High Frequency Chart

Features:

- 1-second candlestick chart
- TD Trades: Millisecond Trade Indicator
- TD Volume Buy/Sell
- TD High Frequency
- TD Open Interest
-

Abstract

The High-Frequency Chart allows us to understand the direction in which high-frequency bots are operating. Major market movers no longer rely on a team of manually executing traders following traditional trading methods.

With the advent of the internet, a significant shift occurred. Algorithms based on quantitative patterns began to emerge. These were the first bots in the market, quantifying typical indicators and automatically executing orders with large volumes

Over the years, these bots evolved beyond simple algorithms, incorporating big data and improving their execution speed in the markets. High-frequency speed was introduced for data reading and execution in the markets. This sparked intense competition in the markets to exploit every market deficiency and absorb all possible liquidity

This technology not only led to the implementation of swing and day trading strategies by these bots but also micro-movements in price, engaging in a competitive race for market liquidity

Understanding this, it becomes clear that those with the capacity to move the market are the major operators equipped with these valuable resources

The crypto market operates 24/7, 365 days a year. Moreover, it is a relatively new market that is still maturing. All of this contributes to the scarcity of liquidity within Bitcoin and altcoins.

Therefore, having the advantage of observing how high-frequency bots operate in the market in search of liquidity is crucial, whether for significant movements or smaller ones.

1-Second Candlestick Chart

We employ a small-scale chart to visualize the remaining High-Frequency indicators, specifically a 1-second candlestick chart. This allows us to observe the price and its movement per second, providing a more detailed view of the events within each 1-second candle, with measurements at the millisecond level.

Adding Indicators:
To add the indicators we'll be discussing, right-click on the chart, and a list will appear. All Trading Different indicators are prefixed with 'TD.' Click on each one to add them to the screen

TD Trades

This is one of the most crucial indicators within the High-Frequency Chart. This indicator reads all trades entering the market in milliseconds and groups them into 1-second candles based on the execution moment

In the following example, you can observe that in the candle at 19:13:43, 128 trades were executed in just one second.

When we observe a high number of trades executed in 1 second, it serves as an indication that bots are influencing the price in that direction.

Bots execute numerous trades due to their high-frequency nature, providing a means to identify their activity.

If we consider another example, looking at a broader scenario, we can observe that the number of trades varies significantly from one moment to another.

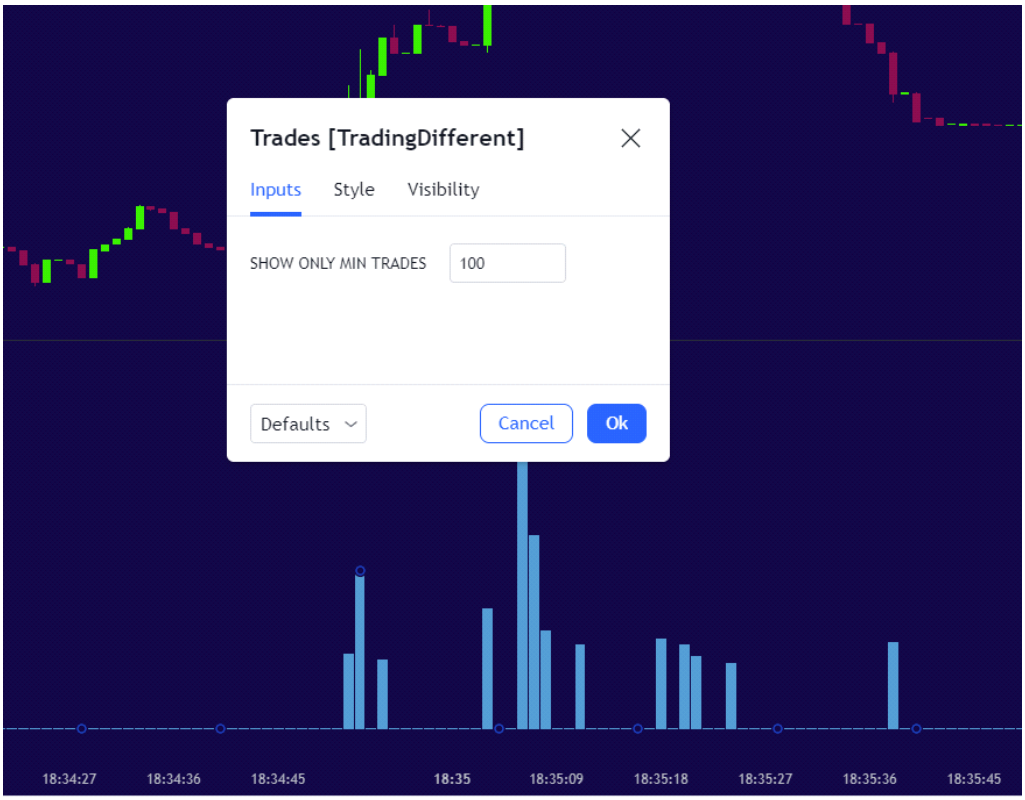
In this case at 18:35:06, 584 trades are executed in 1 second.

If we observe the rest of the candles, we can see that they have an average of less than 70 trades per second. Therefore, we can interpret for this scenario that High-Frequency Bots are evident with more than 100 trades per second.

To make the analysis easier and faster, we can use the filter provided by the indicator

From Settings:

we set it to display only trades greater than 100.



This applies to the current scenario; however, there are times in the market when bots operate with fewer trades. It's essential to note the average number of trades executed in recent hours and the minimum trade size that does impact the price

By applying this filter, the indicator becomes refined, providing a clearer view of the candles where High Frequency activity occurred. It's evident that the upward movement began a few minutes earlier, at 18:32:05, and continued for several seconds, executing a significant number of trades per second (exceeding 100), ultimately driving the price higher.

However, this indicator alone is insufficient to interpret the direction in which the High-Frequency (HF) bots are operating. It is essential to combine it with Volume, as we are aware that HF bots execute numerous trades per second due to having substantial Volume to inject into the market.

TD Buy/Sell Volume

This indicator is the key to confirming whether the trades per second executed by the bots will be successful or not. Here what we are looking for is to be able to identify the strong volume that is injected into the market, both with market orders in Buy and Sell.

Let's examine the following example where we've included the Volume Buy/Sell. In this scenario, we've also filtered Trades greater than 100, based on the average observed in the last few hours.

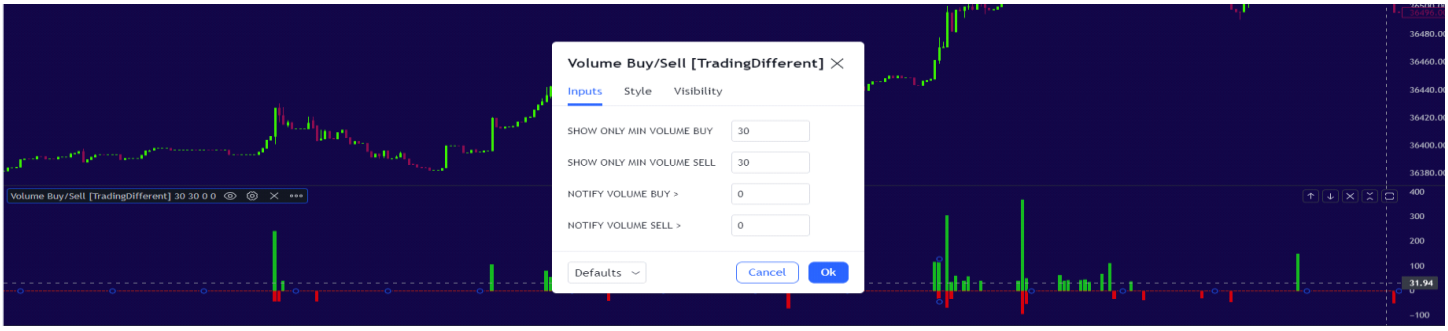
The Volume is unfiltered at the moment, but at a glance, we can observe how the initial upward movement at 15:59:55 is associated with 522 trades in one second and 240 BTC of Buy Volume. Previously, the price had no significant trades or volume.

