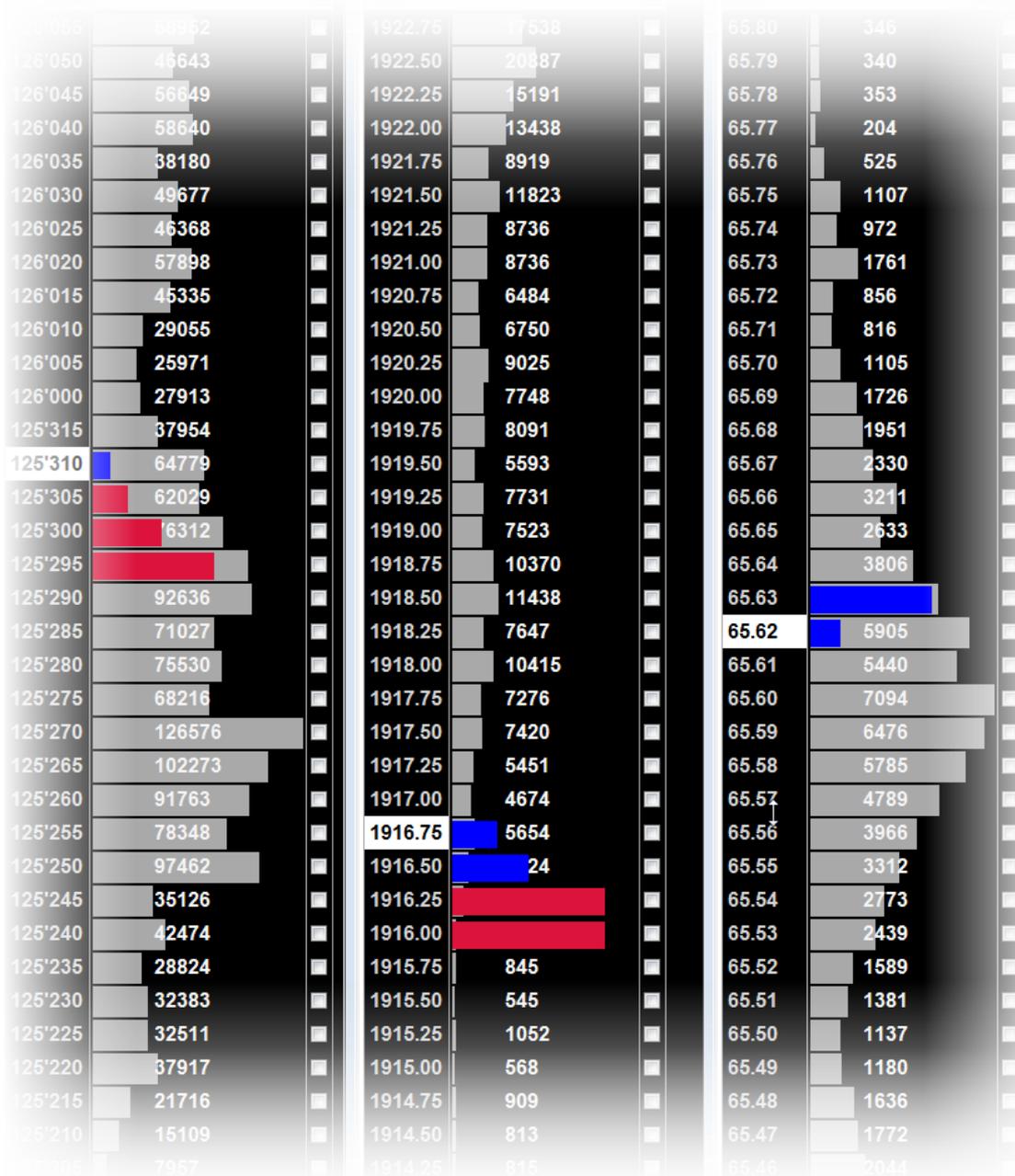




PriceSquawk User Manual



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Revision History

Date	Version	Description
2013-07-20	1.0	Version 1 Release
2013-08-15	1.1	Version 1 Update

2013-09-01	2.0	Version 2 Release
2013-09-23	2.1	Version 2 Update
2013-11-12	2.3	Version 2 Update
2014-02-17	3.0	Version 3 Release
2014-07-17	4.0	Version 4 Release
2014-12-10	4.5	Version 4.5 Release
2015-05-31	4.5.1	Version 4.5 Update
2015-08-18	4.5.3	Version 4.5 Update
2015-10-21	5.00	Version 5.0 Update
2016-01-05	5.1	Version 5.1 Update
2016-02-17	5.2	Version 5.2 Update
2016-05-18	5.3	Version 5.3 Update
2016-08-10	5.4	Version 5.4 Release
2017-07-03	5.5	Version 5.5 Release

Release Notes

Version 1.1 August 15th, 2013

- PriceSquawk windows hidden in inactive workspaces. Sound will still play, so user must mute PriceSquawk or close the workspace if does not want to hear it.
- Added Auto Center functionality for Pitch (and Price Ladder)
- Bug fix – Volume Control, changing Minimum > Max, Max < Min, and similar scenarios was causing PriceSquawk to fail, and NinjaTrader in some instances.
- Config tab settings synced with Indicator properties, and saved with the workspace.

Version 2 September 1st, 2013

- Sample sounds on changing settings
- Auto Center functionality changed to Ticks (instead of a timer)
- Added auto center warning
- Added Time Window option for accumulating trade volume

Version 2.1 September 23rd, 2013

- Added configurable sound level volume controls
- Added check / uncheck all alert checkbox
- Changed auto center warning to use alert sounds
- Bug fix – mute button was effecting other PriceSquawk configurations
- Bug fix – volatile market instruments (such as ^tick) were updating price range of PriceSquawk ladder excessively, sometimes overloading PriceSquawk

Version 2.3 November 12th, 2013

- Added Alert note duration option
- Modified Duration setting to 0.01s increments
- Changed auto center warning to use alert sounds
- Bug fix – Pitch out of range causing PriceSquawk to fail (^TICK and CL)

Version 3.0 February 18th, 2014

- Added Bid / Ask selection and Mute option for Left / Right Speaker
- Added Bid Ask Pitch Mode
- Added Smart Trade Volume Accumulation option
- Added Aggregate Volume Settings
- Renamed New Bid / Ask Mode, New Price Only Mode, Use Accumulated Volume and Use Time Window to New Bid / Ask Alerts, Price Action Mode, Volume At Price and Volume in Time

Version 4.0 July 17th, 2014

- Added separate Bid and Ask sound options
- New licensing management (Misc menu -> About)
- Added always on top feature
- Added PriceSquawk Settings manager (independent of workspace)
- Added persistent Alerts (saved with workspace or settings)
- Added persistent Column layout (saved with workspace or settings)
- Level 1 datafeed required only for all features including New Bid / Ask
- Multithreaded performance improvement
- Bug fix – Centering pitch and display on startup

Version 4.5 Nov 27th, 2014

- Jigsaw Reconstructed Tape integration
- Added equalizer bid / ask color change
- Added equalizer color intensity (to match audio volume)
- Added display color settings (text color, background color etc)
- Added resettable volume profile to Equalizer (Pro version)
- Added Resizable rows
- Added price digits displayed setting
- Added local and global hotkeys
- Alert Acknowledge hotkey (for x seconds)
- Fixed certain instruments not saving with workspace

Version 4.5.1 May 31st, 2015

- Auto mode for Volume Control
- Performance improvements for Volume in Time mode
- Bug fix for minimized windows

Version 4.5.3 August 18th, 2015

- Performance improvements for graphics and sounds (noticeable for big numbers)
- New Volume Profile modes
- Session alerts
- Bug fixes – Licensing window displaying on open, volume profile colours and auto thickness

Version 5.00 October 21st, 2015

- Support for custom soundfonts
- PriceSquawk sound library integration (voice synthesis and new digital sounds)
- New Bid/Ask mode expanded to detect bid/ask pulled, bid/ask taken, new bid/ask
- Inside market view
- Voice announcements for Buying / Selling and new Bid/Ask modes
- E-mini price announcements
- Pre-configured settings

Version 5.1 Jan 5th 2016

- Added individual Volume Alerts based off Min, Middle, Max setting and Volume Mode
- Added individual Trade Size alerts based off Min, Middle, Max setting
- Added ability to open pricesquawk setting files and save configurations to your scheme
- Stereo and Mono sound bug fixes

Version 5.2 Feb 17th 2016

- Increased to 42 parallel PriceSquawk in PriceSquawk mode
- Added classic instrumental sounds to PriceSquawk soundfont
- Added Price / pitch inversion option
- Changed New Bid/Ask to Squawk Mode
- Added price announcement to Squawk Mode
- Added smoothing factor to Auto volume analysis
- Bug fix – Alert sound in one PriceSquawk affecting other alert sounds

Version 5.3 May 18th 2016

- All Volume Modes now configurable from one PriceSquawk
- Added ability to filter trade sounds using multiple volume conditions simultaneously
- Scheduled alerts and warnings
- Display Volume profile and Inside market simultaneously
- Smart Volume alert fix (alert raised once per price)
- Volume Alert mode selection (beeps, voice, full speech etc)
- Can enter custom alerts sounds for each volume alert

Version 5.4 Aug 10th 2016

- Added Bid / Offer Volume Alerts and Trade Sound control
- Added Male Voice option for all price announcement and volume alerts
- Enhanced Price Alerts (includes actual price)
- Added virtual trading pit mode
- Improved Squawk filtering by trade sounds so advanced trade sound filtering can be used to mute / amplify the squawk (when enabled)
- Added 'Other' instrument selection for synthetic PriceSquawk Desktop instruments

- Fixed Settings Bug

Version 5.5 Jul 2nd 2017

- Global Volume control
- PriceSquawk Wizard
- Smart Volume changes (can now set price range to accumulate)
- Visualization performance improvements
- Above offer / Below bid trade sounds and alert sounds

PriceSquawk Desktop Requirements

- iQFeed Client 5.1+ or
- X_Trader Pro 7.17+
- CQG IC (continued support for PriceSquawk Desktop 1.5.4 only)

PriceSquawk Add-On Requirements

- [Jigsaw Daytradr](#), NinjaTrader 7, NinjaTrader 8, Sierra Charts or Jigsaw Trading Tools (Reconstructed Tape)
- Live Level 1 tick data feed for NinjaTrader

Note: It is recommended to always use the latest release of Jigsaw Daytradr and NinjaTrader downloadable from the NinjaTrader website, or the latest Jigsaw Trading Tools.

To download your free NinjaTrader software visit:

<http://www.ninjatrader.com/download-registration.php>

NinjaTrader 8 Recommended PC Requirements are:

- Windows 7, Windows 8, Windows 10, Windows Server 2008 w/ Platform Update, Windows Server 2008 R2 or later
- 2 (GHz) or faster quad core 64-bit processor
- 8 GB RAM
- Microsoft .NET Framework 4.5 (pre-installed on most PC's and can be downloaded here: [Microsoft .NET Framework](#))
- Screen resolution of 1024 x 768
- DirectX 10 compatible graphics card
- SSD Hard Drive (recommended)

PriceSquawk will work with the free version of NinjaTrader 7/8 and NinjaTrader compatible datafeed. As long as you can view tick data on a NinjaTrader chart then you should be able to hear trade sounds.

Jigsaw Daytradr Installation

PriceSquawk is installed with the Jigsaw Daytradr platform. Open PriceSquawk from the Reconstructed Tape tool.

NinjaTrader Add-On Installation

1. Ensure NinjaTrader 7 or 8 is installed and configured with a live tick data feed (see above)
2. Run the automatic PriceSquawk installer (download available at <http://www.pricesquawk.com>)
3. Close NinjaTrader if it is open
4. Run PriceSquawk_Latest_Installer.exe (it will automatically copy the necessary indicator files to your NinjaTrader directory. Note you do NOT use the NinjaTrader import utility)

You should now be able to add the PriceSquawk_V5 indicator to a chart which will subsequently open the PriceSquawk window. To uninstall run "Uninstall PriceSquawk.exe" located in your NinjaTrader 7\bin\Custom directory.

