and higher volume prices. The Highest Volume price has a heavier box outline.

499
2686
1872
2457
2939
4350
4898
3407
1933
106

Delta Colored Volume – displays the volume at each price colored graduated by higher or lower Delta. The Highest Volume price has a heavier box outline.

499
2686
1872
2457
2939
4350
4898
3407
1933
106
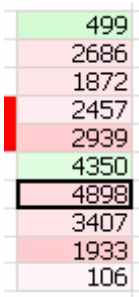
High/Low Volume – displays the volume at each price with just the regions of high(er) and low(er) volume colored. The Highest Volume price has a heavier box outline.

499
2686
1872
2457
2939
4350
4898
3407
1933
106
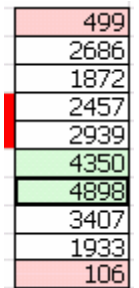
Volume Histogram – displays the volume at each price as a Histogram with coloring graduated by higher or lower Delta. The Highest Volume price has a heavier box outline.
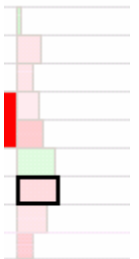
Highest Volume Highlight

For every Action Bar and Footprint bar, regardless of View, the price with the highest volume (or delta for the Delta view) is highlighted with a heavier surround box.
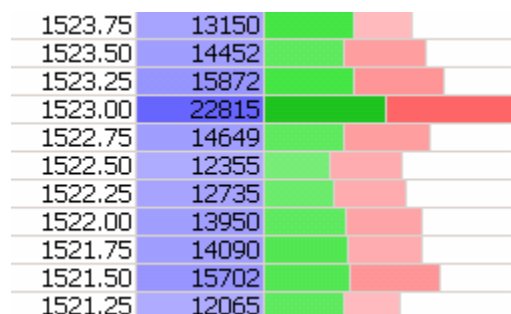
Information Totals

There are two sets of totals displays available within VolumeFootprint, on the left side and at the bottom of the chart.

Left Side – has 3 elements
- Price ladder
- Volume total at each price level
- Volume Histogram with volume at Ask and Bid color splits

Any combination or all of these can be displayed.

Bottom – has 9 elements and displays totals for each Footprint Bar
- Ask – total Ask Volume in the bar.
- Bid – total Bid Volume in the bar.
- Delta – the difference between Ask and Bid volume.
- Max Delta – the maximum Delta reached within the bar.
- Min Delta – the minimum Delta reached within the bar.
- Cum Delta – the accumulation of Delta across the session (as set by either Chart properties or within Parameters > Session Times).
- Cum Delta/Cum Volume – a percentage of the overall Delta across the session.
- Volume – the total volume within the bar.
- Cum Volume – the accumulation of volume across the session.

Any combination or all of these can be displayed. All but Max and Min Delta are also displayed for the Action Bar.

Ask	08	77523	30249
Bid	74	70355	34100
Delta	34	7168	-3851
Max Delta	76	8186	1739
Min Delta	96	-31	-5166
Cum. Delta	26	20894	17043
Cum. Delta/Volume	8%	9.8%	6.1%
Volume	82	147878	64349
Cum. Volume	40	212318	276667

Selection Methods

There 3 ways available to select Action Bar and Footprint View type and the Information Totals;

