

If you are not familiar with market profile concepts, please perform some research before using this indicator as the focus of this document is to explain the usage of the indicator.

The indicators in Version 12 are:

- **Market Profile Combination Pack H.MP3**
Displays the market profile for equity, future, and forex on all trading sessions
- **Market Profile Combination Pack h.InitialBalance**
Displays the initial balance (also called the opening range) of a trading session
- **Market Profile Combination Pack H.MP.PlotR**
Plots the market profile variables in charts of different time-frames or in a RadarScreen in the same or different workspace

There are other indicators in the package, they are older products with lesser functionality and remain in the package for subscribers who already have them inserted in their charts. Any new charts you create must use the indicators listed above to ensure compatibility with TradeStation 9.5 or 10.0.

New In Version 12

Support of minutes interval chart of one minutes and above when Session = "R" or "E" (minimum used to be 10 minutes).

Glossary

Anomaly

A single price or prices that lack symmetry or an unusual structural arrangement in the Market Profile; anomalies may represent structural weakness. The indicator highlights anomalies when the TPO length is one.

Developing Value Area (dVA)

The Value Area as calculated during the trading session. The dVA may change during the session as new trading occurs at different prices. dVAH is the developing value area high, dVAL is the developing value area low.

Naked Point of Control

A POC that was set in a previous trading session that has not yet been retested (the market has not yet traded back to that value).

Point of Control (POC)

This is the longest line of TPOs that is closest to the center of the session range.

Tail

Single prints (TPOs of one character in length) on the top of a profile (a.k.a. selling tail), or at the bottom of a profile (a.k.a. buying tail).

Time Price Opportunity (TPO)

This is the basic building block of the Market Profile. Each bar of the session is designated by a letter (usually the first bar is A). When a certain price is traded during a given bar, the corresponding letter or TPO is recorded next to the price.

Value Area (VA)

The value area is where approximately 70% of a session's trading time is conducted (roughly one standard deviation around the POC).

Value Area High (VAH)

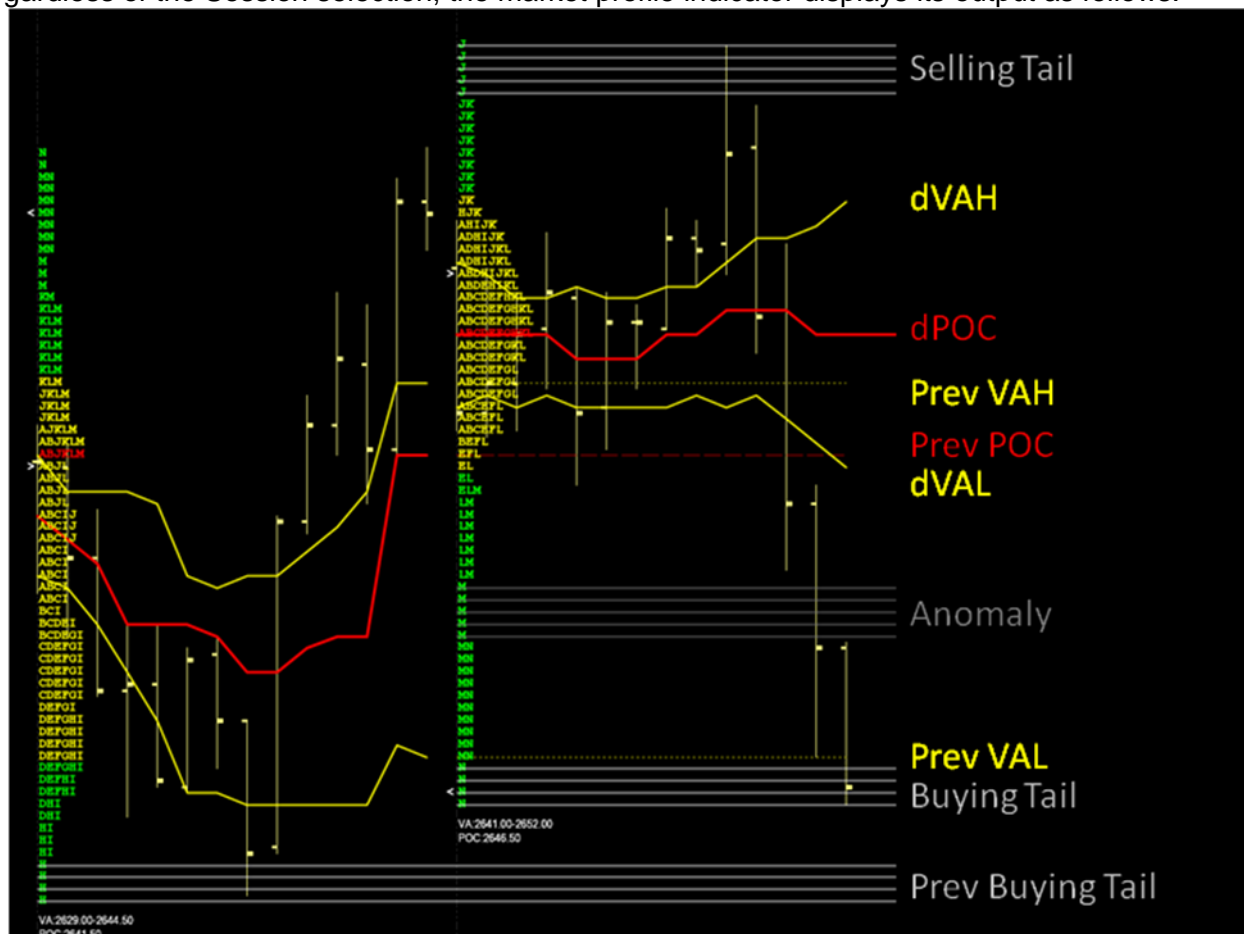
The highest price inside the VA.

