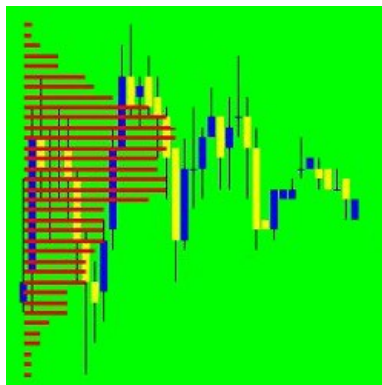


## Using the “Channel” Input Variable



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This document is an additional reference for subscribers to the MP Combination Pack and MP for Regular Trading Hours.

## New

- MP indicators (MP RTH version 7, MP Combo Pack version 6) have been modified to share their market profile variables: developing value area high, developing value area low, and developing POC (dVAH, dVAL, and dPOC) and previous 'session' variables with indicators or strategies by using the TradeStation “global dictionary.” Uses of this data include:
  - Enables the plotting of the dVAH, dPOC, and dVAL on a smaller timeframe chart through the new H.MP.PlotR indicator (e.g. plot the developing area of the RTH 30

- minute chart on a 5 minute chart)
  - Enables the trader to build unique strategies, or indicators, using the developing market profile variables (dVAH, dPOC, and dVAL)
- New input parameter for H.MP.RTH, H.MP.ETH, H.MP.WEEKLY, H.MP.MONTHLY, and H.MP.Arbitrary called “Channel” that specifies the global dictionary Channel that contains the MP values.
  - Default for Channel is “” which disables the new functionality.
- New analysis technique, H.MP.PlotR, that plots dVAH, dPOC, dVAL and pVAH, pPOC, pVAL that was stored in the global dictionary (defined by “Channel”) by the specified MP indicators on a chart or lists those values in a Radar Screen.
  - Source code for a portion of this indicator is provided so that the trader may create their own indicator to use the MP variables placed in the global dictionary – if you do not know EasyLanguage then review training resources from TradeStation or online providers of EasyLanguage training.

## Getting Started – Quick Start – H.MP.PlotR

- Start *MP.RTH* 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 display time zone is set to “Exchange” and the Range is set to 20 days
  3. Set the chart interval to 30 minutes
  4. Insert the Market Profile Combination Pack H.MP.RTH indicator (turn on “Prompt for Format”). Select the “Input” tab and change FirstBarStartTime to 0930 and LastBarEndTime to 1600 and **set Channel to “IBM30MinR”**.
- Start *MP.MP.PlotR* on the same NYSE listed equity, perform the following steps:
  1. Create a **new** Chart Analysis chart, in the same workspace or a different workspace (which may or may not be in the same TradeStation desktop)
  2. Insert the IBM symbol on the chart; make sure the display time zone is set to “Exchange” and the Range is set to 20 days
  3. Set the chart interval to 5 (or fewer) minutes
  4. Insert the Market Profile Combination Pack H.MP.PlotR indicator (turn on “Prompt for Format”). Select the “Input” tab and **set Channel to “IBM30MinR”**.

These two charts are now linked through the common setting of the Channel input value. The charts may be in the same workspace, different workspaces in the same desktop, or different workspaces in different desktops.

## Common New Input Parameter of The Market Profile Indicators

The input parameters for the MP indicators (MP.RTH, MP.ETH, MP.Weekly, MP.Monthly, MP.Arbitrary) have NOT changed. An additional input parameter is provided for the value sharing through the TradeStation global dictionary:

Name	Default Value	Description
Channel	""	<p>Specifies the UNIQUE name of a global dictionary entry that the indicator uses to 'transmit' market profile variables information to.</p> <p>Leave as "" if the 'transmission' is not required, Set it to the same string in both the MP "transmitting" indicator (MP.RTH, MP.ETH, MP.Weekly, MP.Monthly, MP.Arbitrary) and MP.PlotR "receiving" indicator to link the indicators.</p> <p>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).</p>

## MP.PlotR Overview

The purpose of this indicator is to display the market profile variables: developing value area (dVAH, dPOC, dVAL) and previous value areas values from the “transmitting” chart onto a chart of a different time interval, but of the same symbol, or in a Radar Screen.

### MP.PlotR General Tab

“Update value intra-bar (tick-by-tick) is supported, but not required.