This serves as our initial alert to identify the direction in which high-frequency bots are operating, having confirmation of their presence through a combination of numerous trades and substantial volume.

We can apply a filter to Volume Buy/Sell to clean up the chart and focus only on significant volume.

Click on “Settings”:

For this scenario, we filter volumes above 30 BTC for both Buy and Sell, as this value is above the average



In this same example, we can see how the High Frequency bots begin to manifest several times during the range, before injecting the majority of volume and raising the price to USD 35,560.

We had the first alert at 15:59:55 and seconds later confirmations of upward manipulation began, repeating for several seconds: Many Trades + High Volume.

During those confirmation seconds and still in lateral movement, this is where we should look to enter in favor of High-Frequency, meaning trading in the same direction (Long in this example).

We now have the entry trigger for our trade through the High-Frequency chart, but it's crucial to combine it with the Liquidation Heatmap to complete our trade setup. Define Stop Loss and Take Profit.

For this example, the scenario with the Liquidation Heatmap is as follows:

It's a small move, occurring in just two 5-minute candles. Observing the confirmation from high-frequency bots and having marked the 100x liquidation pools on the Liquidation Heatmaps chart, we can confirm it's a good opportunity to enter a trade.

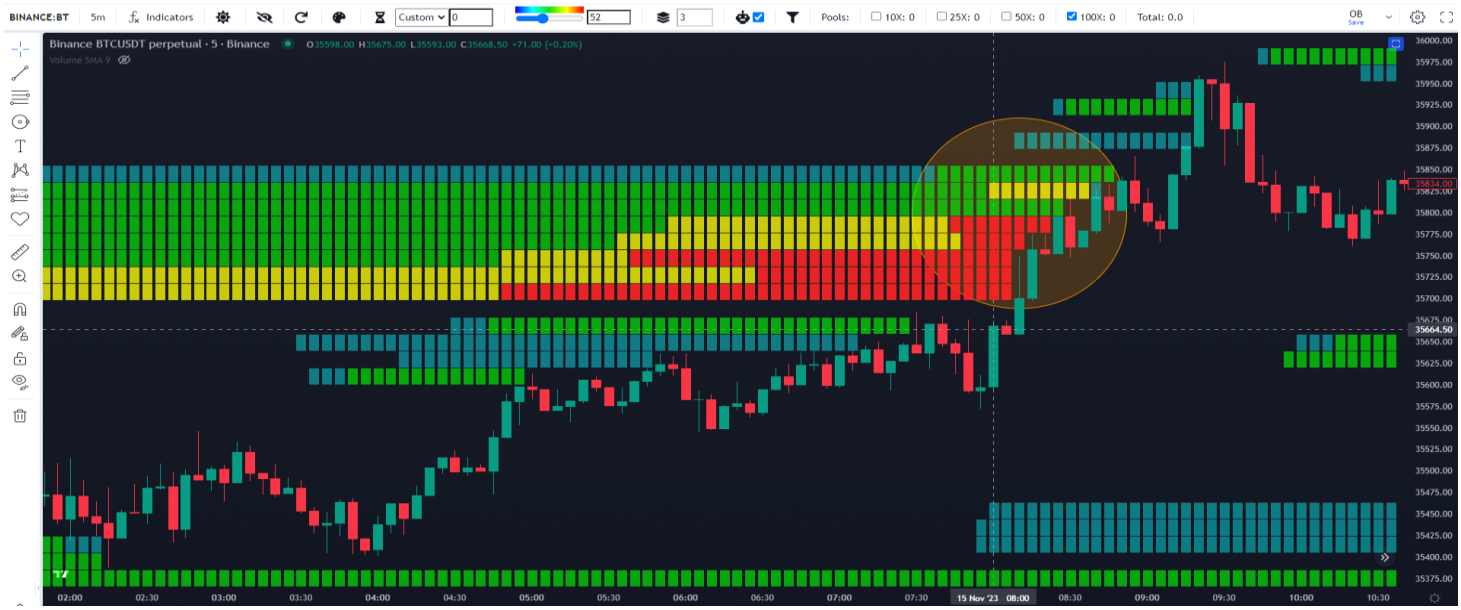
In other words, we're looking at the complete picture: bots are operating on the buy side, and we know how far they plan to manipulate the price to liquidate short sellers at 100x leverage.

If we don't have a liquid pool nearby at the top, we shouldn't enter the trade, as we don't have a target for our Take Profit.

As for the Stop Loss, a specific risk/reward ratio can be set, or the Stop can be adjusted below the price where the bots began to show evidence

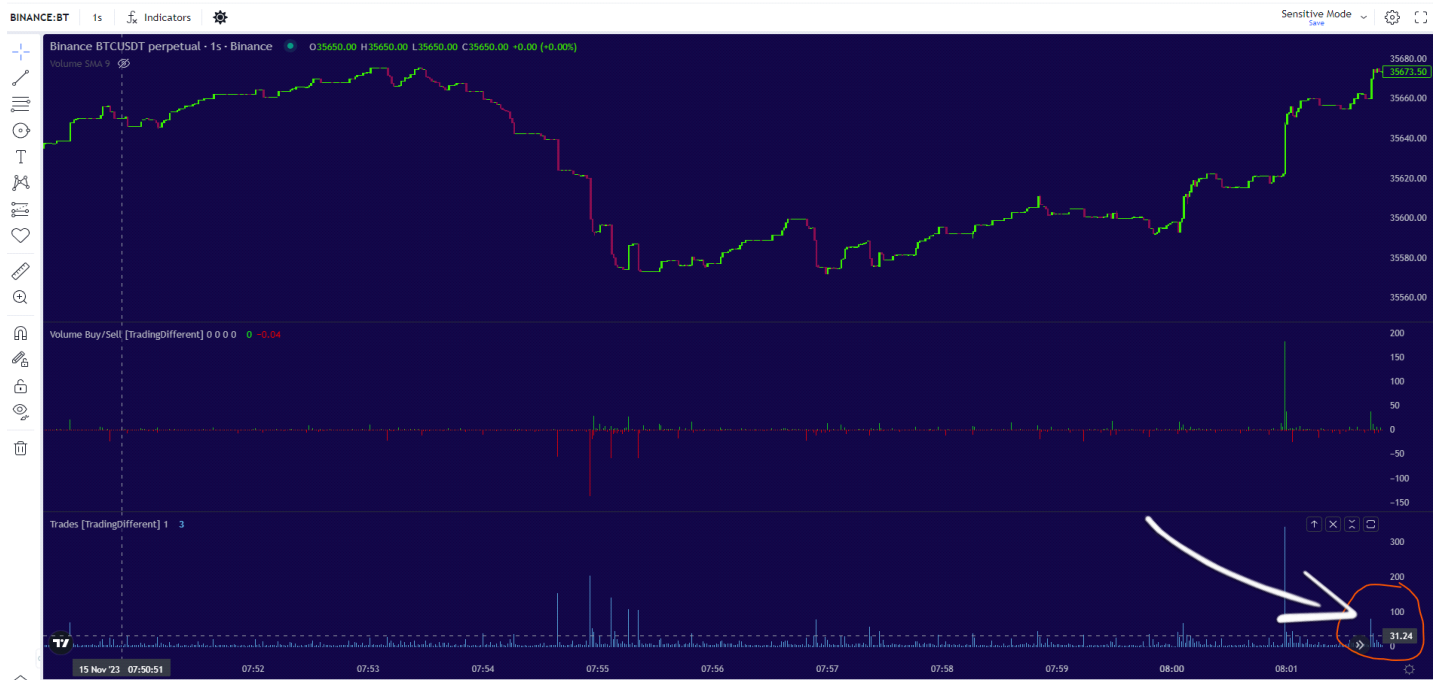
Let's now look at an example of a more extended movement.

We'll analyze if, by using the High Frequency chart, we could have taken that long trade that unfolds over several 5-minute candles. Once again, our target is the pools with the highest volume at 100x leverage.