Value Area Low (VAL)

The lowest price inside the VA.

Output of the Market Profile Indicator

Regardless of the Session selection, the market profile indicator displays its output as follows:



Each row of characters, the time price opportunity (TPO), contains letters that represent a bar that traded at that price during the session. The TPO string is displayed left aligned on the first bar of the session. The colors shown are the indicator defaults.

- The red TPO is the point of control (POC),
- The yellow TPOs are the value area (VA) for completed sessions or the developing value area (dVA) in the current, active session, and
- The green TPOs represent the remainder of trading (outside of the VA that occurred during the session),
- The ">" and "<" characters represent the session open and close prices respectively, and
- The "VA: xxx-yyy" "POC: zzz" represents the summary statistics of the finished session.

All display characteristics are configurable and are explained in the Indicator Overview section.

Getting Started – Quick Start

This indicator package includes a sample workspace called “Market Profile Combination Pack”.

TradeStation should install the workspace into your default workspace folder. Open that workspace to see a number of chart windows with the indicators installed in various different configuration settings. If you cannot find the workspace or TradeStation did not download it, keep the following points in mind:

- The default colors of the MP indicators were developed for a platform that uses BLACK as the chart background color. If you use a light color background then the default colors may not be visible on your chart. In that case, make sure that you click on “Prompt for Format” when you insert the indicator. Go to the Settings tab and adjust the colors accordingly.
- The default time period of all Market Profile indicators were developed for a platform that uses the Exchange Display time zone of the @ES futures symbol (Central time zone in the USA). If you use a different display time zone for the charted product, or the charted product has different session open and close times, then click on “Prompt for Format” when you insert the indicator. Go to the Inputs tab and adjust the Session_StartTime, Session_EndTime accordingly. Read the “Configuration: Inputs Tab” section for more information.

To start **Market Profile Combination Pack H.MP3** on a new 24 hour continuous index futures chart such as @ES, perform the following steps:

1. Create a new Chart Analysis chart
2. Insert the @es symbol on the chart; make sure the session is “Regular”, the display time zone is set to “Exchange”*
3. Set the chart interval to 30 minutes
4. Insert the H.MP3 Market Profile indicator (turn on “Prompt for Format”). Select the “Input” tab and change Session_EndTime to 1530.

To start **Market Profile Combination Pack H.MP3** on a new “.D” index futures chart such as @ES.D, perform the following steps:

1. Create a new Chart Analysis chart
2. Insert the @es.d symbol on the chart; make sure the session is “Regular”, the display time zone is set to “Exchange”
3. Set the chart interval to 30 minutes
4. Insert the H.MP3 Market Profile indicator.

To start **Market Profile Combination Pack H.MP3** on a new NYSE listed equity such as IBM, perform the following steps:

1. Create a new Chart Analysis chart
2. Insert the IBM symbol on the chart; make sure the session is “Regular”, the display time zone is set to “Exchange”
3. Set the chart interval to 30 minutes
4. Insert the Market Profile indicator (turn on “Prompt for Format”). Select the “Input” tab and change Session_StartTime to 0930 and Session_EndTime to 1600, also set Merge to 0.05 or 0.10

To start **Market Profile Combination Pack H.MP3** on a Foreign Exchange symbol such as EURUSD, perform the following steps:

1. Create a new Chart Analysis chart

2. Insert the EURUSD symbol on the chart; make sure the session is “Regular”, the display time zone is set to “Exchange”
3. Set the chart interval to 30 minutes
4. Insert the Market Profile indicator (turn on “Prompt for Format”). Select the “Input” tab and change Session_StartTime to 1700 and Session_EndTime to 1659, also set Merge to 0.0001

* There is nothing “magic” about Exchange versus Local Time for your charts. The instructions in this document use Exchange time so that the information is correct for all traders regardless of their timezone and country. Should you prefer Local Time then adjust Session_StartTime and Session_EndTime accordingly.

Saving Configuration

As you will read in the following sections, there are several Input Names that can be set by the trader to change the behavior of the indicator. Since this indicator was installed by the TradeStation TradingApp Store, you cannot save the default configuration as you would with the built in indicators (studies). Instead, use the following steps when you have the indicator(s) configured as you prefer to save the configuration of all the indicators inserted in the chart, for future use in different charts by:

1. Right click the chart,
2. Select “Save Analysis Group” (TS 9.5) or “Save Study Group” (TS 10.0),
3. Enter a group name add any notes,
4. Click OK.