### MP.PlotR Inputs Tab

Name	Default Value	Description
ShowPrevVA	FALSE	Controls whether the indicator displays the previous session's value area data False = Do not show True = Show
Channel	“”	Specifies the name of the global dictionary that the indicator uses to retrieve the MP information from.  Never set this to “” as it disables the functionality of this indicator. Set Channel to the unique string used in the transmitting MP indicator.  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).

### MP.PlotR Alerts Tab

Alerts are not supported. Never select “Enable Alert.”

### MP.PlotR Style Tab

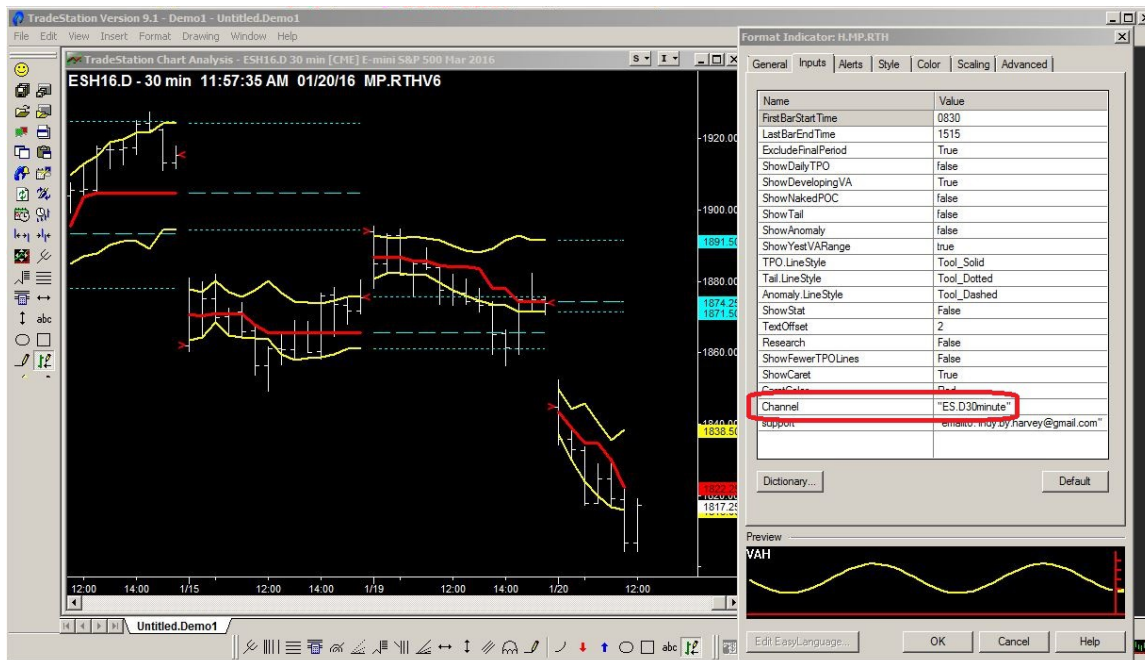
Use this tab to change the style and weight of the dVAH, dPOC, dVAL and pVAH, pPOC, pVAL.

### MP.PlotR Color Tab

Use this tab to change the color of the dVAH, dPOC, dVAL and pVAH, pPOC, pVAL.

## Example 1: Configuration for MP.RTH and MP.PlotR - Chart

This example shows how to configure MP.RTH and MP.PlotR to share the developing value area information across charts in different TradeStation desktops. The following 30 minute chart of ESH16.D shows the configuration for MP.RTH (note, all that is displayed is the developing value area to “de-clutter” the example, you can set the Show\* inputs to True or False when using Channel to share information):