For information on using NinjaTrader 7 and 8 and examples on adding indicators to chart visit the NinjaTrader 7 video library:

http://www.ninjatrader.com/support/helpGuides/nt7/index.html?video_library.htm

PriceSquawk Desktop Licensing

Please visit www.pricesquawk.com/pricesquawk-desktop to view subscription and purchase options.

Add-On Licensing

As of PriceSquawk V4 two types of license exist:

Lite License

This license is available as a one off lifetime license purchase and gives access to the core PriceSquawk functionality as an Audible time and sales tool with three volume control thresholds, as well as Price Alerts, Speaker Control and Trade Sound control.

Professional License

The Professional license gives full access to PriceSquawk functionality including existing and future advanced features (marked with Pro in this manual). The Professional License is available for a small monthly subscription or a lifetime purchase. For more information on subscription options and comparisons of Lite and Pro licenses, visit www.pricesquawk.com/pricing. Active subscriptions can be managed from within Paypal (more info [here](#)).

Free Version

Free version gives you access to the classic trade sounds and price alerts. It can be configured to hear Buy and Sell trade sounds. **You can use the Jigsaw Recon tape to filter trade sounds when using the free version.**

Note: Once you have purchased the Lite Lifetime License, Professional Subscription or a Professional Lifetime License, you will receive license activation instructions via email.

Jigsaw Reconstructed Tape

PriceSquawk can be used with Jigsaw Trading's Reconstructed Tape in Jigsaw's Daytradr platform and as part of the Jigsaw Trading Tools packages in NinjaTrader, OEC/S5, MultiCharts.NET and Tradovate. Traders will need a Jigsaw Trading Tools license and a PriceSquawk license to take advantage of this combination. A two week free PriceSquawk trial is automatically activated when opening PriceSquawk from the Recon Tape. Once the trial has expired PriceSquawk defaults to the free version which lets you hear classic Trade Sounds only as generated by the recon tape.



Time	Price	Volume
19:47:05	1223.2	
19:47:05	1223.1	
19:47:04	1223.1	1
19:47:03	1223.2	2
19:47:03	1223.1	8
19:47:02	1223.0	3
19:47:02	1223.0	6
19:47:02	1223.1	1
19:47:02	1223.1	10
19:47:00	1223.1	10
19:47:00	1223.0	1
19:46:59	1223.1	1
19:46:59	1223.1	1

Figure 1 - Jigsaw Reconstructed Tape

When opened from Jigsaw's Reconstructed Tape, PriceSquawk receives its data feed from the Recon Tape, turning it into an audible reconstructed tape. This is a powerful combination for observing real trading activity, as reconstruction of the 'exchange split' occurs to help identify actual large trader's activity. You can also add some pre-filtering of data by using the Recon tape trade filter settings.

One example of this being useful is using two (2) Recon tape windows for one market to split Buy vs Sell trades to separate PriceSquawk windows. You can then use the PriceSquawk volume detection modes (Auto, Volume in Time etc) to give you feedback of elevated buying vs selling behaviour.

All of the usual Reconstructed Tape controls can be used to control what is displayed on the tape, and PriceSquawk will audify (sonify) the information displayed. Reconstructed Tape users can thus hear the price, trade size, bid / ask activity, and pace of the tape, plus denominations of these market components using the PriceSquawk tools such as accumulated volume at price / volume in time.

More information on the Reconstructed Tape can be found on the Jigsaw Trading website:

www.jigsawtrading.com/order-flow-software/

www.jigsawtrading.com/learn-to-trade/free-order-flow-analysis-lessons/lesson6/

Overview

PriceSquawk Audible Market Technology adds another dimension to the markets, immersing traders in a real-time audible market environment. You can hear buyers lifting offers, sellers hitting the bids, how aggressive they are, and the resulting price action. Listening to the market improves trading performance, enhances your pattern recognition skills and accelerates the learning curve for market intuition through constant audible market exposure.

By just listening, traders can constantly monitor the order flow, price action and pace of the market. PriceSquawk can be configured as an audible market tape, bid /ask strength meter and order flow alert tool across multiple markets, freeing up monitor space and providing flexibility to move around the trade desk and office while listening to market information. PriceSquawk does this by using the Level 1 market information received from data providers and mapping it to audible properties. In general individual trades get mapped to a unique 'pitch' representing price, and the volume traded is represented by 'loudness'. As of V5 voice announcements are also incorporated for some markets. See the [Trade Sounds](#) section for more information on how this works.

PriceSquawk can also be used as a digital Squawk to announce all sorts of market events on top of the normal Price Action commentary. Visit the [PriceSquawk youtube channel](#) to see how this works for the E-mini Squawk.

PriceSquawk Wizard

The PriceSquawk wizard gives you the ability to configure PriceSquawk quickly out of the box. It asks some questions to turn on / off the main PriceSquawk features and gives you a good idea of the PriceSquawk capabilities. Access the wizard from the Misc menu.

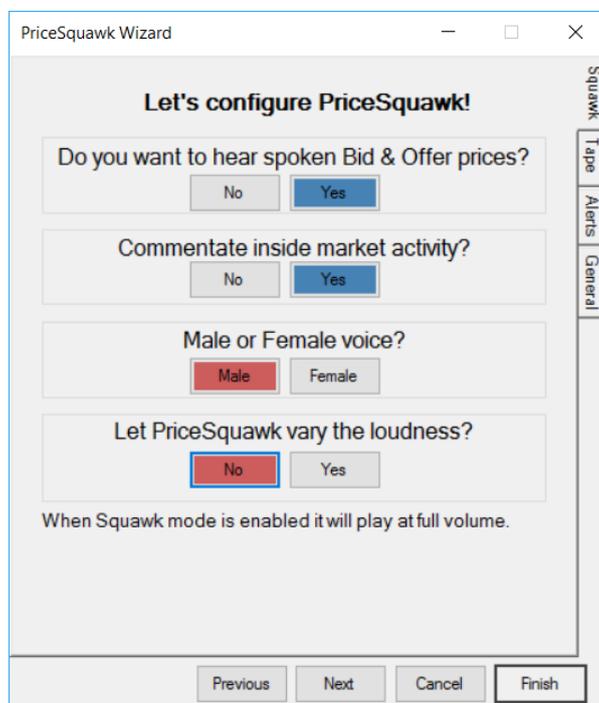


Figure 2 - PriceSquawk Wizard

Sound Menu

PriceSquawk functions around a number of different Sound Mode configurations that can be enabled and disabled from the main Sound menu. All modes can work together¹ to provide detailed real-time audible market information, or just as easily can be used in isolation should the trader only wish to use PriceSquawk for particular features, such as Trade Sounds. By default Trade Sounds, Alerts and basic Volume Control and Volume Alerts are enabled.

Play 'Buy & Sell' trade sounds

Play 'Alert' sound for trades at selected price levels (checkboxes)

Filter trade sounds and change loudness based on the size of trades or volume accumulated (depends on Volume mode selected from Config tab)

Play an alert when certain volume is traded based on Volume Control settings and Min, Middle, Max settings

Enable squawk mode for inside market commentary and bid/offer price announcement

Only play trade sounds on first trade at new price

Figure 3 - Sound Menu

Misc Menu

The Misc Menu allows access to further user options and licensing details, and control. The Wizard provides a walkthrough configuration window for quickly and intuitively setting up PriceSquawk for your needs. Hotkeys for certain actions can be configured, visual settings and advanced controls can be configured from the Options window, and to update License details or view your subscription status you can open the License and About windows.

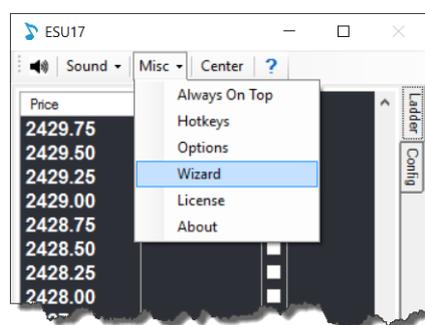


Figure 4 - Misc Menu

¹ Except New Price Only which will override the Trade Sounds to only play a sound the first trade at a new price.

PriceSquawk Ladder

The PriceSquawk window contains two tabs, Ladder and Config. The Ladder tab allows the user to select price levels for [alerts](#) using checkboxes. A basic equalizer shows if a sound was played at the bid or offer (color settings) and how loud it was (color intensity), and the last trade price is highlighted. If alerts are disabled the alert column is highlighted orange. Next to the Sound menu is the Misc Menu where the License details can be accessed from the About window, and 'Always On Top' mode can be selected. Pressing the Center button at any time will reset all sounds to the center pitch which is a Middle C. The price ladder will also center on the last traded price. Without pressing this button the pitch will increase / decrease with price to its maximum and minimum allowable values depending on the price action. See the following diagram for a summary of the features of the Ladder tab.

Ladder View

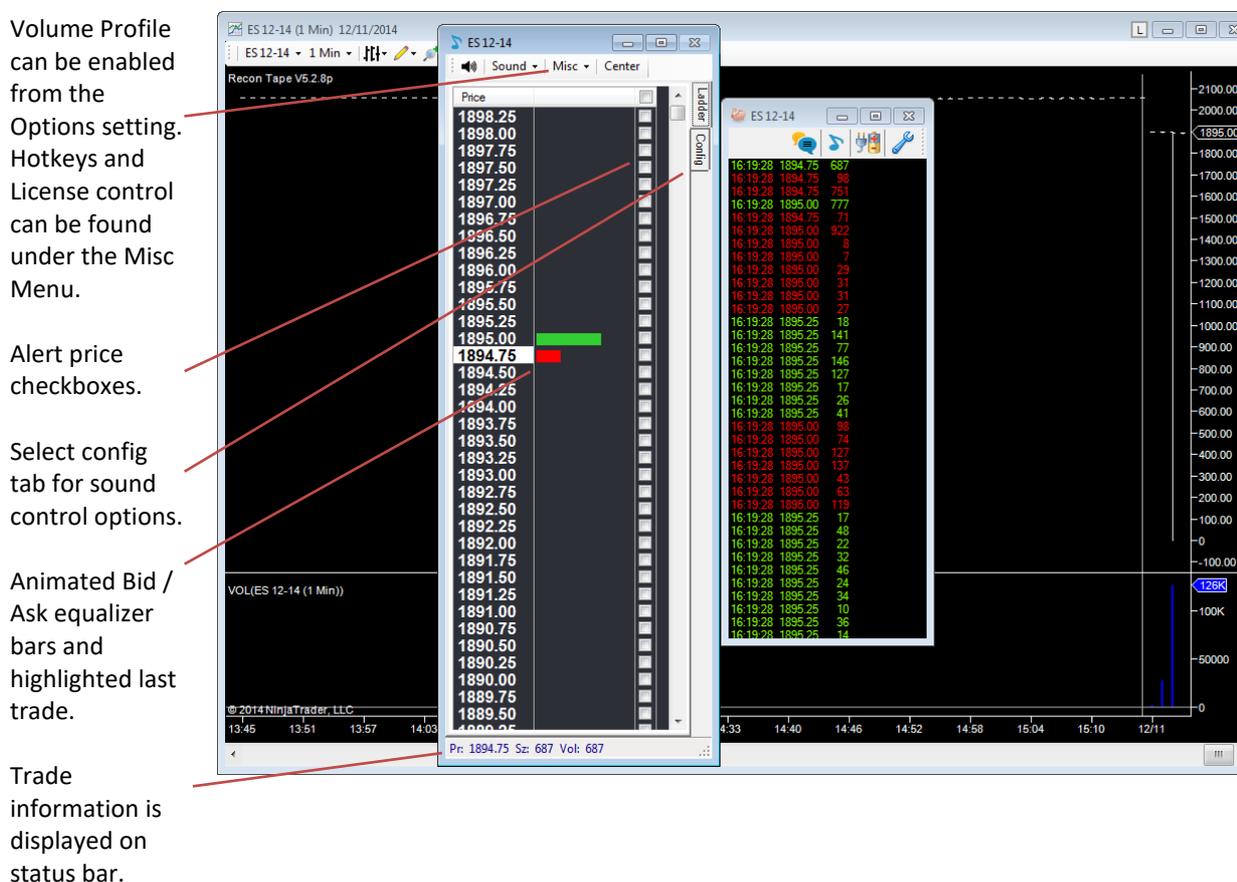


Figure 5 - Ladder Tab

Configuration Tab

The Config tab allows the trader to set global settings for PriceSquawk and specific settings relevant to each volume mode e.g. Volume at Price alerts, Time and Sales trade sizes etc. The Bid and Ask sounds are what the trader will want to experiment with to find an appropriate sound for each instrument monitored with PriceSquawk. This is the sound type that will be heard for buy and sell trades unless it is an alert price. See the following diagram for a summary of the features of the Config tab. Most settings will play a sample sound when you change them for easy configuration.