Then you Insert Analysis Group (TS 9.5) or Insert Studies Group (TS 10.0) to replicate the indicator configuration in a new chart.

Market Profile H.MP3 Indicator Overview

The purpose of this indicator is to develop the market profile of a futures, stock or forex symbol during a “session”.

Supported Chart Types and Intervals

Session	Support Chart Intervals
RTH, ETH	Minutes chart, 1 minutes or larger. 30 minutes is standard
Weekly	Minutes chart, 30 minutes or larger
Monthly	Daily or Minutes chart, 30 minutes or larger
Yearly	Daily, weekly, or monthly
Arbitrary	Minutes, daily, weekly, or monthly

General Tab

“Update value intra-bar (tick-by-tick)” is supported.

Check this box for the most up-to-date market profile TPO display that updates the values and the developing value area and developing POC on each tick; be aware that setting tick-by-tick “on” uses more CPU resources and may impact TradeStation platform performance.

If tick-by-tick is not selected then the TPO are updated at the close of each bar.

Regardless of the tick-by-tick setting, the VA and POC “plots” and any communication of MP variables (through the Channel input) occurs only on bar close.

Inputs Tab

The indicator has been designed such that the majority of configuration choices are set in this tab.

Name	Description
Session	<p>Default = "RTH" Defines the Session to generate the market profile. Valid choices are: "RTH" or "R" – Regular Trading Hours (pit/day session) "ETH" or "E" – Extended Trading Hours (globex/over-night session) "W" – Week "M" – Month "Y" - Year "Arbitrary" or A – Arbitrary session (starts/end on any day/time)</p> <p>This input is NOT case-sensitive</p>
Session_StartTime	<p>Default = 0830 Defines the beginning time of the session that the indicator will operate. Use 24 hour format for input. If your equity index future symbol is displayed in "Exchange" Time Zone, then use: If Session="RTH": Session_StartTime must be EARLIER than Session_EndTime. 0830 for @es, @ym, @nq, 15 or 30 min 0830 for @es.D, @ym.D, @nq.D, 15 or 30 min if Session="ETH": Session_StartTime must be LATER than Session_EndTime. 1700 for @es, @ym, @nq, 30 minute 1700 for @es, @ym, @nq, 15 minute</p> <p>This input is ignored if Session = "W", "M", "Y", or "A" and the chart interval is daily, weekly, or monthly. If you trade a different symbol check with the exchange or review the "Getting Started – Quick Start" section</p>
Session_EndTime	<p>Default = 1515 Defines the end of the session that the indicator will operate. Use 24 hour format for input. If your equity index future symbol is displayed in "Exchange" Time Zone, then use: If Session="RTH": Session_StartTime must be EARLIER than Session_EndTime. 1530 for @es, @ym, @nq, 30 min 1515 for @es, @ym, @nq, 15 min 1515 for @es.D, @ym.D, @nq.D, 15 or 30 min If Session="ETH": Session_StartTime must be LATER than Session_EndTime. 0830 for all @es, @ym, @nq, 15 or 30 minutes</p> <p>This input is ignored if Session = "W", "M", "Y", or "A" and the chart</p>

Name	Description
	interval is daily, weekly, or monthly. If you trade a different symbol check with the exchange.
arb_Start_Date Only valid for Session="A"	Required only if Session = "A", Format is YYYYMMDD Specifies the <u>start</u> day of the arbitrary session i.e. January 02, 2015 = 20150102
arb_End_Date Only valid for Session="A"	Required only if Session = "A", Format is YYYYMMDD Specifies the <u>end</u> day of the arbitrary session i.e. January 02, 2015 = 20150102
Merge	<p>Default = 0 Defines the size of the price interval to merge into a single TPO row. A non-zero number may improve readability of the indicator's output.</p> <p>0 = Create a TPO row for each traded price Non-0 = Defines the size of the price interval to merge and causes the indicator to perform a "round down to nearest" operation for each price traded. This value must be a multiple of the minimum price movement. It cannot be smaller than the minimum price movement.</p> <p>Review the "Merge Selection Methodology" section on page 16 for more information.</p>
First_BAR_Letter	<p>Default = "A" Defines the letter used to represent the first bar of the session. Typically "a" is used for ETH. Some products have historically used a different letter than "A", this input allows the trader to make that change.</p>
TPO_Color	<p>Default = GREEN Defines the color used for the TPO. Any color from the list: Black, Blue, Cyan, Green, Magenta, Red, Yellow, White, DarkBlue, DarkCyan, DarkGreen, DarkMagenta, DarkRed, DarkBrown, DarkGray, LightGray</p> <p>If other colors are desired then use RGB(r,g,b) where r is the red component, g is the green component, and b is the blue component of the color and each can range from 0 to 255</p>
TPO_VA_Color	<p>Default=YELLOW Defines the color used for the TPO calculated to be in the value area. Choose any color from the list: Black, Blue, Cyan, Green, Magenta, Red, Yellow, White, DarkBlue, DarkCyan, DarkGreen, DarkMagenta, DarkRed, DarkBrown, DarkGray, LightGray</p> <p>If other colors are desired then use RGB(r,g,b) where r is the red component, g is the green component, and b is the blue component</p>