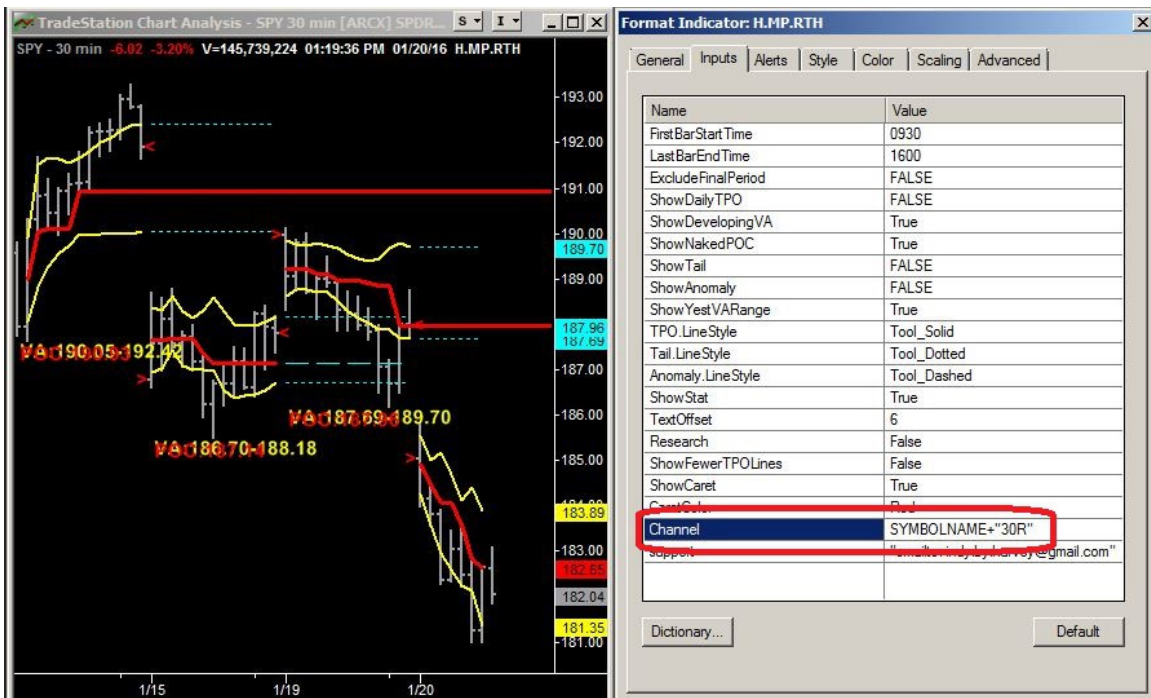
Note: ESH16.D chart was used as the source since its 30 minute candles (standard for Market Profile) end at the end of the trading day at 15:15 CT. If ESH16 was used as the source, the last candle ends at 15:30 CT instead.

The following 5 minute chart of ESD16 (reminder: you can't trade a ".D" contract, and the exact same futures product name is not required on both charts to share the market profile variables) with MP.PlotR shows the same Channel value to receive and display the developing value area information:



## Example 2: Configuration for MP.RTH and MP.PlotR - RadarScreen

This example shows how to configure MP.RTH and MP.PlotR to share the developing value area information from a chart to a radar screen; the primary difference is the setting for Channel:



Using this type of setting enables the trader to build a radar screen that shows all the developing information for as many symbols as are charted (note: although there is no screen capture of @ES.D and EURUSD with the MP.RTH indicator applied, they existed in the workspace before the following radar screen was captured):

The screenshot displays two windows from the TradeStation software. The left window, titled 'TradeStation RadarScreen - MP.PlotR RadarScreen', shows a table of market data for three symbols: @ES.D, EURUSD, and SPY. The table includes columns for 'Last' price and various order types (dVAL, dPOC, dVAH, pVAL, pPOC, pVAH) with their respective values. The right window, titled 'Format Indicator: H.MP.PlotR', shows the 'General' tab of a dialog box. The 'Channel' field is highlighted with a red box and contains the text 'SYMBOLNAME+"30R"'. Other fields like 'ShowPrevVA' are set to 'TRUE'.

		MP.PlotRV6					
Symbol	Last	dVAL	dPOC	dVAH	pVAL	pPOC	pVAH
1 @ES.D	1814.25	1807.75	1820.75	1833.50	1871.50	1874.25	1891.50
2 EURUSD	1.09235	1.08954	1.09069	1.09185	1.08906	1.08998	1.09292
3 SPY	181.99	181.35	182.65	183.89	187.69	187.96	189.70
4							

Name	Value
ShowPrevVA	TRUE
Channel	SYMBOLNAME+"30R"

## How To Develop Your Own Indicator for the Global Dictionary

This section assumes you know EasyLanguage and is intended as a reference for the trader to develop their own indicator or strategy that relies upon the Market Profile developing variables.