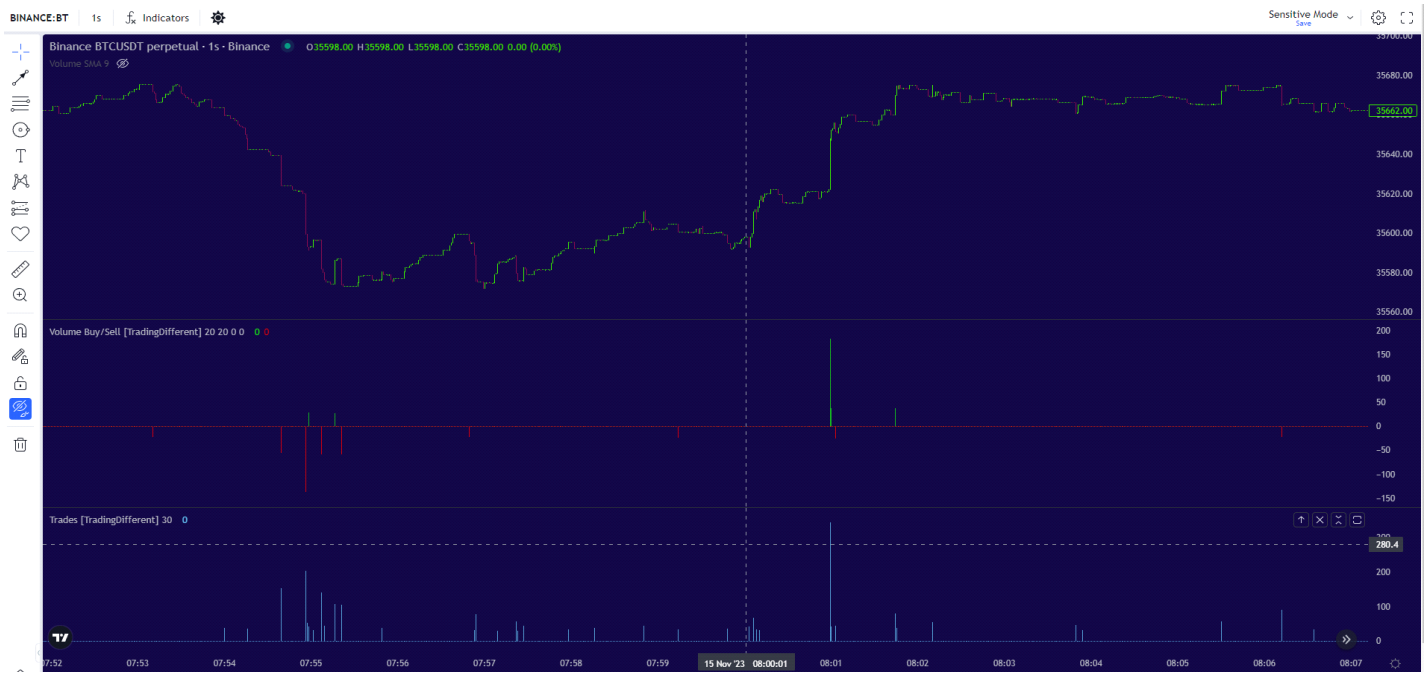
On the High Frequency chart, we position ourselves a few minutes before the movement, to filter the Trades and Volume.

We observe that the average number of Trades per second is below 30. Therefore, we can filter trades greater than that value.

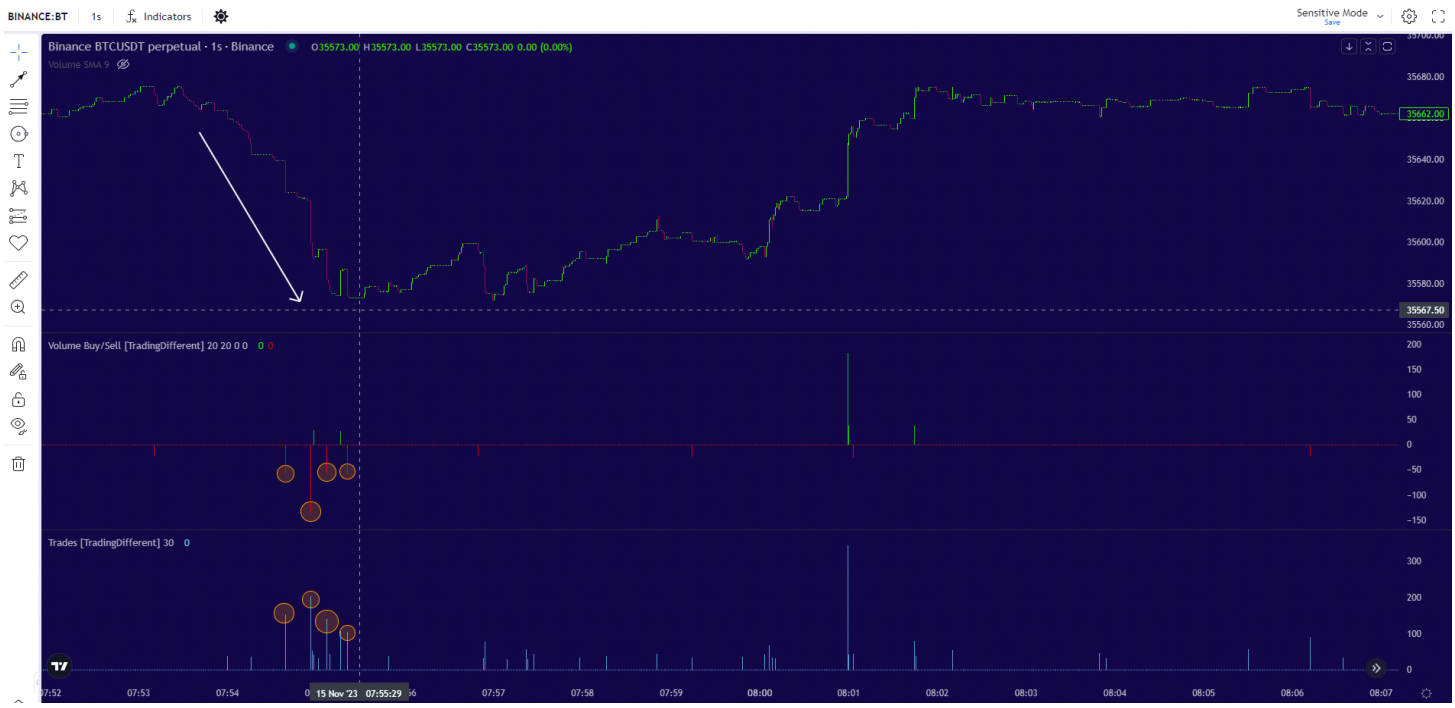


We analyze to filter the Volume, considering at first glance that the average is below 20 btc per second. Therefore, we filter greater than that value.

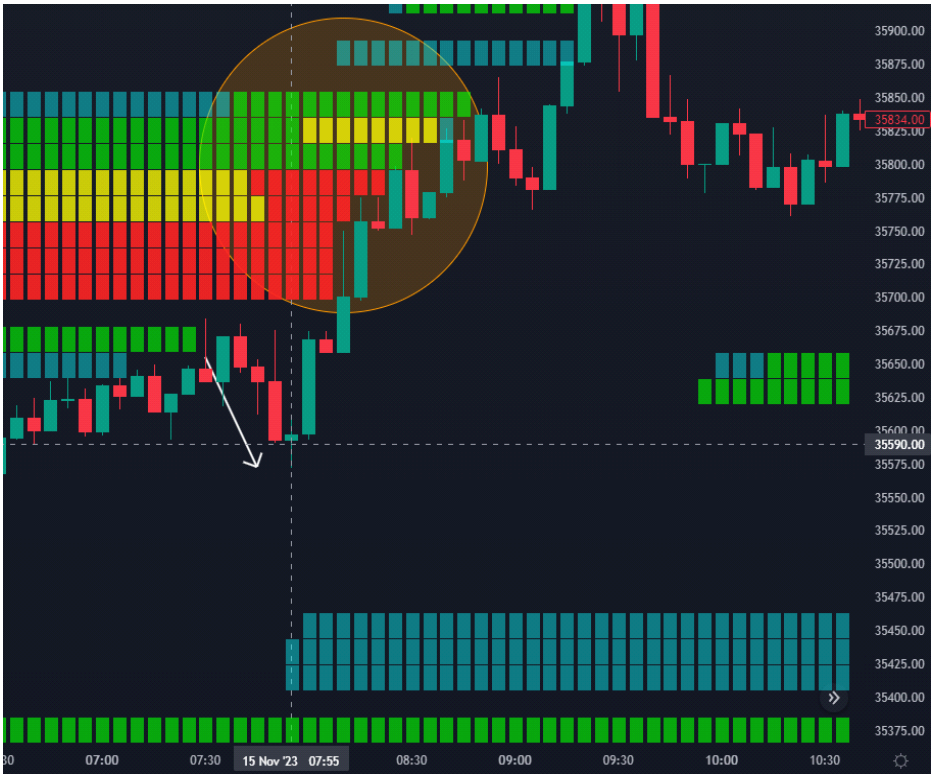
Once the filters are applied, we have a cleaner chart to continue the analysis



The first notable aspect on the chart is that the bots were previously operating downwards, executing Sell orders.