Name	Description
	of the color and each can range from 0 to 255
TPO_POC_Color	<p>Default=RED Defines the color used for the TPO that is the POC Choose any color from the list: Black, Blue, Cyan, Green, Magenta, Red, Yellow, White, DarkBlue, DarkCyan, DarkGreen, DarkMagenta, DarkRed, DarkBrown, DarkGray, LightGray</p> <p>If other colors are desired then use RGB(r,g,b) where r is the red component, g is the green component, and b is the blue component of the color and each can range from 0 to 255</p>
TPO_Font	<p>Default= "Courier New" The font used to draw the TPOs and the Caret. Use any font that is displayed in the TradeStation platform's text drawing tool.</p>
TPO_Font_Size	<p>Default=10 This input defines the TPO font size used. Any valid font size is allowed.</p>
TPO_Font_Bold	<p>Default=True Whether to display the TPO font in bold (true) or not (false)</p>
TPO_Font_Italic	<p>Default=False Whether to display the TPO font in italic (true) or not (false)</p>
TPO_Font_Transparency	<p>Default=0 Defines the transparency of all TPO Font displayed. Can be any number between 0 and 100 0 signifies no transparency (solid), 100 signifies clear (invisible)</p>
Caret_Show	<p>Default=True If True then a Caret (“>” for open, “<” for close) is placed to the left of the first session bar to signify the session open and close price. If False then no caret is displayed.</p>
Caret_Color	<p>Default=WHITE Defines the color used for the Caret Any color from the list: Black, Blue, Cyan, Green, Magenta, Red, Yellow, White, DarkBlue, DarkCyan, DarkGreen, DarkMagenta, DarkRed, DarkBrown, DarkGray, LightGray</p> <p>If other colors are desired then use RGB(r,g,b) where r is the red component, g is the green component, and b is the blue component of the color and each can range from 0 to 255</p>
DVA_Show	<p>Default=True</p>

Name	Description
	If True then the developing value area is <u>plotted</u> during the session. The DVA plot is updated on bar close. Use the Style and Color tabs to configuration the look of the DVA plots.
PrevVA_Show	Default=True If True then the value area and POC of the previous session is <u>plotted</u> during the session. Use the Style and Color tabs to configuration the look of the previous VA plots.
Keep_History	Default=5 Controls the number of historical (previous) sessions TPOs & stats that are displayed. If 0 then the TPO of all sessions in the chart are displayed. If -1 then TPO are NEVER displayed. If > 0 then the current session and "Keep_History" previous session's TPOs are displayed. The larger the value selected for Keep_History then the greater number of "text objects" are displayed on your chart. Once TradeStation displays a large number your platform performance may suffer. The platform DOES display a warning message at that time.
Stats_Show	Default=True If True then the session's final VAH, POC, and VAL are displayed as a text string below the first bar of the session.
Stats_Font	Default="Arial Narrow" The font used to display the Stats. Use any font listed in the "Font" selection box displayed by the Font tab when you format a Text drawing object.
Stats_Font_Size	Default=10 The font SIZE used to display the Stats. Use any size listed in the "Font" selection box displayed by the Font tab when you format a Text drawing object.
Stats_Font_Bold	Default=False If True then the Stats are displayed bold.
Stats_Font_Italic	Default=False If True then the Stats are displayed italics.
Stats_Font_Transparency	Default=0 0 = solid through 100 = transparent
nPOC_Show	Default=1 Whether and how to display the naked POC. If 0 then do NOT display any naked POC. If 1 then display the naked POC and remove it once price retests that value.

Name	Description
	If 2 then display the naked POC. Truncate it once price retests that value.
nPOC_Style	Default=0 0 = Solid, 1 = Dashed, 2,3,4 = Different dotted alternatives.
nPOC_Transparency	Default=0 0 = solid through 100 = transparent
nPOC_Color	Default=RED Defines the color used for the naked POC line Any color from the list: Black, Blue, Cyan, Green, Magenta, Red, Yellow, White, DarkBlue, DarkCyan, DarkGreen, DarkMagenta, DarkRed, DarkBrown, DarkGray, LightGray If other colors are desired then use RGB(r,g,b) where r is the red component, g is the green component, and b is the blue component of the color and each can range from 0 to 255
nPOC_Weight	Default=2 0 – Thinnest line through 6 for the thickest line
Tail_Show	Default=1 Whether and how to display Tails. If 0 then do NOT display any Tail. If 1 then display the Tail and remove it once price retests that value. If 2 then display the Tail. Truncate it once price retests that value.
Tail_Style	Default=0 0 = Solid, 1 = Dashed, 2,3,4 = Different dotted alternatives.
Tail_Transparency	Default=40 0 = solid through 100 = transparent
Tail_Color	Default=WHITE Defines the color used for the Tail line(s) Any color from the list: Black, Blue, Cyan, Green, Magenta, Red, Yellow, White, DarkBlue, DarkCyan, DarkGreen, DarkMagenta, DarkRed, DarkBrown, DarkGray, LightGray If other colors are desired then use RGB(r,g,b) where r is the red component, g is the green component, and b is the blue component of the color and each can range from 0 to 255
Tail_Weight	Default=1 0 – Thinnest line through 6 for the thickest line
Anomaly_Show	Default=1 Whether and how to display any anomalies. If 0 then do NOT display any anomalies. If 1 then display the anomalies and remove it once price retests that