### ***Format of Stored Variables in the Global Dictionary***

When the Channel input variable is not NULL (""), the MP indicators create two global dictionaries as follows:

```
variables:
    GlobalDictionary MPDict( Null ),
    GlobalDictionary MPDictSignal( Null );

    MPDict = GlobalDictionary.Create( true, Channel );
    MPDictSignal = GlobalDictionary.Create( true, Channel & "-Signal" );
```

Your strategy/indicator to access these MP values from the Global Dictionary should use the same code. MPDict contains the MP values and MPDictSignal exists for the “transmitting” MP indicators to signal to the “receiving” strategy/indicator that values in MPDict have changed. The information shared by the Market Profile indicators are stored into the Global Dictionary as follows:

```
MPDict.Items[ Channel & ".MP.pVAH" ] = Previous-Session.VA.Hi astype double;
MPDict.Items[ Channel & ".MP.pPOC" ] = Previous-Session.POC astype double;
MPDict.Items[ Channel & ".MP.pVAL" ] = Previous-Session.VA.Lo astype double;
MPDict.Items[ Channel & ".MP.dVAH" ] = Developing.Value.Area.Hi astype double;
MPDict.Items[ Channel & ".MP.dPOC" ] = Developing.POC astype double;
MPDict.Items[ Channel & ".MP.dVAL" ] = Developing.Value.Area.Lo astype double;
MPDict.Items[ Channel & ".MP.date" ] = Date astype double;
MPDict.Items[ Channel & ".MP.time" ] = Time astype double;
```

The transmitting MP indicators place the developing value area information into the Global Dictionary at every candle close, regardless of whether the values changed since the close of the previous candle.

The transmitting MP indicators replace the previous values and then set the developing values to -1 at the end of the period (e.g. for MP.RTH or MP.ETH when time equals the LastBarEndTime input value) into the variables as follows:

```
MPDict.Items[ Channel & ".MP.pVAH" ] = Developing.Value.Area.Hi astype double;
MPDict.Items[ Channel & ".MP.pPOC" ] = Developing.POC astype double;
MPDict.Items[ Channel & ".MP.pVAL" ] = Developing.Value.Area.Lo astype double;
MPDict.Items[ Channel & ".MP.dVAH" ] = -1;
MPDict.Items[ Channel & ".MP.dPOC" ] = -1;
MPDict.Items[ Channel & ".MP.dVAL" ] = -1;
```



## **Strategy/Indicator Initialization**

When items in the MPDict have been updated a dummy item is stored into MPDictSignal. Indicators or strategies should wait for a change or add event in MPDictSignal as follows:

```
Method void NewMPValues( elsystem.Object sender,
elsystem.collections.ItemProcessedEventArgs args )
Begin
    // called when the signal dictionary has an added or modified item
    // only occurs when new MP variables exist
    // Perform required processing, e.g. capture new values from the dictionary
End;

Once
Begin
    // Initialization and setup of the dictionaries
    MPDict = GlobalDictionary.Create( true, Channel );
    MPDictSignal = GlobalDictionary.Create( true, Channel & "-Signal" );
    MPDictSignal.ItemAdded += NewMPValues;
    MPDictSignal.ItemChanged += NewMPValues;
End;
```