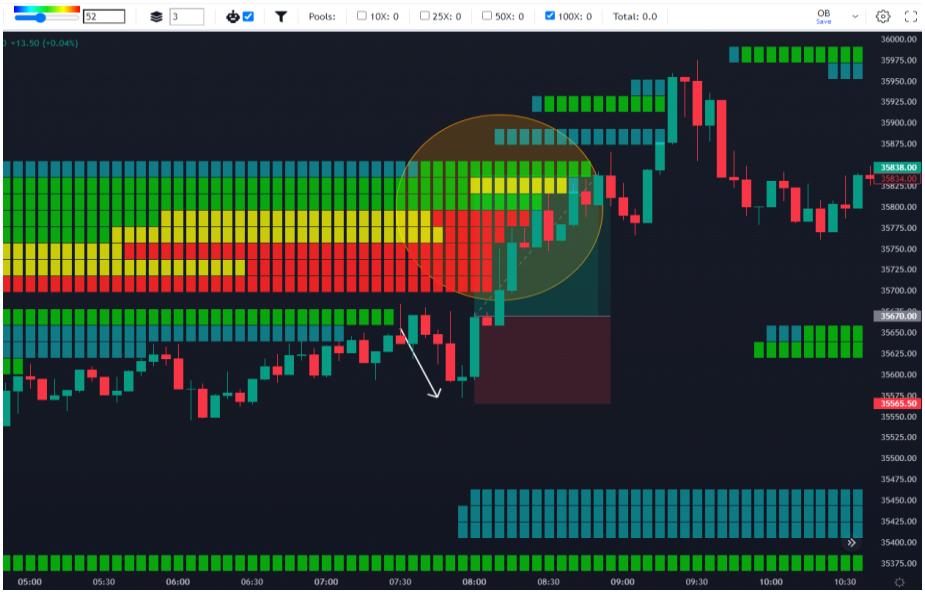
This is due to the rebound that occurs after a liquidation. They had already liquidated a 100x leveraged pool previously, as observed in the Liquidation Heatmap.



Seeing the bots act in the opposite direction, after a liquidation, is normal since they are taking profits from their positions trying to take advantage of all the liquidity available within the Pool and the new limit orders positioned in the Order Book.

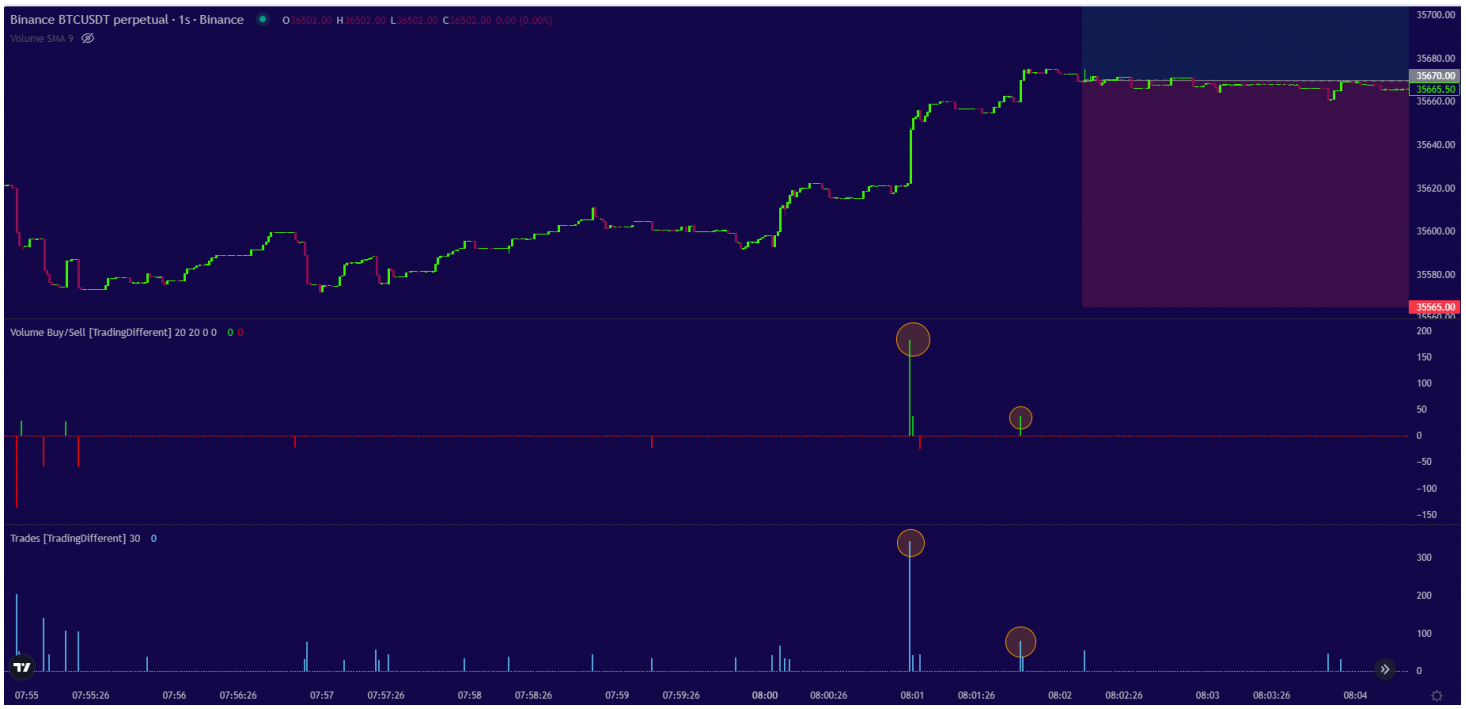
Subsequently, after the high-frequency bots execute sell orders, we observe them entering buy positions. The first alert is evident with 343 trades and 183 BTC. Then we see confirmation with 79 trades and 38 BTC.

Looking at the Liquidation Heatmap, we see that we have target, 100x Pools with a lot of volume. The bots will manipulate the price to liquidate those Short positions.