Configuration View

Mute PriceSquawk

Enable / Disable Trade Sounds and other modes from the Sound Menu

Save your Settings here independent of the workspace

Select from over 100 sound effects for buy and sell trade sounds and alerts

Auto Center Alert can be played every time price moves X number of minimum price increments

Volume Control lets you select different volume modes for identifying volume conditions to control the loudness of trade sounds and triggering alerts

Volume and Size thresholds for controlling trade sounds and triggering alerts for selected volume mode

Hear only a different pitch for Bid vs Ask trades (no Price information)

Aggregate X number of contracts in data feed before processing data with PriceSquawk

Enable stereo splitting of buy vs sell trades, mute buy or sell trade sounds or direct all sounds out left or right speaker

Global volume controller

Last trade price, last trade size, calculated volume for selected volume mode

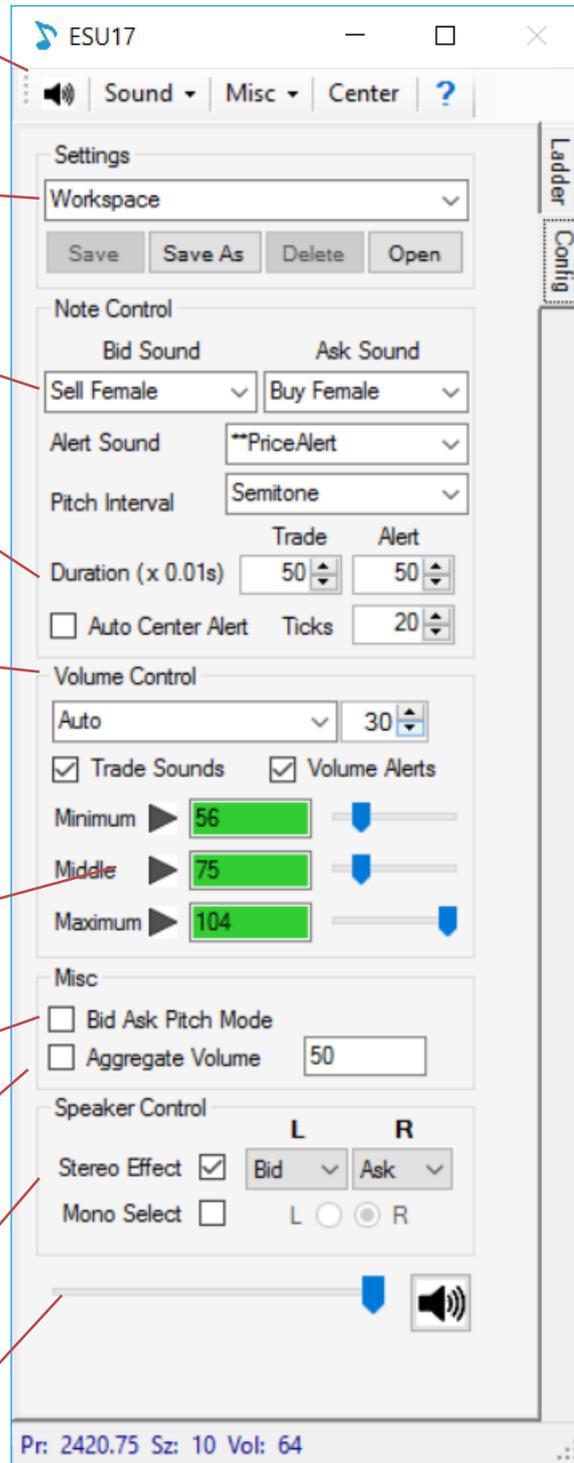


Figure 6 - Configuration Tab Overview

Settings

The Settings manager lets you save PriceSquawk configuration for later use. **By default the 'Workspace' setting will display on opening PriceSquawk because the last saved workspace configuration overrides the selected setting upon loading a workspace.** It is recommended to save your preferred configuration/s using this Settings option in case your workspace changes. You can distribute your settings to others to use by copying the Settings file located in My Documents\PriceSquawk\settings.xml.

Your PriceSquawk size and position are also saved within the settings so don't be surprised if PriceSquawk jumps around your screen when you change the settings. To save your current PriceSquawk configuration press the 'Save As' button. To delete a setting make sure it is selected in the dropdown list and then press the 'Delete' button.

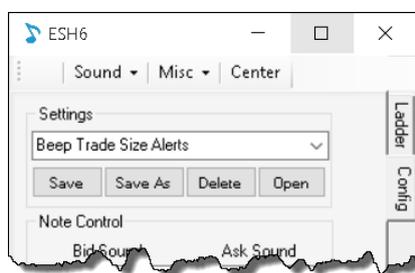


Figure 7 - Settings Manager

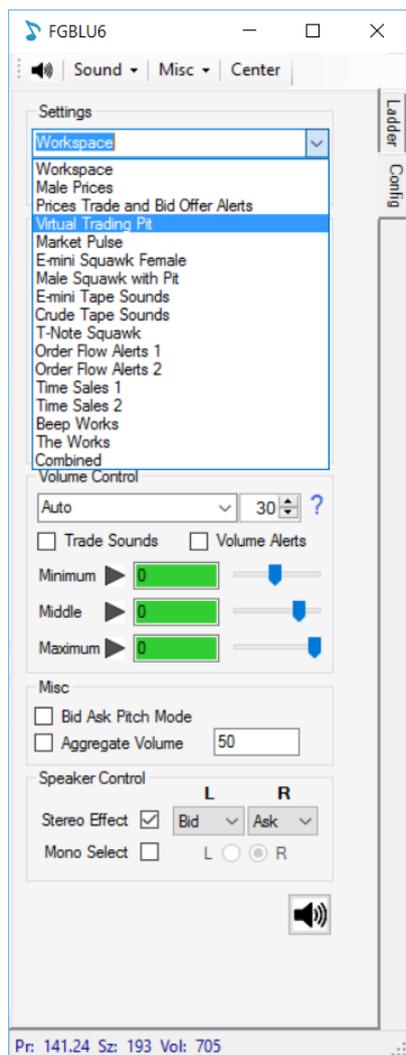
Opening Settings

You can open a valid PriceSquawk settings file using the 'Open' button. This will add the settings located in that file to your current settings list. You can then save them to your current settings scheme using 'Save' and 'Save As' button. This makes it easy to share your settings, split settings amongst multiple settings files (by renaming your My Documents\PriceSquawk\settings.xml) and for distributing demonstration settings with each new release.

For example, if you are provided with a settings file with a future PriceSquawk upgrade that contains demonstration settings of the new features, you can select each configuration too gain insight to how PriceSquawk can be configured with the new features. You can then modify the settings to suit your markets and sound preference, then save it to your personal settings file using Save (keep the same name) and Save As (rename).

Preconfigured Settings

PriceSquawk opens with default preconfigured settings to help get you started. You can adjust any of these settings and save them again. The range of settings demonstrates the various ways that PriceSquawk can be utilized to add audio to your trading setup, and for particular markets. Market specific settings (e.g. E-mini Squawk Female) can be applied to any market, though you may need to change any enabled volume settings under the '[Volume Control](#)' area (Minimum, Middle, Maximum) to suit your market conditions.



Male Prices – Male voice price announcement

Prices Trade and Bid Offer Alerts – Female voice price announcement with 1000/2000/4000 size bid offer alerts for inside market

Virtual Trading Pit – Sounds from the Pit that increase and decrease in loudness in line with trading activity

Market Pulse – A market pulse that provides continuous feedback of volume conditions. No Pulse = Little Volume, Soft pulse = Normal Volume, Louder pulse = Elevated Volume, Loudest Pulse = Abnormal Volume

E-mini Squawk Female – The original E-mini squawk using a female voice

E-mini Squawk Female – Full e-mini focused squawk with price action announced, 50+/100+/200+ lot trade sizes called, large volume absorbed at price announced and increased order flow alerts

Male Squawk with Pit – Full male squawk of price, volume, bid offer and large trader alerts with pit sounds enabled

E-mini Tape Sounds - Simple buy/sell trade sounds that are heard only when order flow is increased, with 50, 100 and 200+ lot trade alerts.

Crude Tape Sounds - Simplified trade sounds that increase in loudness with increased volume. 20, 50 and 100+ lot trade alerts.

T-Note Squawk – Full T-Note squawk with price action announced, large volume absorption alerts, 50+ trades hit / lift, 100+ and 500+ lot trade alerts.

Order Flow Alerts 1 - Hear minimalist tick sounds only when volume is elevated with no price information. Requires a few minutes of initial data buffering. 100, 500 and 1000+ lot trade alerts (configure as needed)

Order Flow Alerts 2 - Hear 'Buy' and 'Sell' announcements with price varying pitch when volume is elevated. Faint announcements during low volume. 'Volume Increasing' alerts, and 100, 500 and 1000+ lot trade alerts (configure as needed).

Time Sales 1 - Basic digital sounds for each entry in T&S. 20+ and 50+ lot trade alerts.

Time Sales 2 – 50+, 100+ and 200+ lot trade alerts with 5000+ volume absorbed at price alerts. Constant pitch sounds (no price information).

Beep Works – Trade sounds and alerts with price action, all using digital 'beeps' instead of voice. Order flow controls loudness of trade sounds (increased volume = increased loudness).

The Works – ‘Buy / Sell’ trade sounds, 50+/100+/200+ lot trade alerts with Squawk enabled. Order flow controls loudness of trade sounds (increased volume = increased loudness).

Combined – Trade size filtering combined with order flow filtering, to give you digital trade sounds only when trades occur larger than 5 lots, during elevated order flow.

Trade Sounds

Listening to trade sounds gives the trader a direct audible representation of the tape through buy and sell trade sounds, which adjust in pitch as price changes, and loudness as size or volume conditions change (if using volume control). Trade sounds are at the core of PriceSquawk, allowing traders to stay constantly attune to trading activity in their markets. Separate sounds for trades at Bid or Ask give a clear representation of buying pressure versus selling pressure through the pace and intensity of buy and sell trade sounds, and the resulting price action through the pitch of sounds. With practice traders can determine market conditions and opportunities purely by listening to PriceSquawk. Volume Control mode is used to filter and manipulate the volume (loudness) of trade sounds to represent trade size and volume conditions – with Volume Control disabled Trade Sounds are all played at the maximum sound level.

On the Config tab the trader can select from a dropdown menu which sound effect will represent a single trade event. As of V5, your sound effect options will depend on which Sound Mode you are operating in and which soundfont is loaded. The classic sounds from pre V5 are always available in ‘Default’ sound mode. ‘PriceSquawk’ sound mode gives the trader digital and voice sound effect options. ‘Custom’ sound mode lets you load your own Soundfont that will determine which sounds are available for Bid, Ask and Alert sound effects.

In PriceSquawk mode there are some sound effects that have the prefix ‘***’. These are sounds that do not change with price – ie their pitch is always the same. These sounds are referred to as alert sounds as they can be selected to play a unique alert for a single event (Bought, Sold, New Bid, New Offer etc).

It is highly recommended to experiment with different sounds for trades at the Bid Vs Ask so you can clearly identify Buying vs Selling pressure. By default in V5 ‘Buy’ and ‘Sell’ announcements are used, though you can easily change these to digital beep sounds or instrumental sounds depending on your audible preference.

As of release 5.5 you can also enter ‘Above Offer’ and ‘Below Bid’ sound effects to be used for trade sounds and Time & Sales alerts for trades that are reported at prices below the current inside Bid or above the current inside Offer price. Enter your required sound effects in the Time and Sales user options.