Parameters – normally these would be used to set up the preferred default views, then saved as a template. Note that changing any indicator parameter will refresh the chart and **all** accumulated Bid/Ask data **will be lost**.
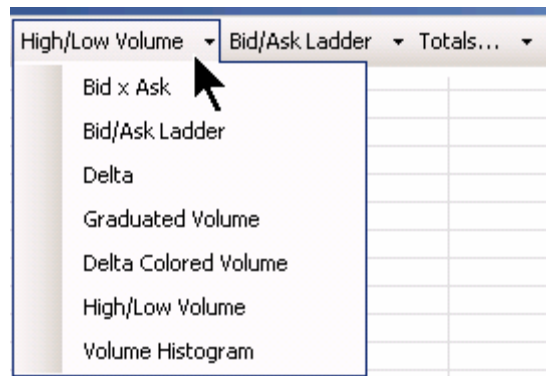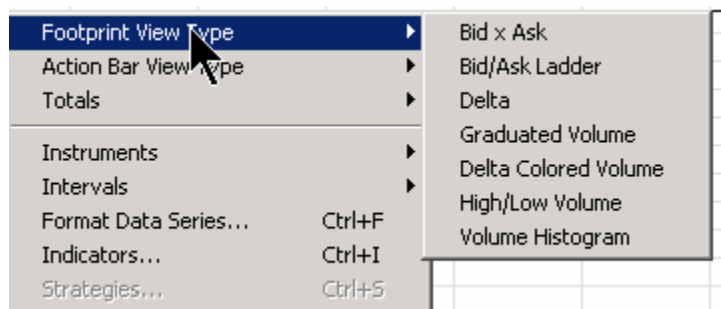
⊟ Action Bar	
Action Bar Default View Type	**BidAskLadder**
Action Bar Type	**Pullback**
Continuation Bar Size	**5**
Show Action Bar	**True**
⊟ Cells	
Delta Calculation Type	**BidAsk**
Prices Per Row (Ticks)	**1**
⊟ Display - Colors	
Candle - Down Color	**Red**
Candle - Up Color	**Green**
Cell Outline Color	**ControlLight**
Footprint - Down Color	**Red**
Footprint - Up Color	**LightGreen**
⊞ Highest Volume/Delta Cell Frame	**Black; 2px**
Totals Area Background Color	**ControlLight**
Volume Color - Graduated & Totals	**Blue**
⊟ Display - Controls	
⊞ Font - General	**Tahoma, 8.75pt**
⊞ Font Bid/Ask Ladder High Volume	**Tahoma, 9pt, style=Bold**
Footprint Default View Type	**BidAskLadder**
⊞ Grid Line Pen	**Gainsboro; 1px**
Plot Candlebars	**True**
Plot Grid Lines	**True**
⊟ General	
Auto scale	**True**
Calculate on bar close	**False**
Displacement	**0**
Display in Data Box	**False**
Label	**Volume Footprint**
Panel	**1**
Price marker(s)	**False**
⊟ Left Area	
Show Price	**True**
Show Tick Total Volume	**True**
Show Volume	**True**
⊟ Session Times	
Override Chart Session	**True**
Session Begins	**23:30:00**
Session Ends	**06:30:00**
⊟ Totals	
Show Ask	**False**
Show Bid	**False**
Show Bid/Ask Tick Histogram	**True**
Show Cumulative Delta	**True**
Show Cumulative Delta/Volume Ratio	**True**
Show Cumulative Volume	**True**
Show Delta	**True**
Show Maximum Delta	**True**
Show Minimum Delta	**True**

Dropdown Menus – 3 menus have been added to the toolbar, the first and second allows View Type selection for the Footprint and Actions bars respectively, while the last allows tick box selection of any or all of the Totals. Note that changing any View or Totals option via the Dropdown menus **does not** refresh the chart and so accumulated Bid/Ask data is **not lost.**

Right Click Chart Context menu – once done three options, Footprint View Type, Action Bar View Type and Totals will be seen at the top of the menu list. Note that changing any View or Totals option via the Context menu **does not** refresh the chart and so accumulated Bid/Ask data is **not lost.**

Note that with either of the second two methods changing the Footprint View will automatically change the Action Bar View as well. Then use the Action Bar menus if a different view is wanted for it.

7. Volume Footprint Parameters

Once the VolumeFootprint has been installed, open a new NinjaTrader chart and select Volume Footprint from the Indicator list. It will appear as Volume Footprint at or near the top of the Indicators List.

Below, the selections under Parameters are (where required) described.

Action Bar

Used to set Action Bar Parameters;

Action Bar Default View – sets the Action Bar default View.
Action Bar Type – sets the Action Bar to either Pullback or Continuation.
Continuation Bar Size – sets the Action Bar height in ticks (Continuation mode only)
Show Action Bar – set to false to disable the bar.

Cells

Used to select Delta calculation type and Prices per row;

Delta Calculation – sets the way Delta is calculated (refer to Features Description above).
Prices Per Row – this would normally be left at 1, however, if a Symbol has an extremely large range, increase the Prices per row to condense it.

Display – Colors

These are self-explanatory.

Display – Controls

These are self-explanatory.

General

Standard NinjaTrader inclusions.

Left Area

Used to select which of left side chart Totals are displayed as defaults.

Session Times

Used (only) to control when the Totals fields reset to begin a new session. The parameter can be used for any symbol that has trading which extends either side of its main session, or has session times that cross a date.
Note this parameter does not override the Session Begins/Ends settings within Chart Properties, nor does it control the bars shown on a chart.

Totals

Used to select which of the bottom of chart Totals are set as defaults.

Once all parameters have been set it is suggested that these are saved as a Template for easy application to other charts.

8. Support

Any support issues and problem reporting can be sent to

financial.algorithms@gmail.com

with Volume Footprint in the subject line.

9. Education

The link below is provide courtesy of MarketDelta. The sections

- MarketDelta® Educational Recordings, and
- MarketDelta® Strategy Recordings

may provide some helpful information on how to interpret and use Volume Footprint.

www.marketdelta.com/newsite/videos.aspx#strategy_recordings

The Institute Of Auction Market Theory provides trading and training room specialising in Market Profile and Volume At Price interpretation and application.

There is also a link on the site to sign up for a free daily market recap for the e-mini S&P 500, which Institute founder Bill Duryea comprehensively describes the days action in Auction Market Theory terms.

www.ioamt.com