Name	Description
	value. If 2 then display the anomalies. Truncate it once price retests that value.
Anomaly_Style	Default=0 0 = Solid, 1 = Dashed, 2,3,4 = Different dotted alternatives.
Anomaly_Transparency	Default=40 0 = solid through 100 = transparent
Anomaly_Color	Default=RGB(125, 125, 125) Defines the color used for the anomaly line(s) Any color from the list: Black, Blue, Cyan, Green, Magenta, Red, Yellow, White, DarkBlue, DarkCyan, DarkGreen, DarkMagenta, DarkRed, DarkBrown, DarkGray, LightGray If other colors are desired then use RGB(r,g,b) where r is the red component, g is the green component, and b is the blue component of the color and each can range from 0 to 255
Anomaly_Weight	Default=1 0 – Thinnest line through 6 for the thickest line
Channel	Default="" Specifies the UNIQUE name of the global dictionary that this indicator uses to 'transmit' market profile variables information to Leave as "" if the 'transmission' is not required, Set it to the same unique string in both this indicator and MP.PlotR indicator to link the indicators. Think of the usage of the <i>Channel</i> input as you do the "symbol link" on chart analysis windows with added functionality to share across workspaces, and desktops (in addition to charts). See separate "Using the "Channel" Input Variable for Market Profile" user documentation for more information.
VA_Percent	Default=70 (range 10 to 90) Specifies the percentage of total session TPO to use to calculate the Value Area. Traditional usage of Market Profile default to 70% which corresponds to one standard deviation.

Alerts Tab

Alerts are not supported. Never select "Enable Alert."

Style Tab

This tab allows the configuration (type, style, weight, and transparency) of the developing and

previous value area and POC plots.

Color Tab

This tab allows the color selection of the developing and previous value area and POC plots.

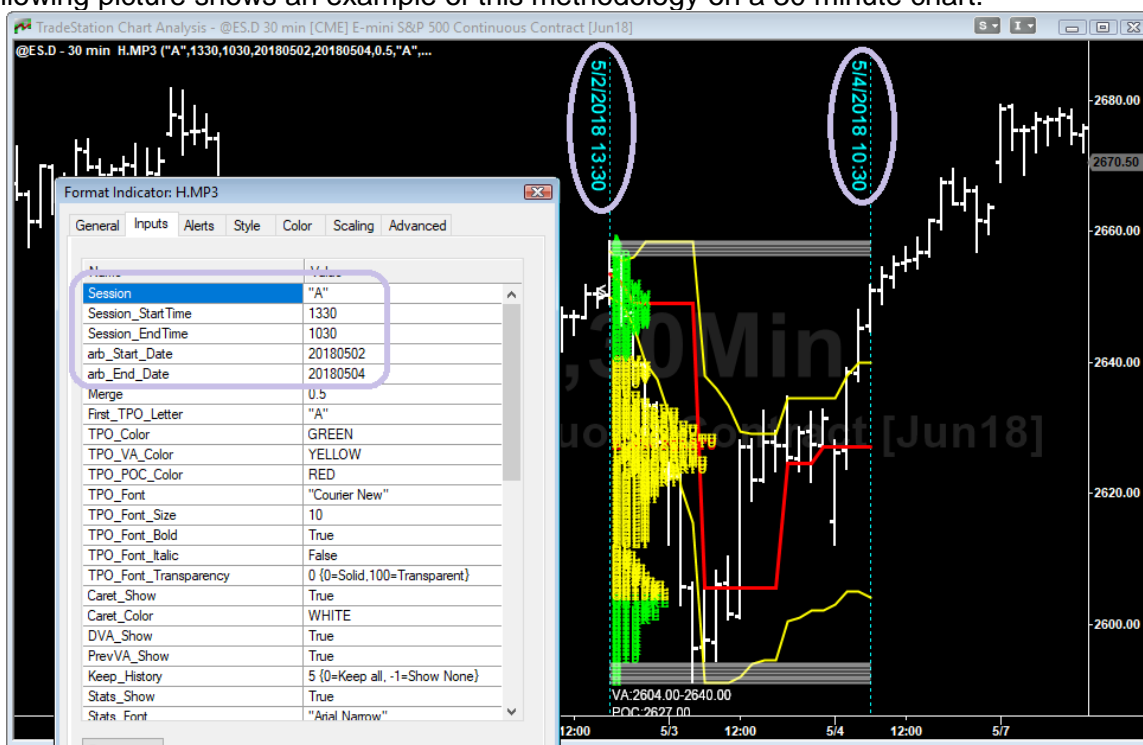
Arbitrary Session

The purpose of this session type is to develop the market profile during an ARBITRARY (or composite) period of time. This session allows the trader to select a single, specific time period that does not align with the default sessions: daily (RTH/ETH), month, week, or year. Sometimes, a trader may want to review a composite profile of the previous two weeks, previous three days, etc. ARBITRARY session allows such a review. It is the only profile session that generates a single profile on the chart.