Figure 8- Above Offer / Below Bid sound effects

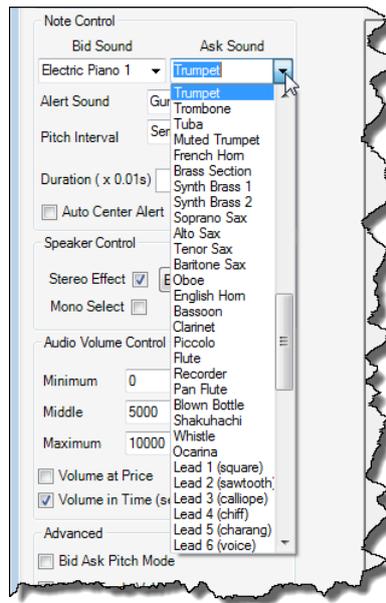
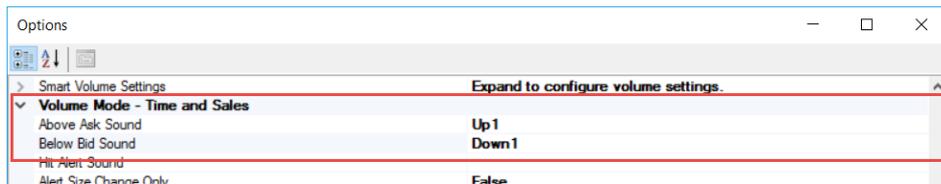


Figure 9 – Classic Bid/Ask Trade Sounds

E-mini Trade sounds

Introduced in PriceSquawk V5 are the E-mini trade sound effects. By selecting any of the E-mini price sound effects, PriceSquawk maps the trade price to the appropriate tick price component: Evens, Twenty-Fives, Fifties or Seventy-Fives. To introduce further price depth, these four announcements change in pitch depending on the price action. So as price moves up, each successive ‘Evens’ or ‘Twenty-Fives’ announcement will be a higher pitch and vice versa. By selecting Bid Ask Pitch mode this pitch variation will not occur.

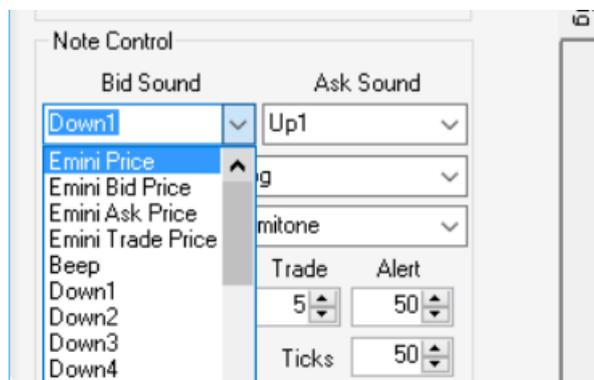


Figure 10 – E-mini trade sounds

Note Interval

If two trades occur one tick apart they will be separated in sound by the Note Interval setting which by default is set to Semitone. This means that each price tick would represent a note on a piano keyboard. Other settings can be configured for a more defined sound difference between successive prices traded. Unison can be selected to make all trades the same pitch. [Inverse Pitch](#) will use these intervals in the opposite direction.

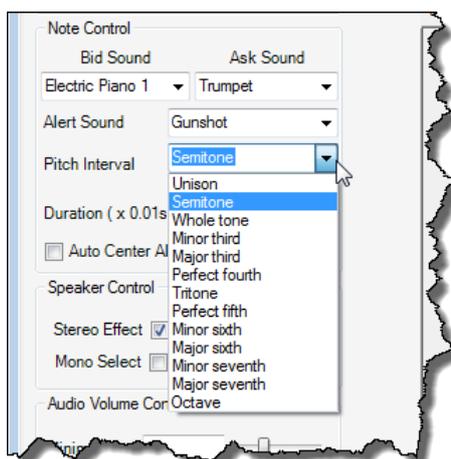


Figure 11 - Note Intervals

Duration

To further customize the sound you can reduce or increase the Main and Alert Sound Duration setting. This is the equivalent of how long the note of a keyboard would be pressed playing the Main or Alert sound and is measured in 1/100ths of a second. Note that this setting does not necessarily limit the total sound duration of each trade to the selected time period. A setting of 1 will result in a very short impulse for the configured sound, and a setting of 100 will play a full note. **Percussion instruments are mainly unaffected by this setting due to the nature of the sound interface.**

Traders can use these settings to fine tune the sound they want to hear.

Auto Center

The Pitch will always auto center once price has moved the range specified by the number of ticks in this setting. If you want to hear a warning before this happens tick the Auto Center checkbox. In default mode three alert sounds are played before re-centering, and in PriceSquawk mode an announcement is made.

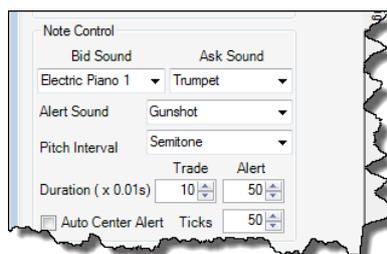


Figure 12 - Duration and Auto Center

Size and Volume

PriceSquawk lets you observe size and volume in markets audibly in two ways – Trade Sound Loudness and Size / Volume Alerts. The loudness of trade sounds is controlled by ‘Volume Control’ mode which can be enabled / disabled globally from the Sound Menu. Similarly ‘Volume Alerts’ can be globally enabled and disabled from the sound menu.

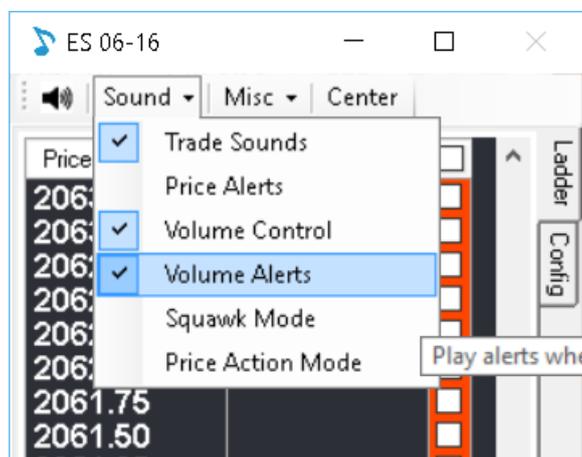
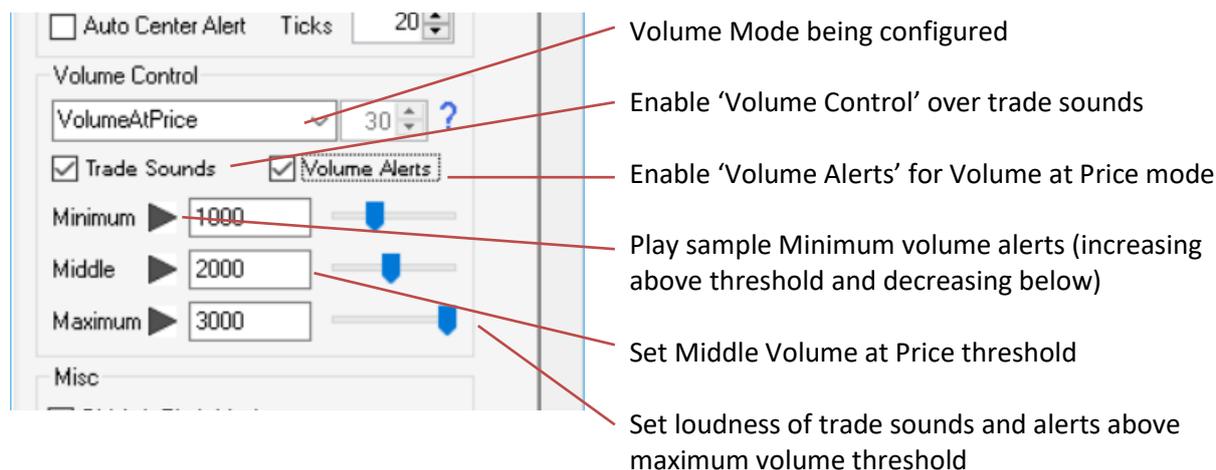


Figure 13 - Globally enabling Volume Alerts and Volume Control

PriceSquawk monitors the volume in markets using a number of different ‘Volume Mode’ perspectives for controlling trade sound loudness and triggering volume alerts. These are

- Time and Sales – Trade size is used
- Volume At Price – Accumulated volume at the current price
- Volume in Time – Accumulated volume in time over a short time window
- Smart Volume – Accumulated volume at price, for the inside market prices
- Volume Profile Fixed – Volume profile accumulated at each price
- Volume Profile Relative – Volume profile accumulated at each price relative to the maximum profile thickness
- Auto – Accumulated volume in time relative to previous volume in time snapshots, using basic statistical analysis to categorize volume

Each Volume Mode can be used to manipulate the loudness of trade sounds and / or raise volume alerts for the current market. PriceSquawk uses three tiers of volume / size for setting the loudness of trade sounds and raising volume alerts. These three tiers are referred to as the ‘Volume Thresholds’ and can be set and viewed on the Config tab as the Minimum, Middle and Maximum settings.



Any volume modes can be configured to raise unique volume alerts identifying the current volume condition. For example an alert for minimum volume at price can be configured to announce “1000 At Price”, while an alert for volume in time can be configured to announce “5000 Traded”.

With potentially different volume modes controlling trade sounds simultaneously, PriceSquawk provides different ways to combine volume modes to obtain a certain trade sound loudness.

Volume Control

Volume control mode allows the trader to identify the size of trades and current volume conditions through the loudness of trade sounds. With only Trade Sounds enabled and no Volume Control, all trades that occur have the same audio volume. This could be sufficient if the trader is only interested in the motion of the market (price, speed and direction). More market detail can be obtained audibly by enabling Volume Control to vary the sound volume based on trade size and the accumulated volume modes using the three volume thresholds: Minimum, Middle and Maximum.

For example, if 'Trade Sounds' is enabled for Time and Sales mode then the Minimum, Middle and Maximum values will filter our trade sounds by their settings.

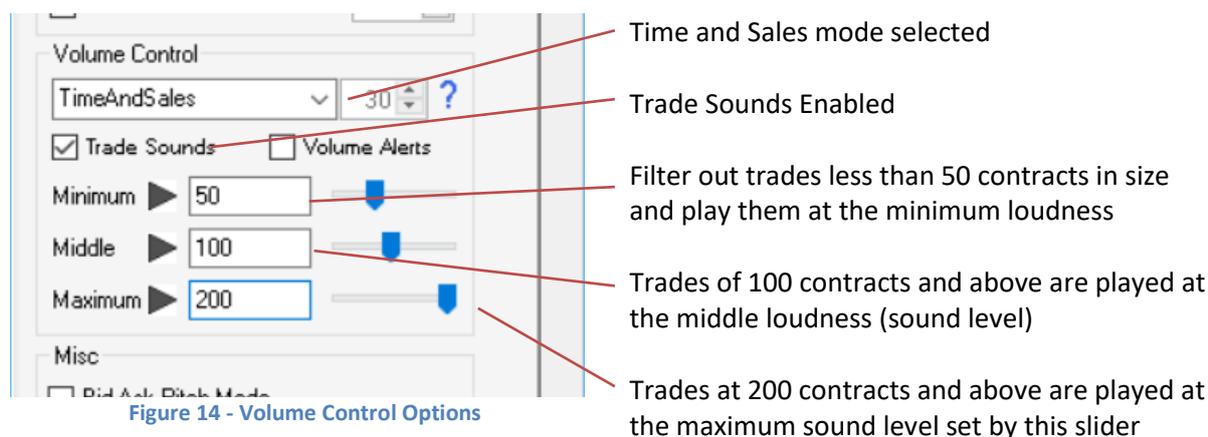


Figure 14 - Volume Control Options

Trade Sound Mode

With multiple modes controlling trade sounds simultaneously PriceSquawk lets you configure how the different modes are combined. For example if Time and Sales mode dictates a loud trade size,

but Volume at Price dictates a soft trade sound, the outcome depends on the Trade Sound Mode. The three Trade Sound Modes are:

- Time and Sales – Time and Sales mode is used for filtering individual trades and large trades will effect loudness
- Layered – The minimum loudness is used for enabled volume modes
- Any – The maximum loudness is used for enabled volume modes



Figure 15 - Selecting Trade Sound Mode from the user options

Time and Sales mode is the default mode for controlling trade sounds. The Minimum value can be used for filtering out all trade sounds below the minimum volume (size) threshold. Then the layered trade sound volume is used for other enabled volume modes (minimum loudness of other modes combined), with larger trades being pronounced by the middle and maximum trade size settings. If all combined modes are above the maximum threshold then all trade sounds will be loud.