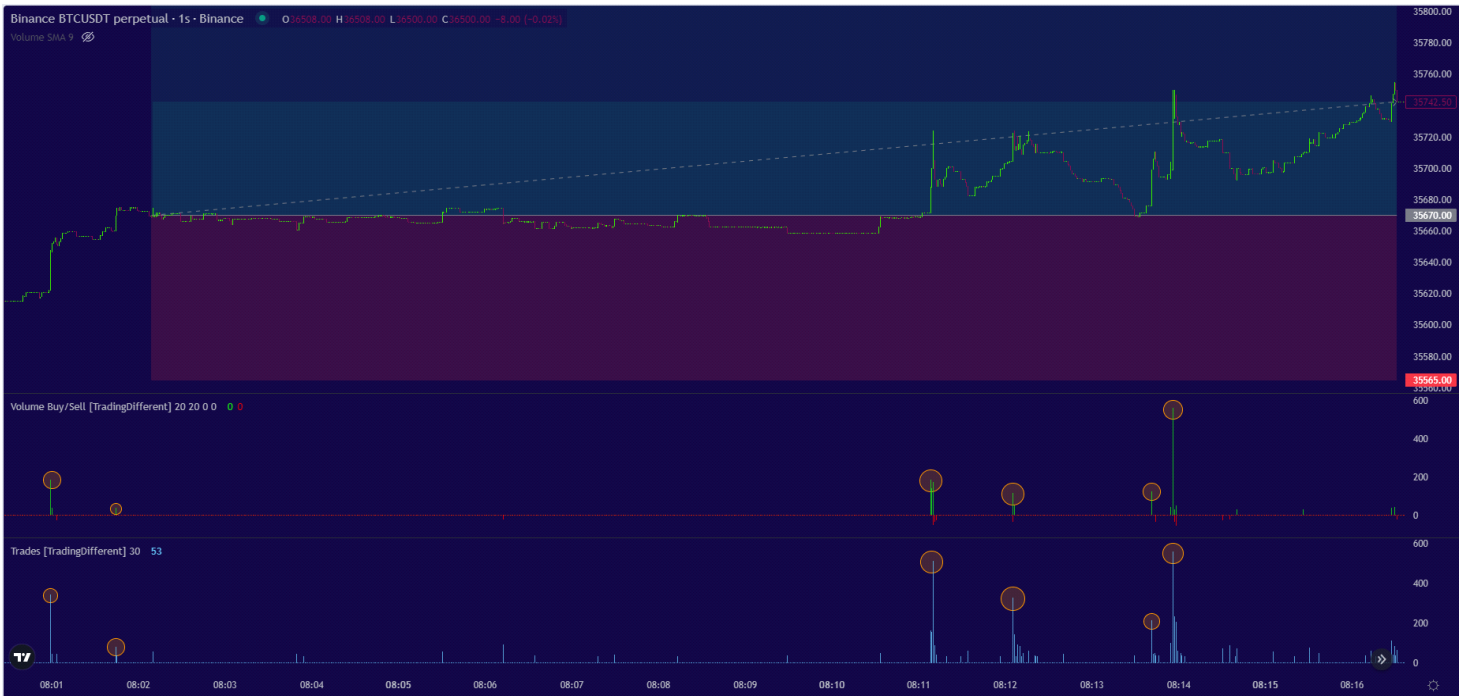


We place Take Profit at the end of the Pool.

We placed Stop Loss below the price where the upward bots were evident.

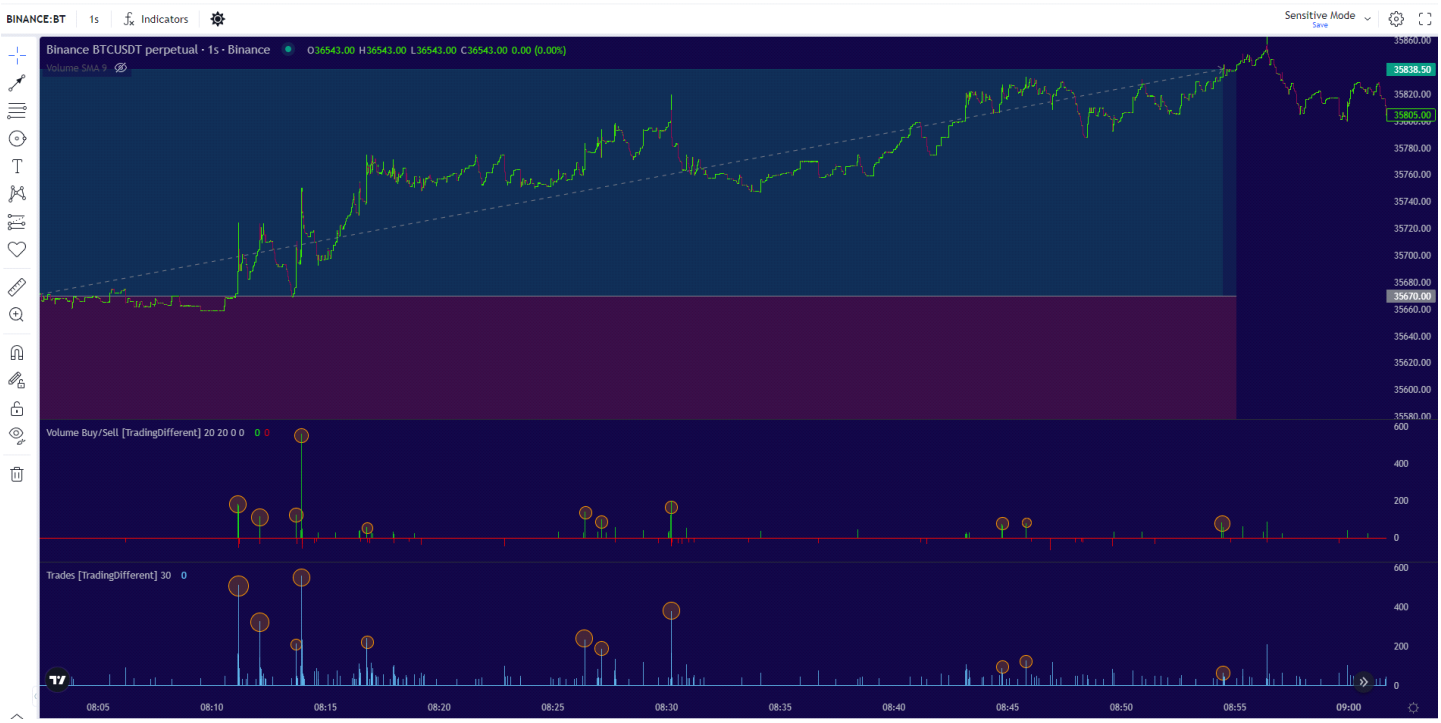


Minutes later, we began to see more confirmations from the bots of this upward movement to liquidate. Therefore, our trade becomes more reliable to achieve our Take Profit.



In the event of observing a situation different from this, where we see bots appearing with sell orders against the initial movement, we can decide to secure our trade by taking partial profits and placing stops at the break-even point.

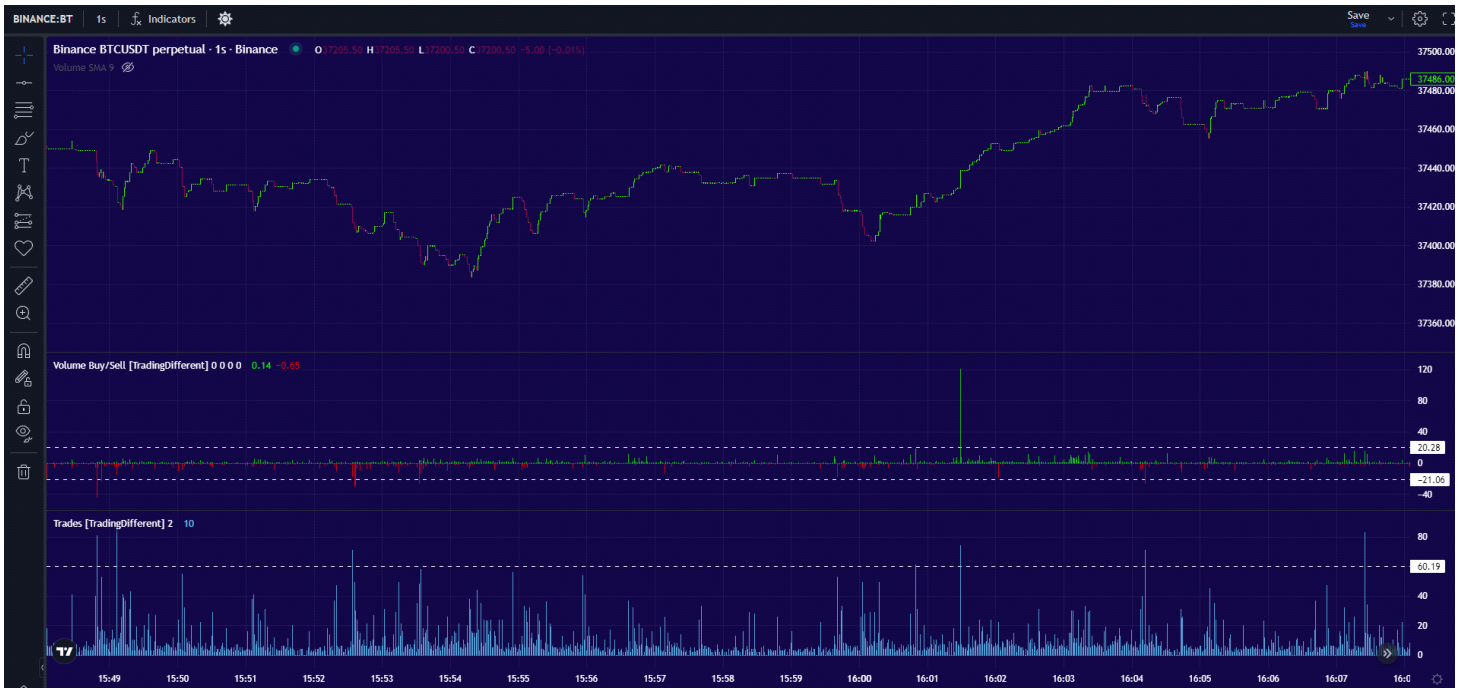
Finally, we see how the price reaches the Take Profit target, where there was a consistent presence of buy orders with a significant number of trades per second.