This session provides flexibility so the trader can select any date/time to start and stop the indicator. The trader will typically use this session “add” composite profiles of a unique time-frame. The simplest way to do this is to:

- Select the appropriate chart interval.
- Insert two vertical lines (from the drawing tools menu bar) onto the chart and place them on the candles/bars that represent the start and end of the arbitrary time period.
- Turn on the display of the time and date of each vertical line.
- Insert the H.MP3 indicator, set the session to “ARBITRARY” or “A”, format the indicator, on the input tab use the date and time values of the vertical lines as the inputs for arb_Start_Date & Session_StartTime and arb_End_Date & Session_EndTime. Session_StartTime and Session_EndTime are ignored if the chart interval is RTH, ETH, Weekly, Monthly, or Yearly.

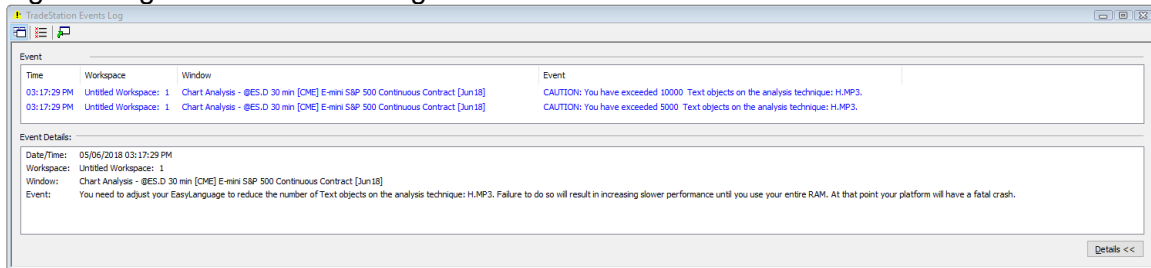
The following picture shows an example of this methodology on a 30 minute chart:



Advanced Topics

How To Resolve “Too Many Objects Event”

The Market Profile indicator uses text “objects” to display the TPO. Charts that contain large quantity of historical data may experience performance issues. Once a chart has “too many” TPOs drawn on it (also known as objects), system performance may deteriorate. In this situation TradeStation generates a warning message or an error message as follows:

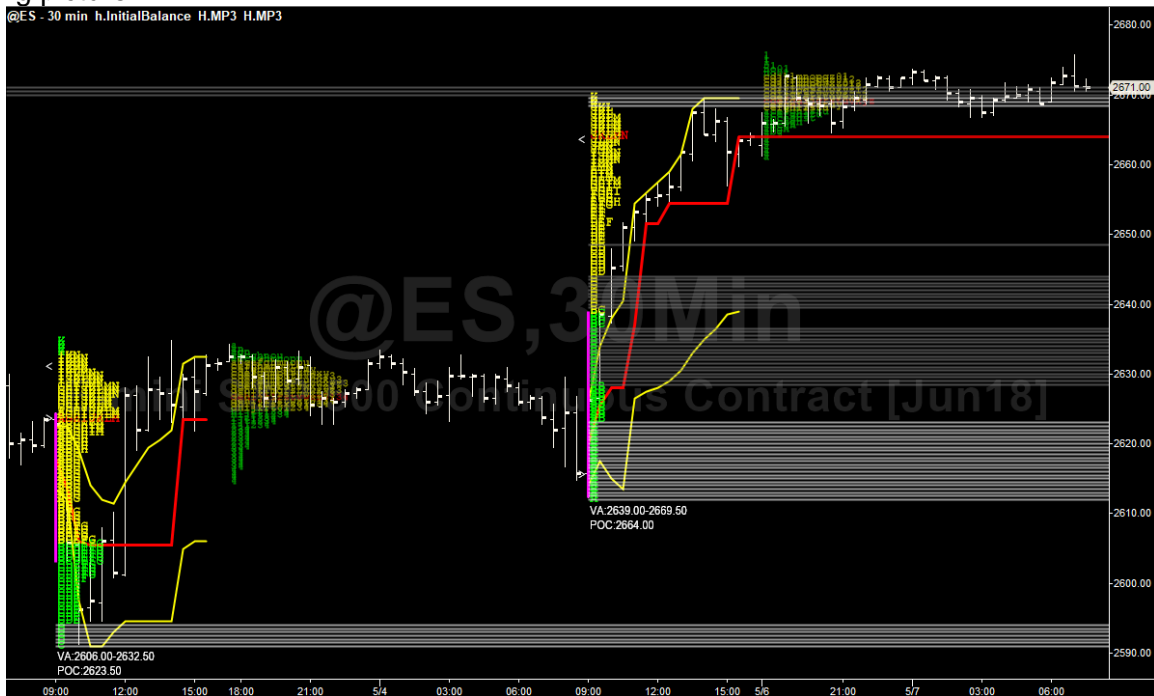


The trader has three choices to resolve this error:

1. Change the “Merge” input value to a larger number to display fewer TPOs,
 - @ES example: The minimum price move is 0.25 then set Merge to 0.5 to generate and display half as many TPOs on your chart
 - @YM example: The minimum price move is 1 then set Merge to 5 to generate and display one fifth as many TPOs on your chart
2. Set Keep_History to a smaller number than currently used, or
3. Chart a smaller range of dates. To do this, format the symbol, select the Settings tab and choose a Range that is smaller than that which is currently used in the chart.

Market Profile Indicators: Multiple Per Chart – Continuous Equity Index Futures

There are many ways to set up a market profile workspace. The most common workspace contains a 30 minute chart for intra-day analysis that includes **Market Profile Combination Pack H.MP3** inserted twice, once for the RTH session and once for the ETH session on the same continuous @ES chart along with **Market Profile Combination Pack h.InitialBalance** for the RTH session, as in the following picture:

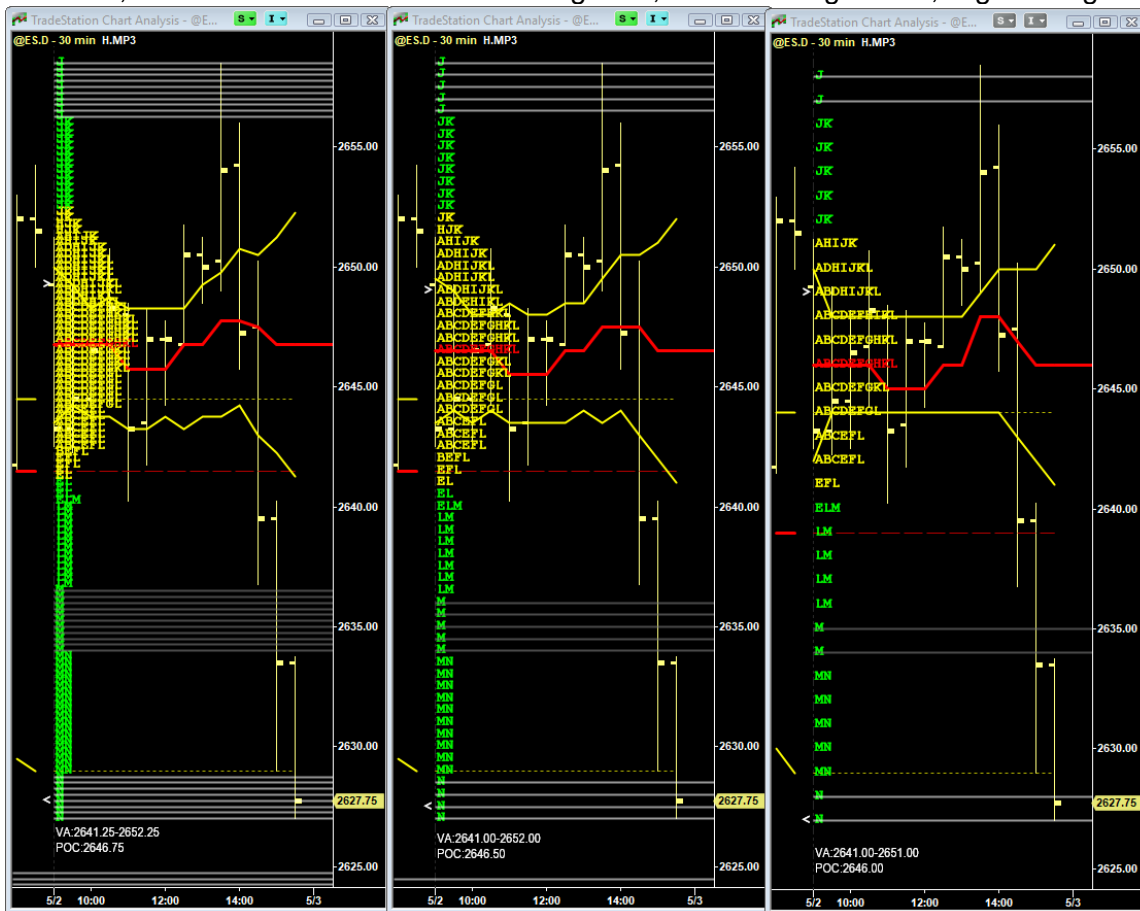


In this example, the two instances of **Market Profile Combination Pack H.MP3** have different entries for the Session, Session_StartTime, and Session_EndTime inputs as well as different colors in the TPO_Color, TPO_VA_Color, and TPO_POC_Color inputs. A chart that is very similar to this chart can be found in your sample workspace. The **Market Profile Combination Pack h.InitialBalance** input "Show_VertLine" is set to True, all other display inputs are set to False.