Layered mode combines all volume modes, including Time and Sales, and uses the minimum trade sound loudness as the outcome. For example if Volume at Price dictates trade sounds should be at the middle loudness, but Auto Volume mode is at the minimum loudness, then trade sounds will be at the Auto Volume mode minimum loudness setting

Any mode takes the maximum loudness of all combined volume modes. For example if Volume at Price dictates trade sounds should be at its middle loudness setting, but Volume in Time has crossed the maximum threshold, trade sounds will be at the Volume in Time maximum loudness.

In summary, if traders wish to stay tuned to the tape and enable multiple volume modes for detecting generally increased volume conditions, they can use 'Any' mode to make the tape sound louder when any of the interested volume conditions are elevated e.g. A certain amount of volume has been absorbed at the current price, and Auto volume is above the maximum threshold. Alternatively if a series of volume conditions should be met using combined volume modes, but any large trades need to stand out, then Time and Sales mode is ideal. To identify unique combined conditions, such as maximum volume at price with maximum trade sizes, with a large volume in time accumulation, 'Layered' mode would be ideal.

Volume Alerts

Volume alerts add another means for identifying volume conditions in your markets. As well as manipulating the loudness of trade sounds, as does 'Volume Control' mode, you can configure volume alerts to trigger when the minimum, middle and maximum volume thresholds are crossed

for each volume mode. Volume alerts can be enabled for each mode (Volume in time, Volume at price etc), regardless of whether trade sounds are enabled or disabled for that volume mode. This allows traders to monitor all available volume conditions in a market purely using alerts or in combination with trade sounds.

Volume Alerts can be enabled for any of the PriceSquawk volume modes by ticking the ‘Volume Alerts’ checkbox on the Config tab or enabling a Volume Alert mode from the user options for a particular volume mode. One off volume alerts will be played

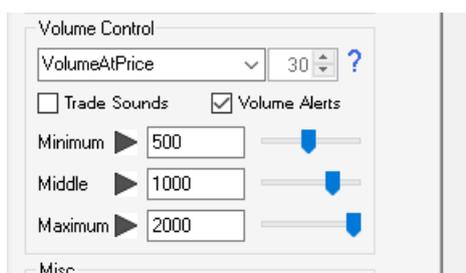


Figure 16 – Volume Alerts enabled for Volume At Price

PriceSquawk provides several formats for alerting on volume:

- Full Speech – Announces the volume threshold crossed e.g. ‘500 Traded’ or ‘500 Hit’
- General Speech – Announces ‘Minimum Volume’, ‘Middle Volume’, ‘Maximum Volume’
- OneOff – Plays a one off sound effect
- AlertSequence – Plays a sequence of sounds to represent the specific volume alert

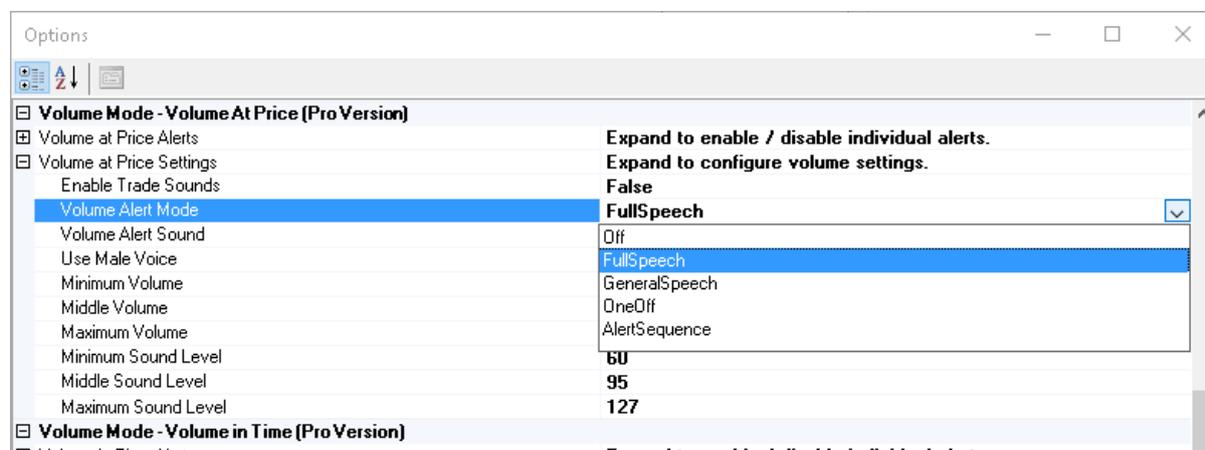


Figure 17 - Selecting volume alert format for Volume At Price alerts

Alert Sequence volume alert mode plays two sequential alert sounds to represent each of the minimum, middle and maximum volume thresholds. In all the accumulated volume modes (not Time and Sales mode) the Alert sound is played in specific ways to represent the volume trading as follows:

- If a normal sound (not preceded by **) is selected, then two successive alert sounds are played separated by your Pitch Interval setting. For increasing volume alerts these alert

sounds are increasing in pitch and for decreasing volume alerts the alert sequence decreases in pitch.

- The increasing and decreasing middle volume alerts played are at a higher pitch than the minimum volume alerts, and the maximum volume alerts are at a higher pitch than the middle volume alerts. Use the 'Play' button to familiarize yourself with the volume alert sounds.

The 'Volume Alert Sound' option lets you set the specific sound used for 'One Off' and 'Alert Sequence' alerts, as well as to complete the Full Speech alert announcements. E.g. Full speech alerts can be configured to announce '500 Traded', or '500 At Price'. If no value is entered the 'Alert Sound' selected on the Config tab is used by default. **The sound entered for these options must match one of the sounds listed in your Alert Sound drop down menu. You should emit the asterisk for alert sounds. If you select an alert sound in Alert Sequence alert mode, then alerts behave as in One Off mode due to the lack of pitch changes for alert sounds.**

The 'Use Male Voice' option will utilize a male voice (instead of the default female voice) for Full Speech and General Speech volume alerts.

Volume Alerts can be enabled and disabled for each of the Minimum, Middle and Maximum volume threshold values. If using any of the accumulated volume modes (Volume at Price, Volume in Time etc) then alerts can be played when the volume thresholds are crossed by volume increasing and volume decreasing. You can disable specific alerts such as Minimum Decreasing from the User Options.

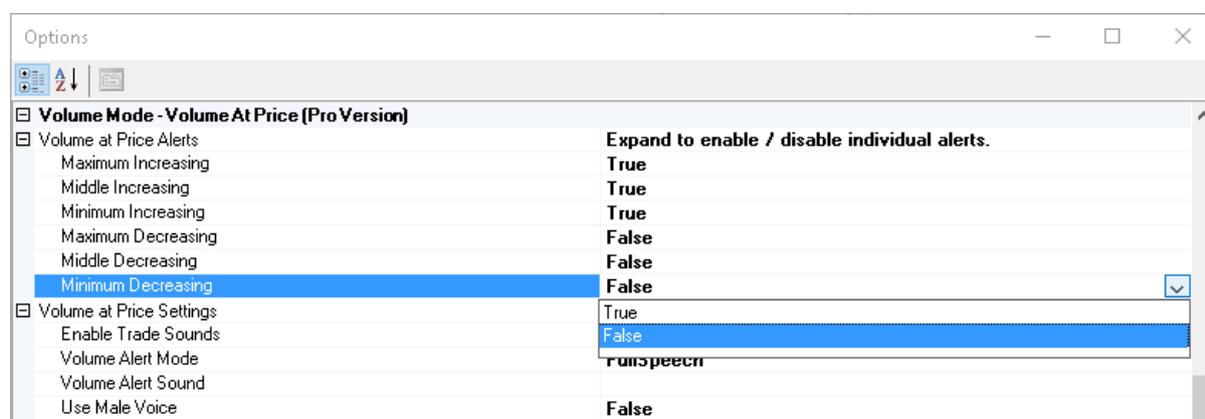


Figure 18 - Enabling Minimum Decreasing volume alert for Volume At Price

Volume Alerts use the same 'Sound Level' setting as trade sounds, which can be configured using the sliders on the Config tab or in the options window.

Trade Size Alerts

Volume Alerts for Time and Sales mode let you distinguish Buy vs Sell trade alerts. By default in full speech mode 'Hit' and 'Lift' is used to distinguish selling into the Bid or buying at the Offer. The 'Volume Alert Sound' in this instance lets you configure your trades at 'Offer' alert sound, and the 'Hit Alert Sound' option lets you configure trades at the bid sound.

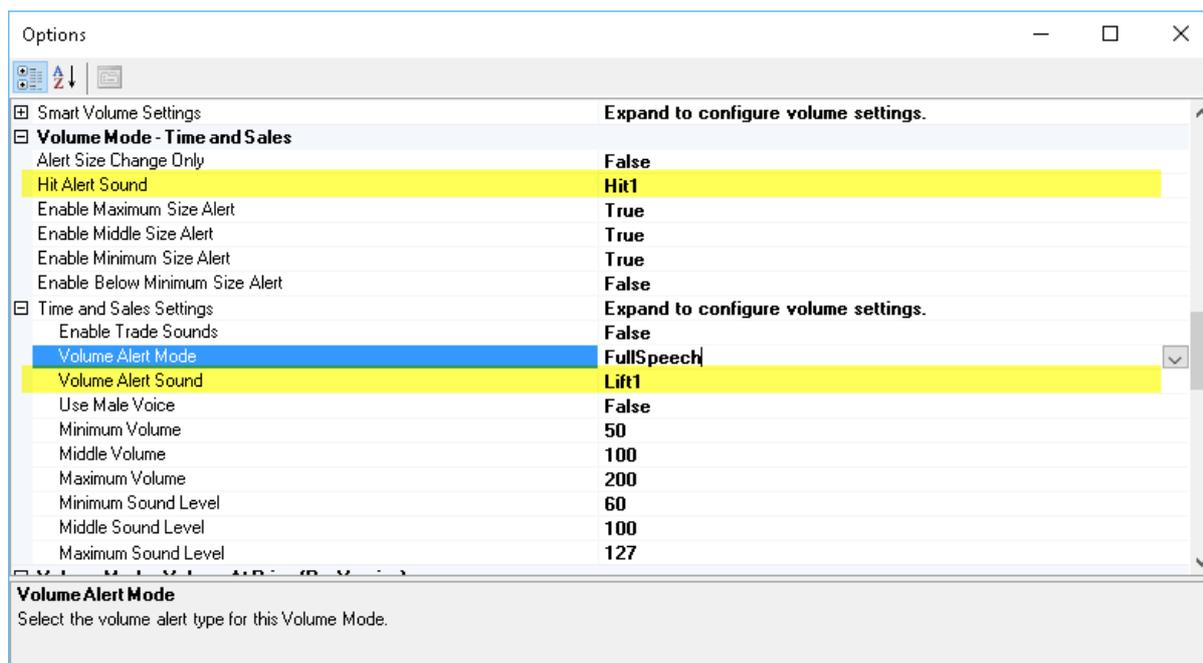


Figure 19 - Trade size alert configuration

Alert Sequence volume alert mode plays two sequential alert sounds to represent the size traded at the Bid or Offer as follows:

- If a normal Bid or Ask trade sound is used (not preceded by **) then two successive bid or ask sounds are played separated by your Pitch Interval setting. If the size alert occurs at the bid then the bid sound is played with increasing pitch and if the trade occurs at the offer, then the ask sound is played with decreasing pitch.
- The middle size alerts at the bid are played at a lower pitch than the minimum size alerts and the maximum size alerts for trades at the bid are played at a lower pitch than the middle size alert. Use the 'Play' button to familiarize yourself with the size alert sounds.
- The middle size alerts at the offer are played at a higher pitch than the minimum size alerts and the maximum size alerts for trades at the offer are played at a higher pitch than the middle size alert. Use the 'Play' button to familiarize yourself with the size alert sounds.