Let's analyze the following scenario in Short:

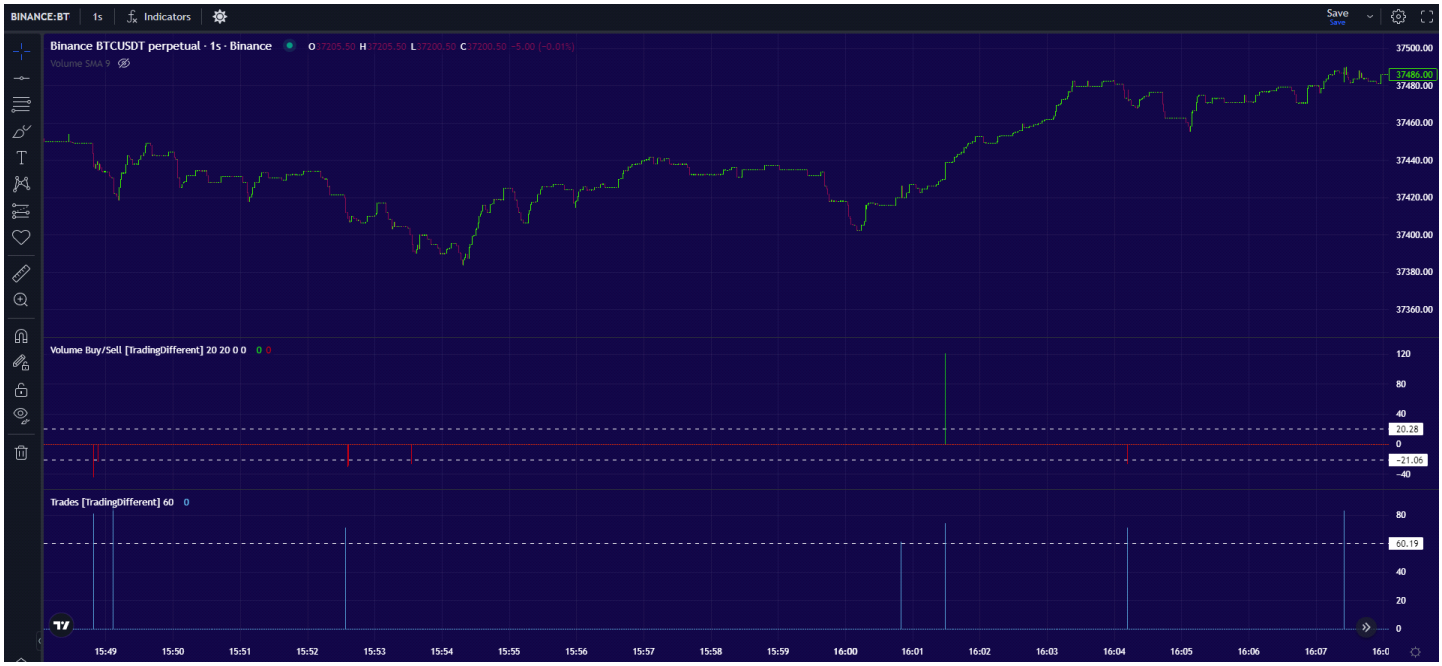
Near the price, we have a Pool with significant liquidity at the bottom.

We analyze the High Frequency chart and detect the Buy/Sell volume and trades to apply filters.



Volume greater than 20 btc, and more than 60 trades per second.

With the filters, it would look like this:



We observe how it was previously acting in sell orders, then there is some activity in buy orders. However, the price remains within a range, without clear manipulation being defined

Minutes later, the High Frequency appears again in Sell, marking the first alert and giving us several confirmations while the price begins to move downward. We have confirmation of liquidity with the Liquidation Heatmap graph, so we seek to accompany the downward manipulation.

We set Stop Loss above the price where the high frequency bots started to act, and I project my Take Profit towards the point marked in the Pools.

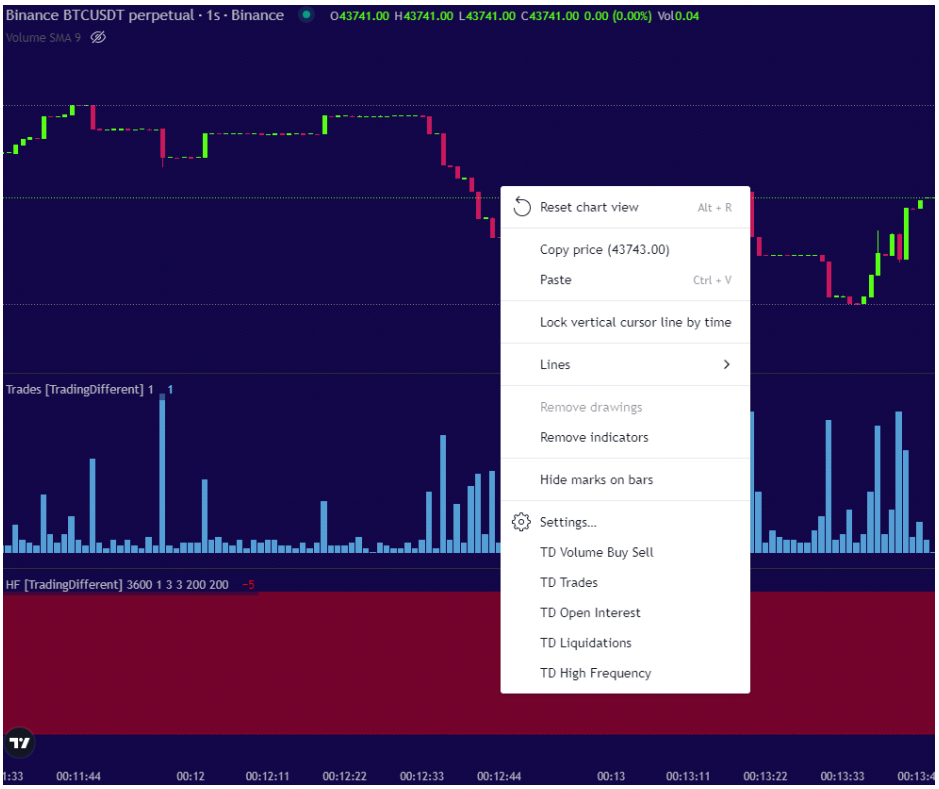
We observe that throughout the manipulation, sell trades and volume prevail, but they are not operating alone in the market, and some buying strength starts to appear. Until the end of the movement, they execute a large number of trades and volume in buy orders to halt the decline.

We know that the buy volume is composed of the same profit-taking orders from the bots that previously generated the downward movement. Finally, the price reaches the Take Profit at 37,149, executing the last trades in sell orders with a significant volume. After that, we see how the downward manipulation disappears

TD High Frequency

After having seen several examples and understanding how high frequency bots act in the market, we can start using the “TD High Frequency” indicator.