This chart is contained in the sample workspace.

Proper Merge Input Configuration

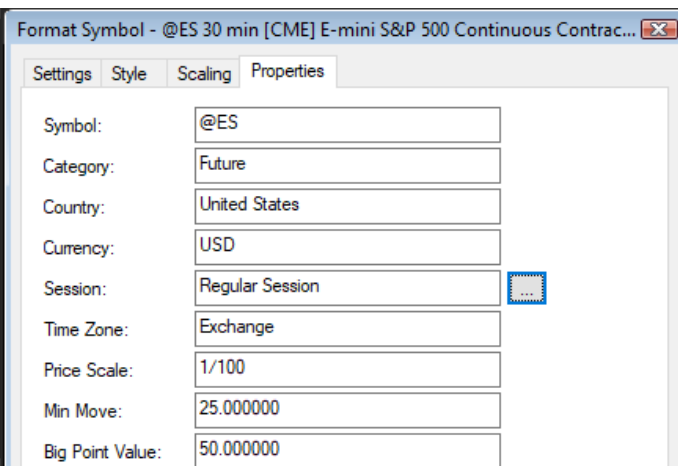
The following picture shows how the Merge input influences the calculations and resultant displays of H.MP3. @ES.D, S&P500 e-mini Futures. Left: Merge = 0, Center: Merge = 0.5, Right: Merge = 1.0:



Merge Selection Methodology

Create a “daily interval” RadarScreen with the products you are likely to chart, insert the Average True Range indicator as in the following picture:

Symbol	Interval	Last	Average True Range
@ES	Daily	2,670.00	36.33
@ES.D	Daily	2,663.75	35.15
@YM	Daily	24,295	361
@YM.D	Daily	24,233	349
AMZN	Daily	1,587.50	43.75
AAPL	Daily	184.93	4.00
SPY	Daily	266.86	3.53
EURUSD	Daily	1.19128	0.00776
USDJPY	Daily	109.234	0.609



Next, look at the “Properties” tab for each of those products. Calculate the minimum price movement for the product by multiplying the “Min Move” by the “decimalized Price Scale.” For @ES that would be 25*0.01 or 0.25. That represents the “Tick Size” of the product.

Once you have this “Tick Size” then divide the Average True Range by the Tick Size to determine the number of TPO rows in a typical day. The following spreadsheet contains the results:

Symbol	Average True Range	Min Move	Price Scale	Price Scale (Decimal)	Tick Size	Average TPO Rows
@ES	36.33	25	1/100	0.01	0.25	145.32
@ES.D	35.15	25	1/100	0.01	0.25	140.6
@YM	361	1	1	1	1	361
@YM.D	349	1	1	1	1	349
AMZN	43.75	1	1/100	0.01	0.01	4375
AAPL	4.00	1	1/100	0.01	0.01	400
SPY	3.53	1	1/100	0.01	0.01	353
EURUSD	0.00776	1	1/100000	0.00001	0.00001	776
USDJPY	0.609	1	1/1000	0.001	0.001	609

Merge at 0 would result in as many TPO rows as the value displayed in the “Average TPO Rows”.

Merge set at twice the Tick Size would cut the TPO rows in half.

Merge set at ten times the Tick Size would result in one tenth the “Average TPO Rows.”

High priced stocks such as AMZN, would warrant a Merge set to 1.

Support

send email to indy.by.harvey@gmail.com

In addition to a clear description of the problem, configuration details of the symbol and indicator, include the version of indicator and your TradeStation platform.

Disclaimer

- Success in trading is not guaranteed
- The developer of this indicator has made good efforts to produce a quality product, however the developer is not liable should importing and inserting this indicator impact the performance or utility of the customer's TradeStation platform
- The results of any and all trades that the customer takes which may have been influenced by this indicator are the customer's and the customer's alone, regardless of whether it is a profit or a loss

Neither TradeStation Technologies nor any of its affiliates has reviewed, certified, endorsed, approved, disapproved or recommended, and neither does or will review, certify, endorse, approve, disapprove or recommend, any trading software tool that is designed to be compatible with the TradeStation® Open Platform. TradeStation®, EasyLanguage® and the EasyLanguage Specialist® logo are registered trademarks of TradeStation Technologies, Inc.

Required USA Government Disclaimers: Futures and Options trading has large potential rewards, but also large potential risk. You must be aware of the risks and be willing to accept them in order to invest in the futures and options markets. Don't trade with money you can't afford to lose. This is neither a solicitation nor an offer to Buy/Sell futures or options. No representation is being made that any account will or is likely to achieve profits or losses similar to those discussed on this web site or during instructional sessions. The past performance of any trading system or methodology is not necessarily indicative of future results.

CFTC RULE 4.41 - HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING. ALSO, SINCE THE TRADES HAVE NOT BEEN ACTUALLY EXECUTED, THE RESULTS MAY HAVE UNDER-OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFIT OR LOSSES SIMILAR TO THOSE SHOWN.