In **Full Speech** mode, the 'Volume Alert Sound' option can be used to set your buy alert description, and 'Hit Alert Sound' option can be used to set your sell alert description. E.g. "100 Hit", "100 Lift" or "100 Buy" or "100 Sell". For other Volume Alert Modes these options let you set the sound effect used for One Off and Alert Sequences. If no sound is entered, the 'Bid Sound' and 'Ask Sound' effects are used by default. **The sound entered for these options must match one of the sounds listed in your trade sound drop down menus. You should emit the asterisk for alert sounds. If you select an alert sound in Alert Sequence alert mode, then alerts behave as in One Off mode due to the lack of pitch changes for alert sounds.**

General Speech volume alerts for Time and Sales mode announce 'Minimum Size', 'Middle Size' and 'Maximum Size' alerts with the option to switch to male voice using 'Use Male Voice' option.

The 'Alert Size Change Only' user option will play trade size alerts once per level. For example with the settings shown below in General Speech mode:

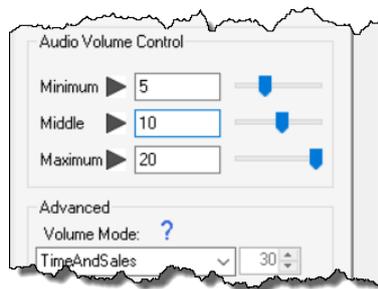


Figure 20 - Time and Sales Alerts

'Minimum Size' alert will be played once when a trade of 5 contracts/shares occurs and then the 'Middle Size' alert will be played once when more than 10 contracts trade. If below 10 contracts trade then the 'Minimum Size' alert will be played once again. This can be useful for reducing the number of alerts sounding in Time and Sales mode. There is a play button next to each alert level that will demonstrate the current Volume Alert settings, and will show if volume alerts are enabled for that level from the user options.

Time and Sales Volume Mode (Audible Tape)

With just Time and Sales trade sounds enabled with Volume Control, PriceSquawk becomes an **Audible Tape**. Trade sounds will play at the minimum sound level for trade size at or above the Minimum value set in the Volume Control section. Sound volume will be in the middle for trade size at or above the Middle setting, and at maximum when the trade size is at or above the Maximum setting. **The minimum can be used to filter out trade sounds that occur below the minimum setting.** You can use the settings to identify certain sized orders that are filled. You can use multiple PriceSquawk instances to detect any number of order sizes, with different sound effects for each.

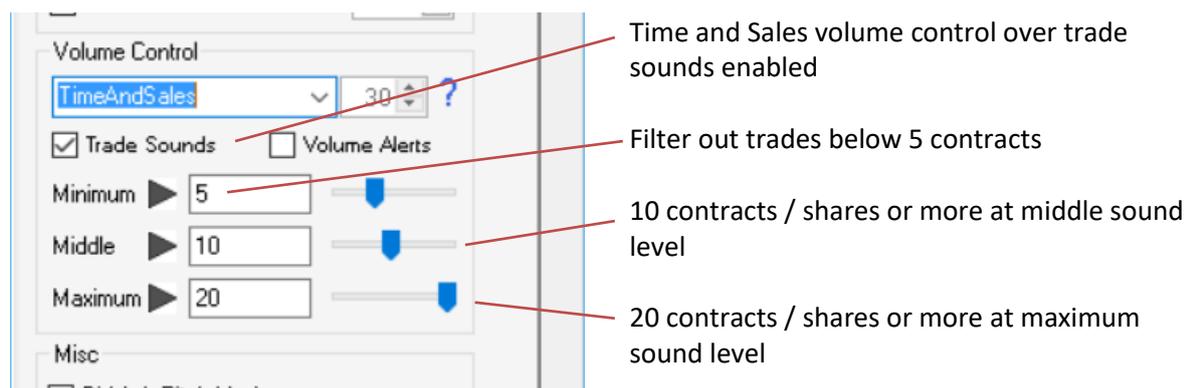
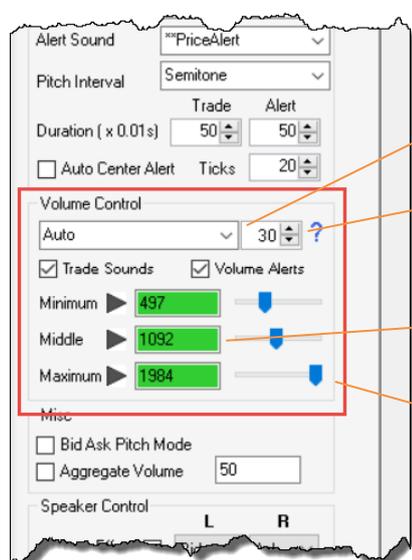


Figure 21 - Time and Sales Volume Control

Basic Volume Control is useful if the trader is listening for the size and pace of individual trades, essentially reading the tape. In addition other volume modes such as 'Volume at Price' and 'Volume in Time' can be used to change loudness based on certain order flow conditions.

Auto Volume Mode

PriceSquawk Auto mode is a professional license feature that automatically adjusts the Minimum, Middle and Maximum settings in PriceSquawk based off the observed real-time volume trading in the market. With Auto Mode controlling trade sounds, **trade sounds will automatically be louder when there is increased trading activity** and softer with decreased market activity and auto volume alerts will tell traders when volume is spiking and order flow increasing.



Drop down menu for selecting Volume Modes (Volume in Time, Smart Volume, Volume at Price)

Time Window for Volume in Time and Auto Volume Control. The default of 30 seconds should be sufficient.

Minimum, Middle and Maximum values are adjusted automatically based on auto volume analysis

Sound levels used for trade sounds and volume alerts, can be adjusted for the selected volume mode using these sliders

PriceSquawk Auto mode uses the Time Window setting to take samples of how much volume has traded over the last X seconds. It then compares this value to a larger sample set of data to determine if the amount of volume trading now is significant, normal or minimal compared to recent activity.

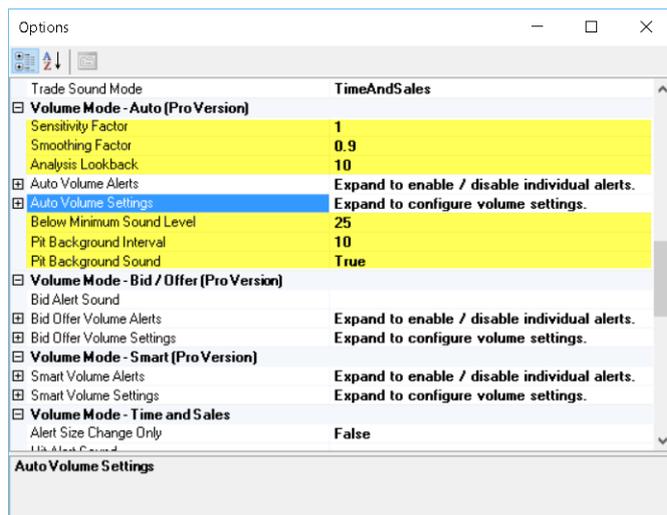
Note: Trade sounds in Auto mode will initially be loud in the first few minutes of operation as PriceSquawk buffers real-time data.

By setting the Minimum volume level bar to zero in Auto Mode, you can use PriceSquawk as an Order Flow alert tool as it effectively filters out all trade sounds in the normal volume range. When you hear trade sounds, it is because volume trading is elevated. Elevated volume usually precedes or culminates market moves.

Volume in Time, Volume at Price and Smart Volume can be used to detect more specific order flow conditions (iceberg orders, support and resistance, specific volume spike alerts).

Additional Auto Settings

Further customization of the Auto Volume Control mode can be found under Volume Control user options. It is recommended to leave these as default initially.



Sensitivity Factor determines the range between the middle volume threshold and maximum calculated threshold. 0 = smaller range (more frequent maximum volume trade sounds) 2.0 = larger range (less frequent maximum volume trade sounds)

Smoothing Factor uses an exponential filter on each volume sample so that one large trade doesn't spike the volume curve used for deriving the volume thresholds (min, middle and max)

Analysis Lookback sets the number of minutes PriceSquawk holds volume data for analysis. The default 10 minutes means that the volume traded in the current 'Volume in Time' window (default of 30 seconds) is compared to previous values capture over the last 10 minutes. You can extend this out to a full session – though this may affect performance

Below Minimum Sound Level – Sound level used for trades below the minimum auto volume threshold, and for the below minimum volume alert

Pit Background Sound – Play the selected Volume Alert setting continuously while in the current volume state. E.g. when above the maximum threshold, the auto volume alert sound will play continuously at the maximum auto sound level. See [Virtual Trading Pit](#) section

Pit Background Interval – The interval used for looping the pit background audio. 10 seconds default for Virtual Trading Pit – a smaller value can be used to strobe a sound effect for constant volume feedback for a market. See [Virtual Trading Pit](#) section

Virtual Trading Pit

PriceSquawk can be used to emulate the trading pit environment by enabling the Pit Background Sound setting as shown above under Auto volume settings. Alternatively select the 'Virtual Trading Pit' template from the Settings dropdown menu.

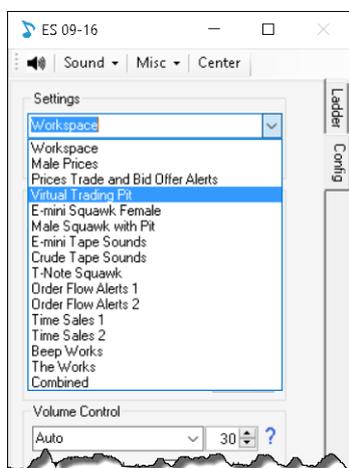


Figure 22 - Enabling Virtual Trading Pit

The virtual trading pit uses PriceSquawk's auto mode to increase and decrease the loudness of the Pit sounds, based on the volume flowing through the tape. Each 'Pit' sound effect is simply a volume alert that is looped when the 'Pit Background Sound' setting is enabled. You can control when the pit sounds are triggered using the volume alert sliders, or by disabling specific Auto Volume Alert triggers as shown below. By default when you select the 'Pit Sounds' settings template, you will hear pit sounds for all phases of volume flow as measured by auto mode, from when the auto volume is below the minimum threshold (softest) through to above maximum volume thresholds (loudest). You can control the sound level of the pit using your volume sound levels and Auto's 'Below Minimum Sound Level', and you can enable / disable the pit for different volume thresholds.

For example, with the 'Maximum Increasing/Decreasing' and 'Middle Increasing' Auto Volume Alerts enabled, you will hear the pit sounds when volume becomes elevated (above middle volume threshold), and pit sounds will increase in loudness when abnormal volume is trading (above maximum volume threshold). When auto volume falls back below the maximum threshold, pit sound levels will return to their 'middle' loudness.

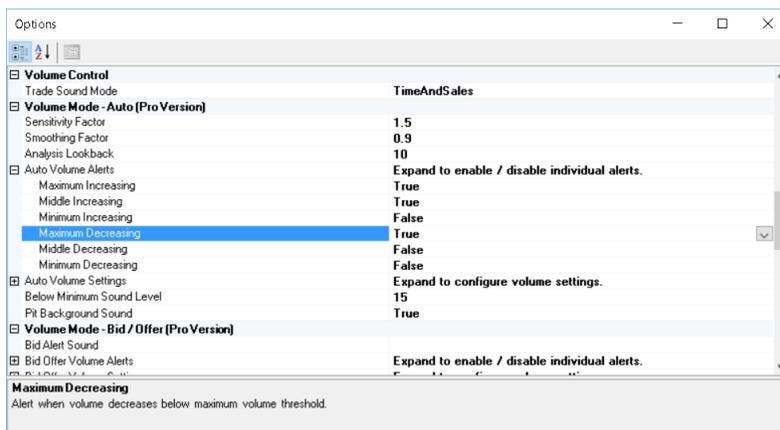


Figure 23 - Changing virtual trading pit sound conditions

PriceSquawk provides 3 different ‘Pit’ sound effects – Pit1, Pit2 and Pit3. You can change the sound effect by typing in your preference into the Volume Alert Sound setting. The example below shoes ‘Pit2’ used instead of the default ‘Pit1’. **Auto Volume Alert Mode must be set to ‘OneOff’.**