We proceed to right click on the chart and add it:



TD High Frequency will give us a summary of how high frequency bots are acting, based on the number of trades per second.

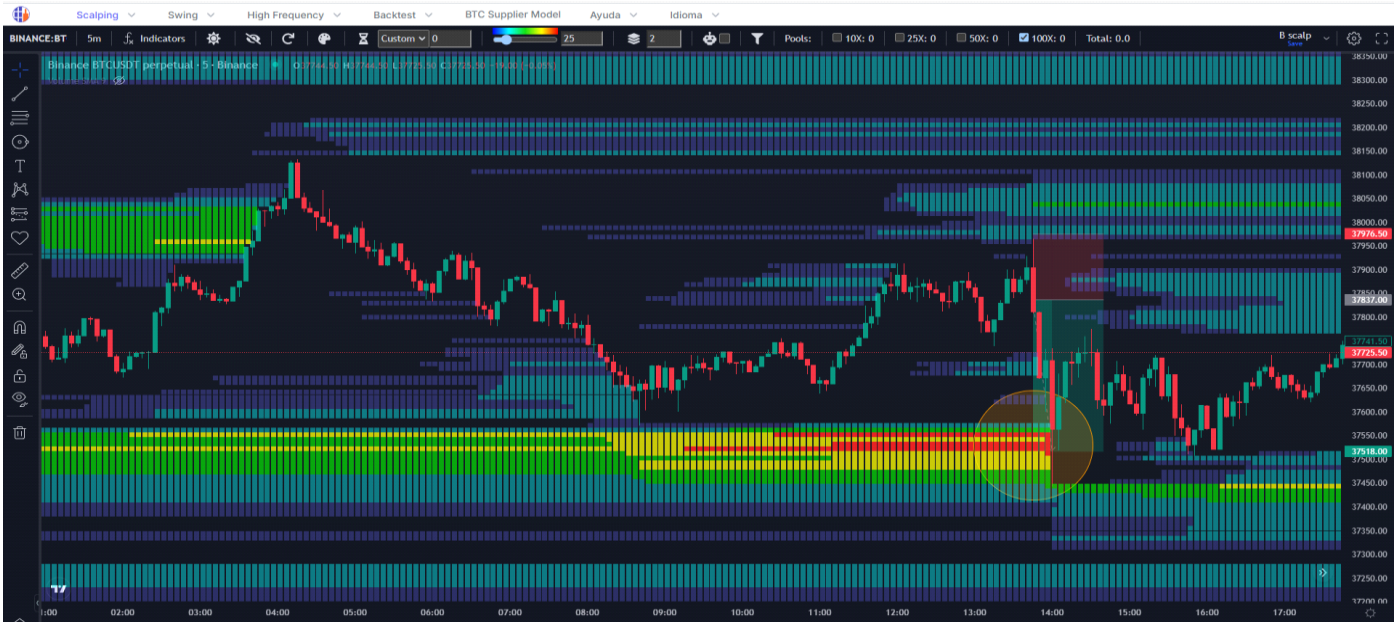
That is to say, once the market has been analyzed with "Trades" and "Buy/Sell Volume," we can proceed to configure the HF indicator. The idea is to filter the HF with the same characteristics previously filtered in "Trades." This way, we can continue trading for the rest of the day without the need to measure trade size per second constantly. We will have an indicator that will give us a visual summary of the direction in which trades are being executed.

Let's look an example:

We have the following scenario on the Liquidation Heatmap chart.

After the price has liquidated the 100x Short Pools around 04:00 UTC, the price bounces back to the range and begins to accumulate liquidity at the bottom. These are the new positions in Long at 100x, which as the minutes go by, increases more and more.

Therefore, we start looking for positions in Short, since there is a clear target that sooner or later high-frequency bots will look for. As more time passes, more liquidity accumulates and the probabilities of liquidating the Pool increase.



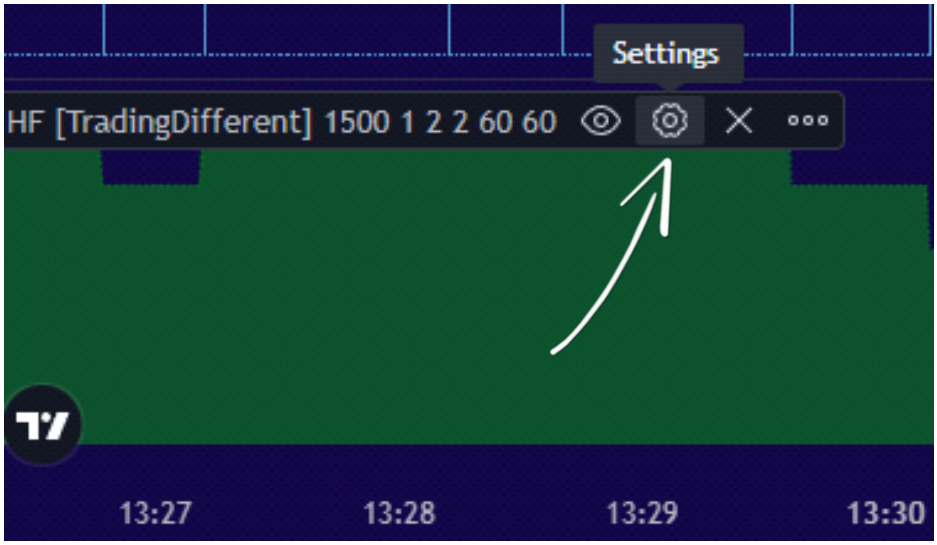
We move on to the High Frequency graph to filter the “Trades” and “Buy/Sell Volume” indicators.

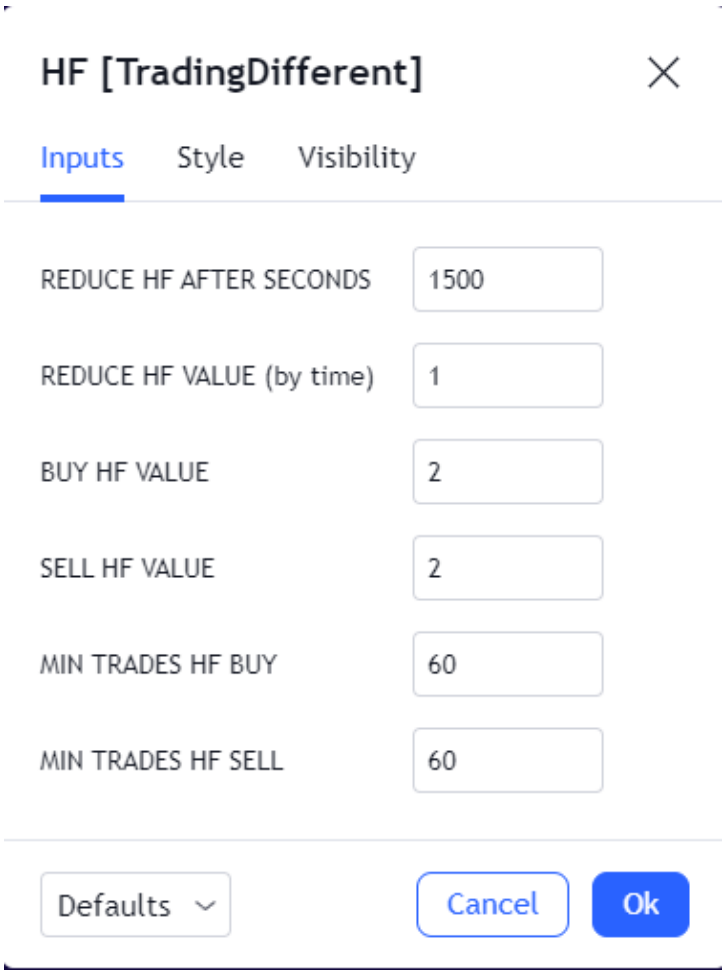
We carry out the same procedure, we analyze several minutes before and look for trade sizes and volume that are out of the average.

In this case, Volume greater than 30 btc and trades greater than 60 per second.