## **Plotting The MP Variables: Source Code**

Sample source code is provided to assist subscribers to create additional indicators and strategies that use the developing value area data transmitted by the MP indicator(s). The source code shows the proper mechanism to use to access the global dictionary and the specific types for each datum provided by the MP indicators.

```
Using elsystem.collections;

inputs:
    string Channel( "" ); // Defines the UNIQUE chart that is the source of
                          // the developing value area data
                          // Every MP indicator that can share information
                          // has a similar input
                          // and each indicator that shares MUST use
                          // a different string for Channel input variable

variables:
    GlobalDictionary MPDict( Null ),
    GlobalDictionary MPDictSignal( Null ),
    Intrabarpersist double ddate( -1 ),
    Intrabarpersist double dtime( -1 ),
    Intrabarpersist double pVAH( -1 ),
    Intrabarpersist double pPOC( -1 ),
    Intrabarpersist double pVAL( -1 ),
    Intrabarpersist double dVAH( -1 ),
    Intrabarpersist double dPOC( -1 ),
    Intrabarpersist double dVAL( -1 );

Method void NewMPValues( elsystem.Object sender,
elsystem.collections.ItemProcessedEventArgs args )
Begin
    // called when the signal dictionary has an added or modified item
```

```

// if the value exists in the dictionary then extract it; this indicator
// NEVER modifies the Channel values; only captures the latest value
If MPDict.Contains( Channel & ".MP.pVAH" ) <> False then
    pVAH = MPDict.Items[Channel & ".MP.pVAH"] astype double;
If MPDict.Contains( Channel & ".MP.pPOC" ) <> False then
    pPOC = MPDict.Items[Channel & ".MP.pPOC"] astype double;
If MPDict.Contains( Channel & ".MP.pVAL" ) <> False then
    pVAL = MPDict.Items[Channel & ".MP.pVAL"] astype double;
If MPDict.Contains( Channel & ".MP.dVAH" ) <> False then
    dVAH = MPDict.Items[Channel & ".MP.dVAH"] astype double;
If MPDict.Contains( Channel & ".MP.dPOC" ) <> False then
    dPOC = MPDict.Items[Channel & ".MP.dPOC"] astype double;
If MPDict.Contains( Channel & ".MP.dVAL" ) <> False then
    dVAL = MPDict.Items[Channel & ".MP.dVAL"] astype double;
If MPDict.Contains( Channel & ".MP.date" ) <> False then
    ddate = MPDict.Items[Channel & ".MP.date"] astype double;
If MPDict.Contains( Channel & ".MP.time" ) <> False then
    dtime = MPDict.Items[Channel & ".MP.time"] astype double;
End; // Method void NewMPValues

Once // Initialization
Begin
    MPDict = GlobalDictionary.Create( true, Channel );
    MPDictSignal = GlobalDictionary.Create( true, Channel & "-Signal" );
    MPDictSignal.ItemAdded += NewMPValues;
    MPDictSignal.ItemChanged += NewMPValues;

    // Capture the previous "session" and current developing values in
    // case the MP indicator is already running when this indicator starts
    // Do this rather than to wait for the next write of developing values
    If MPDict.Contains( Channel & ".MP.pVAH" ) <> False then
        pVAH = MPDict.Items[Channel & ".MP.pVAH"] astype double;
    If MPDict.Contains( Channel & ".MP.pPOC" ) <> False then
        pPOC = MPDict.Items[Channel & ".MP.pPOC"] astype double;
    If MPDict.Contains( Channel & ".MP.pVAL" ) <> False then
        pVAL = MPDict.Items[Channel & ".MP.pVAL"] astype double;
    If MPDict.Contains( Channel & ".MP.dVAH" ) <> False then
        dVAH = MPDict.Items[Channel & ".MP.dVAH"] astype double;
    If MPDict.Contains( Channel & ".MP.dPOC" ) <> False then
        dPOC = MPDict.Items[Channel & ".MP.dPOC"] astype double;
    If MPDict.Contains( Channel & ".MP.dVAL" ) <> False then
        dVAL = MPDict.Items[Channel & ".MP.dVAL"] astype double;
    If MPDict.Contains( Channel & ".MP.date" ) <> False then
        ddate = MPDict.Items[Channel & ".MP.date"] astype double;
    If MPDict.Contains( Channel & ".MP.time" ) <> False then
        dtime = MPDict.Items[Channel & ".MP.time"] astype double;
End;

// To display relevant data on the chart or radar screen, only
// display developing information if current day is the same or
// later than the date developing value area data was stored,
// Make sure "display Time Zones" are the same on both charts
If D >= ddate then
    Begin
        If dVAH = -1 then
            Begin
                // The Market Profile indicators set their variables to

```

```
        // -1 when their period (e.g. RTH for MP.RTH,  
        // ETH for MP.ETH is over.  
        // Outside of period so do not plot the lines  
        SetPlotColor(1, Transparent);  
        SetPlotColor(2, Transparent);  
        SetPlotColor(3, Transparent);  
    End  
    Else  
    Begin  
        // Inside of period so plot the lines  
        Plot1( dVAH, "dVAH" );  
        Plot2( dPOC, "dPOC" );  
        Plot3( dVAL, "dVAL" );  
    End;  
End; // If D >= ddate
```

## Frequently Asked Questions (FAQ)

**Q: Does the MP Global Dictionary contain all values (dVAH, dPOC, dVAL, pVAH, pPOC, pVAL) that were generated during the trading period?**

A: No. The MP Global Dictionary only contains the most recent developing value area data. If your strategy or indicator requires historical values then you must save the values in a database or file for future processing.

**Q: When are the MP Global Dictionary values for dVAH, dPOC, dVAL set to -1?**

A: These values are set to -1 at the end of the session.

**Q: I can not get MP.PlotR to display on a chart. What should I do?**

A: Check the following three items:

1. Make sure the display time zone is the same on both charts. Either both are set to "Exchange" or both are set to "Local".
2. Make sure the Channel input variable is the same on both charts.
3. The chart with MP.PlotR may have started before the chart with the MP.RTH, MP.ETH, etc. indicator, disable then enable the MP.PlotR indicator to force the MP.PlotR indicator to search for the MP variables again.

## Support

send email to [indy.by.harvey@gmail.com](mailto: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

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