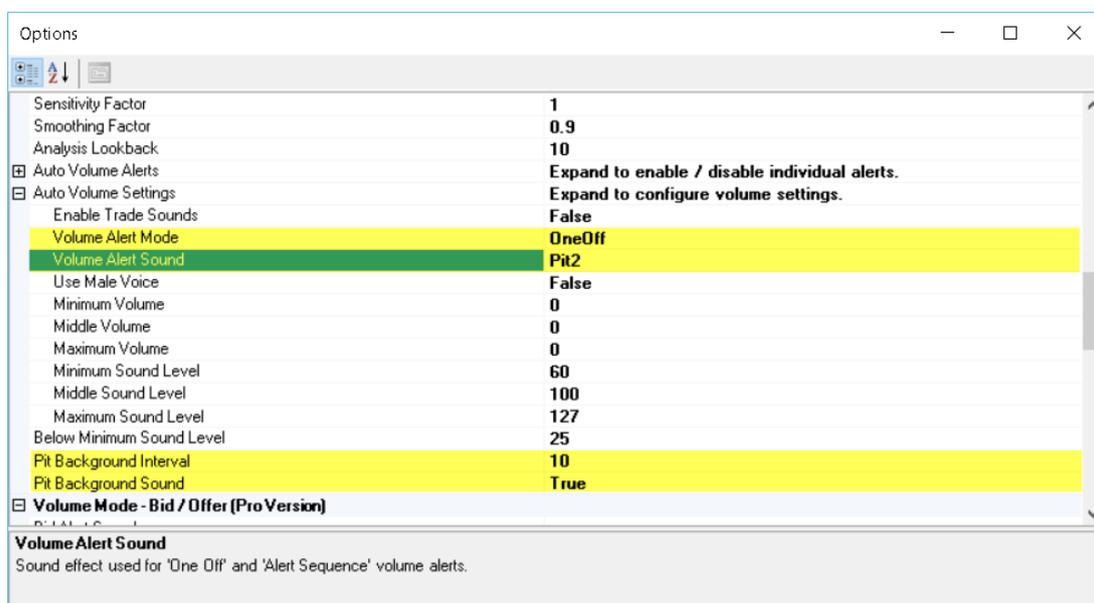


Figure 24 - Changing virtual trading pit sound effect

If no sound effect is entered for ‘Volume Alert Sound’, then the currently selected ‘Alert Sound’ is used instead. This can have varying effects depending on the sound effect used. If a normal sound effect is used (no ‘**’) such as ‘Choir Ahhs’ then an ‘Ahh’ will be played as a one second pulse every ‘Pit Background Interval’ to represent the current auto volume state. This can be useful for creating a continuous market pulse that represents the current volume state of a market.

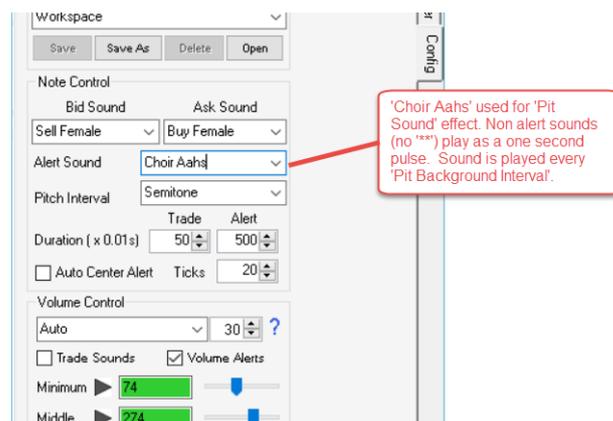


Figure 25- Using non Pit sounds for virtual trading pit

Volume at Price Mode

This setting will change the loudness of trades and / or raise volume alerts based on the accumulated volume traded at the current price. The accumulated value will reset if trades occur at a different price level, however what you will find is at good risk reward areas, size continually absorbs market orders and the sound volume will repeatedly reach a crescendo. This is because large traders are trying to get filled across a range of price levels to either exit a position, or build a position without moving the market against them. This setting is very useful for determining if size is trading in your market at key price zones. Sound volume can be soft while small orders are trading at each price level, then as the trade volume accumulates, sound volume increases and vice versa based on the Minimum, Middle and Maximum settings. The accumulated volume can be seen in the bottom status bar.

Volume in Time Mode

The PriceSquawk Volume in Time mode lets you hear trade sounds and / or alerts for specific changes in volume over time, by setting the Minimum, Middle and Maximum volume in time settings. This setting is most useful for listening to new order flow / volume entering the market. Traders can use the minimum setting to be alerted when at least X amount of contracts have traded in the last Y seconds. This is useful for filtering out slow market activity so that you can be alerted when new traders are entering the market.

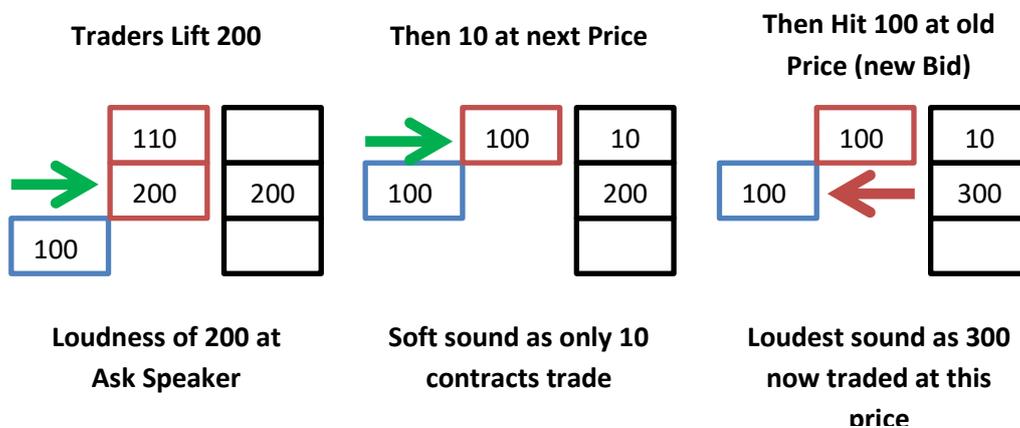
The accumulated volume in time is calculated as the sum total volume traded over the previous 30 seconds (the default value). Using this configuration of PriceSquawk, we get an accurate feel for the order flow, as the sound volume increases and decreases as volume flow enters and exits the market over time. You can filter out sounds during slow trading activity easily using the minimum value so you only hear when new flows (orders) are entering the market, and once a minimum traded volume threshold has been reached, you can still identify increased market activity as the medium and maximum volume thresholds are reached.

Smart Trade Volume Mode

Smart Volume mode lets you observe volume accumulating in price clusters, sometimes referred to as volume nodes.

Smart Trade Volume accumulates the Volume at Price across the configured price range. With the default range of 2 - a normal scenario is that smart volume accumulates traded volume at both the Bid and Ask price. However when the market trades above the Ask or below the bid the traded volume at the new Bid (old Ask) continues accumulating. This is not like a normal bid / asks volume split which would reset the accumulated trades at the bid and ask when a new price trades above the Ask or below the bid. Instead it is a short term Volume Profile of the most recent prices traded.

Using a setting of just two prices, you are able to hear the aggressiveness of traders lift the offer with size, and then they try to lift the next price. If there is some short term momentum behind the buying then the Bid is now strong and you want to hear this through the loudness of trades at the new Bid. Volume alerts can also be configured to announce large absorption at the most recent prices.



With trade sounds enabled, the sequence of sounds would amplify the strength of the buyers, as they first lifted 200 contracts then sat on the Bid where you hear them absorb more size. As the buyers eventually meet resistance, the loudness will be more frequent out of the Offer speaker, as traders absorb at the Offer and sit on this price. It is simply a smarter way of accumulating traded Volume at Price by keeping a short term history of volume traded so loudness remains consistent with buying and selling strength.

As of version 5.5 Smart Volume has been extended to allow volume accumulation across a range of historical prices using the 'Smart Volume Range' user option.

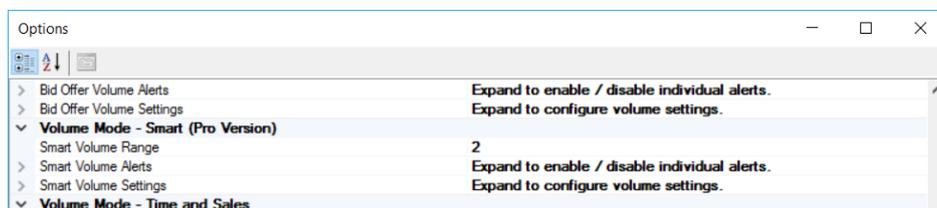


Figure 26- Smart volume range setting

Smart Mode defers from a price range volume profile as it keeps track of the last X historical prices instead of the last X consecutive ticks. For example with a Smart Volume Range of 3, volume at price will accumulate over the last 3 traded prices, and these prices do not have to be consecutive. However when price moves outside the current historical range, then the volume at price at the

opposite side of the range is reset e.g. If trading moves to higher prices, then the lowest price volume accumulation is reset and vice versa, similar to how a sliding volume profile would function.

This new functionality allows you to hear and detect volume clusters / nodes. With some useful Minimum, Middle and Maximum settings you can hear absorption across a range of prices occur independent of time. This gives PriceSquawk listeners insight as to how much volume is actually being accumulated / distributed by large traders irrespective of time. When there is a lot of momentum then Smart Volume will help you detect the absorption by large traders at the culmination of the current move across a range of prices. However if price action is stagnant, smart mode will keep you focused on accumulation of positions that may be occurring before price discovery resumes.

Volume Profile Fixed Mode

Volume Profile Fixed mode lets you set volume profile thresholds for changing the loudness of trade sounds, or for setting specific volume profile alerts. The values used are based off the resettable volume profile as PriceSquawk only deals with real-time data. **If you want to establish a volume profile for the full session you need to have PriceSquawk running for the full session with the Volume Profile enabled.** Upon enabling Volume Profile Fixed mode – the resettable volume profile is automatically enabled (though you can then disable the display of the VP if you choose for a small computer performance benefit).

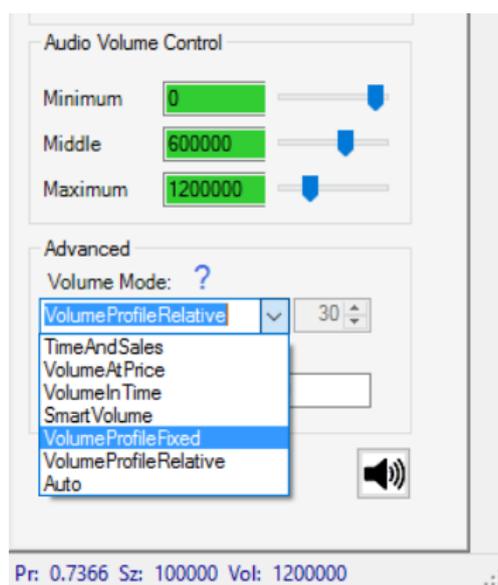


Figure 27 - Volume Profile Fixed

The filtering works as per the other manual volume controls. If you set Minimum to 1000 for instance, you will only hear trade sounds when the profile reaches 1000 at a price. You can use the volume sliders for Minimum, Middle and Maximum to invert the loudness – so that you can identify when trades are occurring at the thinner end of the profile. This can be handy for identifying breakouts – by filtering out (or reducing loudness of) trade sounds when the profile is thick, and increasing them when new price discovery is in action.

The profile is reset by right clicking on the chart and selecting 'Clear Profile' or by configuring a hotkey from the Misc menu.

Volume Profile Relative Mode

Similar to Volume Profile Fixed – this mode lets you hear the volume profile, though relative to the maximum volume at price in the profile, also known as the Volume Point of Control (VPOC). The volume is accumulated at each price while active and can be reset by right clicking on the profile and selecting ‘Clear Profile’ or configuring a hotkey from the Misc menu.

With the default settings, the maximum sound volume will be heard when a new VPOC is established. Trade sounds will increase or decrease at half this level. Within your options window though, you can configure a Minimum, Middle and Maximum multiplier value. The multipliers determine the levels relative to the largest accumulated volume at price (maximum VP).