We proceed to filter and we have cleaner data:

Now we go to the HF indicator. To configure, click on “Settings”:





Let's look at each of the fields:

MIN TRADES HF BUY: is the minimum number of BUY trades per second, which the indicator will consider to add.

MIN TRADES HF SELL: is the minimum number of SELL trades per second, which the indicator will consider to add.

BUY HF VALUE: when MIN TRADES HF BUY is met, add this number of units to the indicator.

SELL HF VALUE: When MIN TRADES HF SELL is met, subtract this number of units on the indicator.

REDUCE HF AFTER SECONDS: the HF indicator will reduce a number of units when the seconds established in this field have passed.

REDUCE HF VALUE (by time): reduces X number of units in the indicator when the time reaches the previously established seconds.

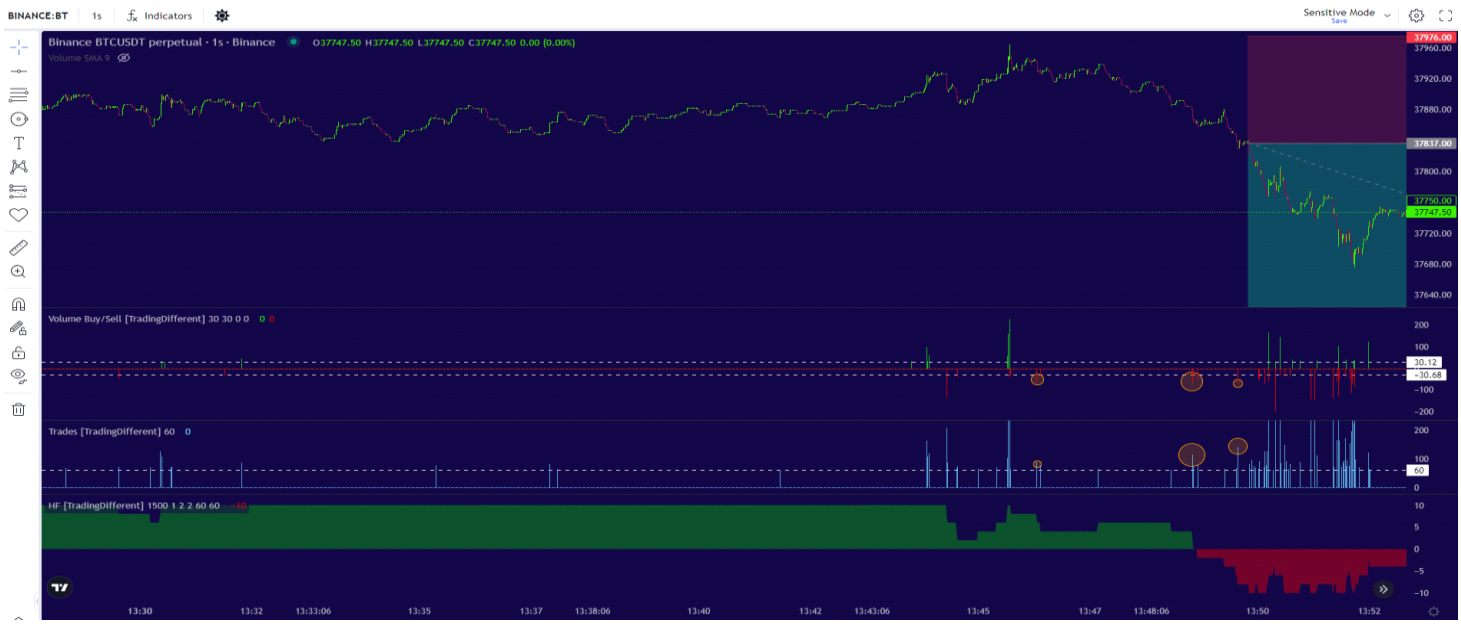
Then we filter, as seen in the figure. Where we are interested in the MIN TRADES greater than 60, both for Buy and Sell, based on how we had previously filtered the “Trades”.

As we are looking for a quick scalping operation in favor of 100x Pools, we take the criterion that, after 1500 seconds, the indicator decreases 1 unit.

And finally, the High Frequency indicator has a measurement range from -10 to +10, always starting at the value 0. It will add when the MIN TRADES HF BUY filter is met and will subtract when MIN TRADES HF SELL is met. In this case we select that it adds and subtracts the same number of units, “2” in both cases. If you want to see the indicator with more sensitivity, you can choose to decrease that value to “1”.

Analyzing the specific example, we see that the High Frequency indicator began to show red at 13:49:00, just when we found the confirmation of Trades + Sell Volume.

Therefore, that is what we are looking for with this indicator, which can summarize how the bots' activity is based on the pre-established parameters of Trades and Volume.

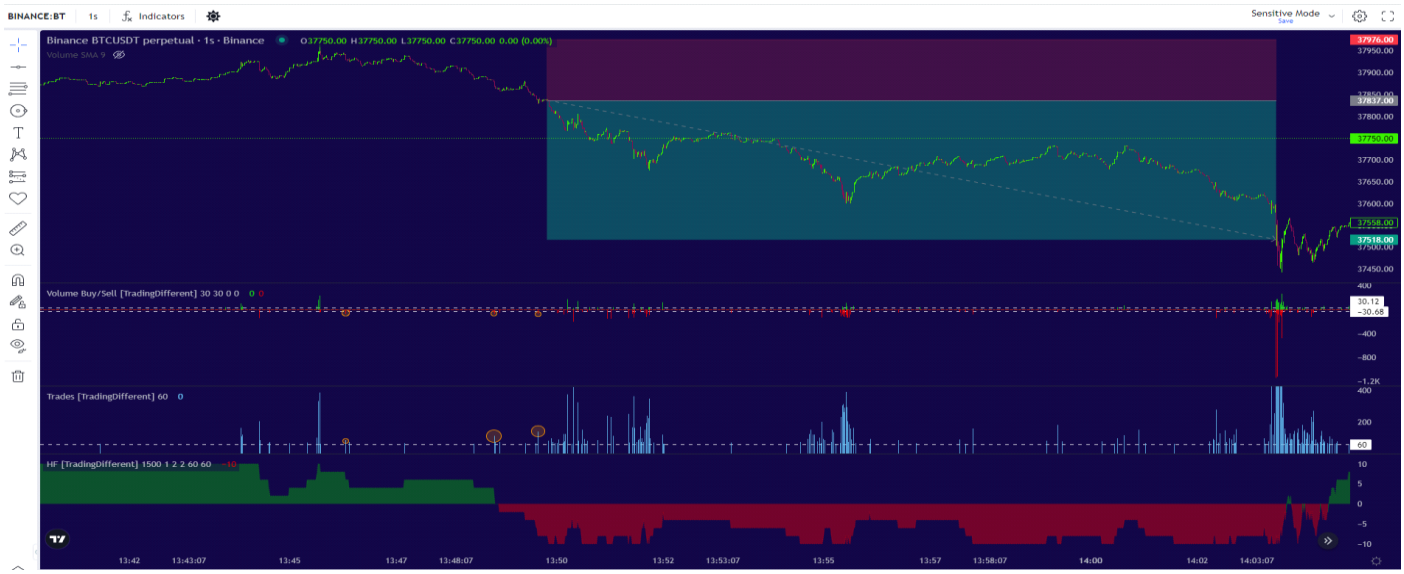


Another detail to analyze is how the High Frequency indicator was showing green and from 13:45:00 its decrease began to be evident, as a result of the appearance of activity in Sell.

Finally, the trade ends up taking place in a couple of minutes, looking for the objective of the Pools.

A very important aspect to highlight is that a lot of high-frequency bot activity is evident when the price enters the Pools and is liquidating the positions.

After this great activity, the high frequency bots begin to force the price in the opposite direction.



TD Open Interest

The Open Interest indicator is added to the chart in the same way as we did with the previous indicators.

You will see it represented with a green line.

It will help us, to be able to identify in more detail, if the operations that are being executed at the level of seconds are to open or close positions.

This is very useful information to operate trades towards the Pools. Since if it meets the established conditions of Trades + Volume, and also increases the Open Interest, it offers us a very high probability of being successful in the trade.