Settings	Calculation	Default Multiplier
Minimum	Minimum Multiplier X Max VP	0
Middle	Middle Multiplier X Max VP	0.5
Maximum	Maximum Multiplier X Max VP	1.0

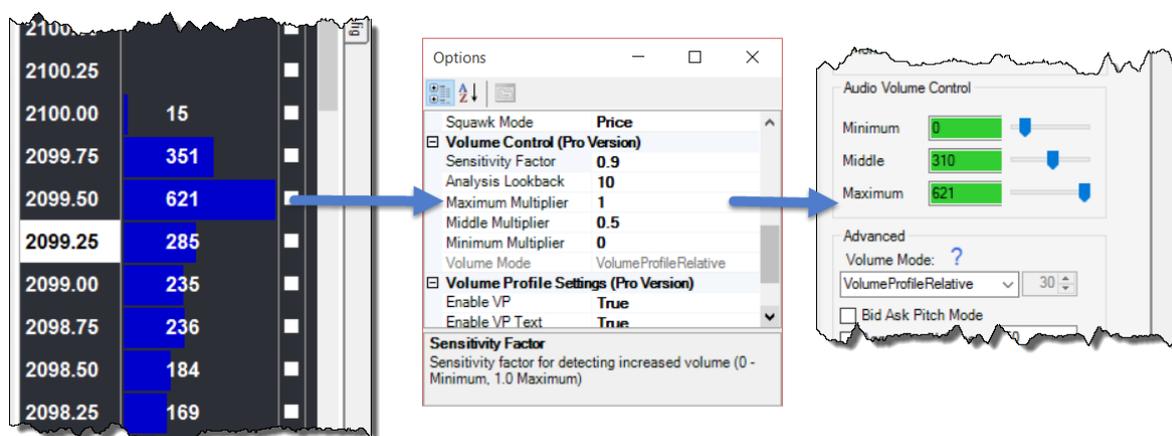


Figure 28 - Volume Profile Relative Settings

A good example of tweaking these settings would be to set the Minimum Multiplier to zero (default), Middle Multiplier to 0.25 and the Minimum and Middle volume sliders to maximum (all the way to the right), the Maximum volume slider to minimum (all the way to the left). This setting would mean you are likely going to hear when any steps in the profile break and trading is occurring at new levels.

Bid Offer Volume

Different to the other volume modes, Bid Offer Volume mode uses the inside market Bid and Offer volume for filtering trade sounds and raising volume alerts. The same Minimum, Middle and Maximum volume thresholds are used for both Bid and Offer volume tests. For example with the following settings:

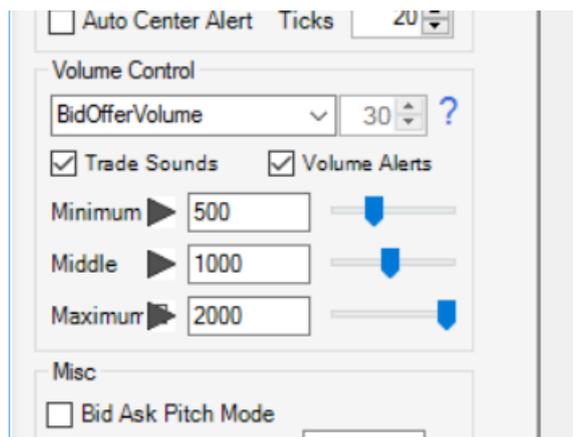


Figure 29 - Bid Offer Volume Control

If the bid volume increases above 500 units, then you will get a '500 At Bid' volume alert in full speech volume alert mode, or 'Minimum Bid' in general speech alert mode, or a minimum increasing alert sequence using the currently selected 'Bid Sound' effect. Likewise if the offer volume increases above 1000 units, then you will hear a '1000 At Offer', 'Middle Offer' or middle increasing alert sequence using the currently selected 'Ask/Offer Sound'.

If 'Trade Sounds' are enabled for Bid Offer Volume mode, then your trade sounds will change in loudness according to the size of the Bid or Offer. If a trade occurs into the Bid, then the loudness of that trade will be derived from the size of the Bid. You can use the volume sliders to control whether trades are louder for a larger bid (Maximum slider > Middle slider > Minimum slider) or inversely, if trades get louder as the Bid reduces in size (Minimum slider > Middle slider > Minimum slider).

Identifying Icebergs / Refreshing Orders

You can use Bid Offer Volume trade sounds to hear if volume is being absorbed by resting orders, as you can audibly detect the size of the Bid or Offer based on the loudness of trade sounds and the persistence of the Bid or Offer as trades occur at the same pitch and loudness. For example with the following settings:

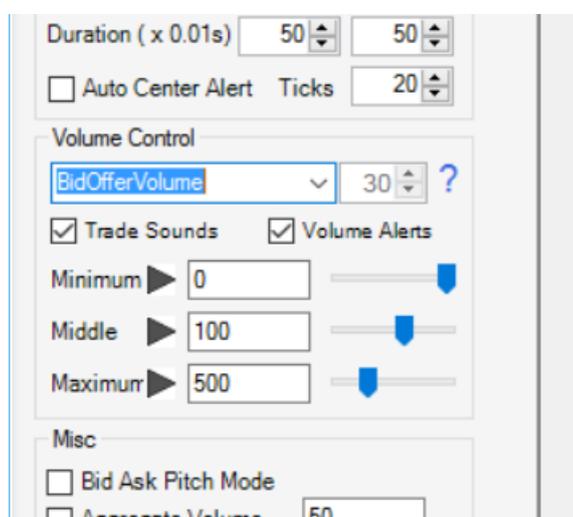


Figure 30 - Detecting hidden orders

Trade sounds will increase in loudness as the Bid or Offer volume reduces below 500 contracts and then below 100 contracts. If you hear trades at the Bid get louder then you know that sellers are working away at the resting buy orders. If you are using Bid and Ask trade sounds that change in pitch when price changes, or 'Squawk' mode, then you will know if sellers consumed all liquidity at the bid ('Bid Taken' alert) and if selling starts occurring at lower price levels (lower pitch sell trade sounds). Conversely if you don't hear confirmation of lower prices and notice persistent loud selling trade sounds, **then you are observing hidden buy orders at the bid.**

To take it a step further, you may wish to enable 'Bid Refreshed' and 'Ask Refreshed' alerts so you can hear when the Buyers and Sellers are adding to the bid and offer volume:

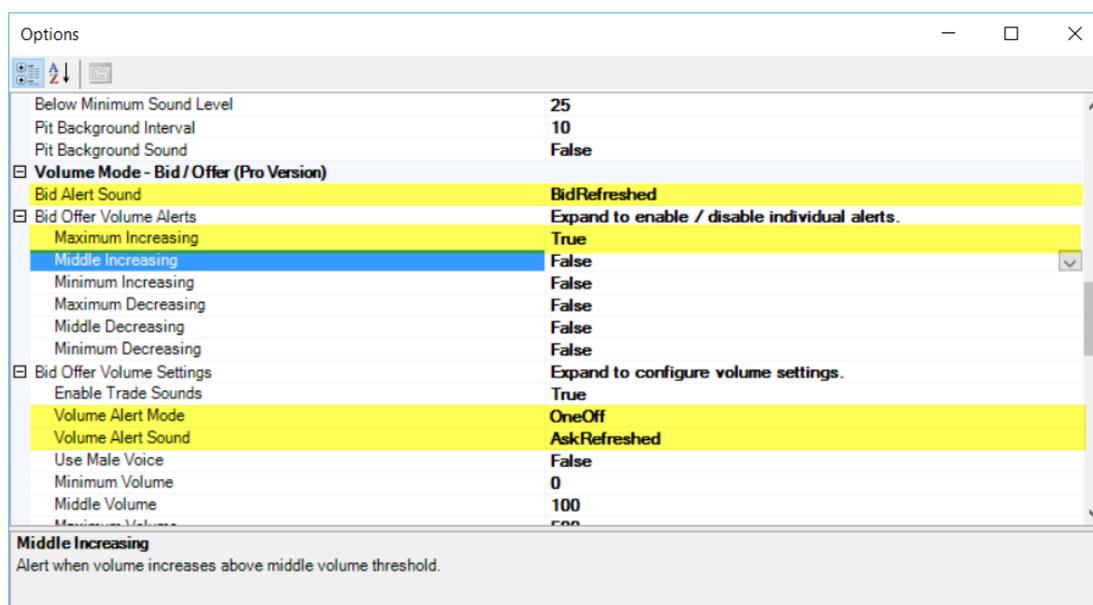


Figure 31 - Adding Bid Offer Refreshed Alerts

With the above settings you will hear Bid and Offer refreshed alerts when the Bid and Offer rises above the maximum threshold. If you have heard the Bid reduced as per the above example via your trade sounds, and then the 'Bid Refreshed' alert in sequence, then you have confirmation of hidden buying orders. Alternatively you could enable the 'Middle Decreasing' alert to hear an alert when Bid or Offer volume drops below the middle threshold, and the 'Maximum Increasing' alert for when Bid or Offer volume increases again. Hearing these in sequence gives audible feedback that buyers are adding to the bid, or sellers are adding to the offer. For 'iceberg' fans, the refreshing orders expose the iceberg order as heard by your louder trade sounds for smaller bid / offer volume, and the increased bid / offer volume alerts add confirmation that the resting bid or offer is strengthening.

There are many additional ways to refine resting order alerts and find unique absorption patterns and liquidity conditions by combining bid / offer trade sounds with other volume control modes such as 'Volume at Price', using the 'Layered' or 'TimeAndSales' [Trade Sound Mode](#)'s. For example you can configure PriceSquawk so that you only hear trade sounds if 1000 contracts have been absorbed at a price, and the bid or offer at that price is below a certain threshold. Refer to the [PriceSquawk tutorial videos](#) / emails for examples on utilizing multiple volume control modes together for filtering trading trade sounds.

Visual Settings

The Options window available from the Misc menu, lets you set the following colors:

- Bid Equalizer Bar
- Ask Equalizer Bar
- Normal Price Text
- Traded Price Text
- Normal Price Background
- Traded Price Background
- Ladder Background

You can also enable color intensity control of equalizer bars. This will fade the bid and ask bar colors to match the audio volume. Maximum volume will give full color, and Minimum will display more transparent bar colors.

Text size and row height can be set also. The Price Digits setting lets you control how price is displayed in the Price column. 4 digits will display the last 3 digits of a price, for example “1925.36” will display as “5.36”.

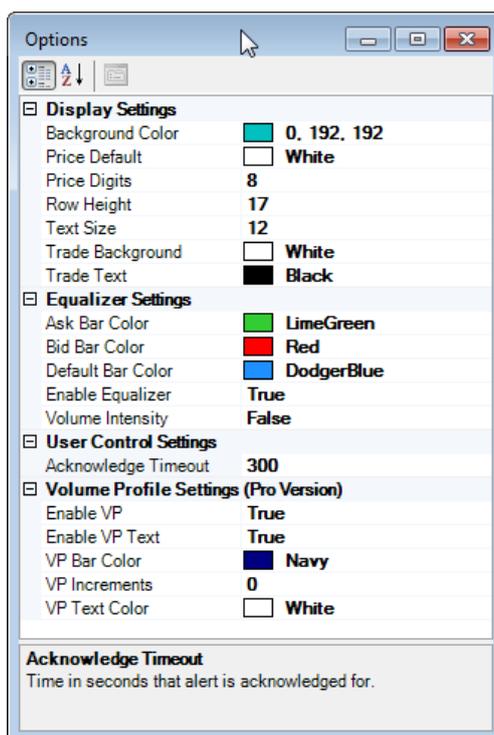


Figure 32 - Options Menu and Visual Settings

Volume Profile View (Pro)

Professional licences can enable a resettable Volume Profile in the Equalizer column. The volume profile only accumulates with real-time data, so it will not fill out to match the trading days volume profile, unless it is open for the full trading session without resetting.

The Volume profile is reset by assigning a hotkey, right clicking on the ladder and select 'Clear Profile' from the context menu, or entering a session time in the user options.

This feature is resourceful for recalling historical order flow activity in the context of each move you are interested in, or in other words, you can record the volume profile for each phase of market action. For example if a breakout occurs, you can reset the profile to record the subsequent action – and have a short term record of the subsequent volume traded. This is useful as the market swings do not occur in the same time scale each time or in set price ranges. The trader can instead use discretion to reset the volume profile as fit to market conditions.

The volume profile bars can be configured to adjust dynamically to the short term Volume Point of Control (VPOC) ie relevant to the most volume at price currently accumulated. This is the default setting. You can also set each bar to increment every X contracts traded by changing the VP Increments option to a value greater than zero. By settings VP Increments to 10 – the volume profile bar will increase in size every 10 trades.

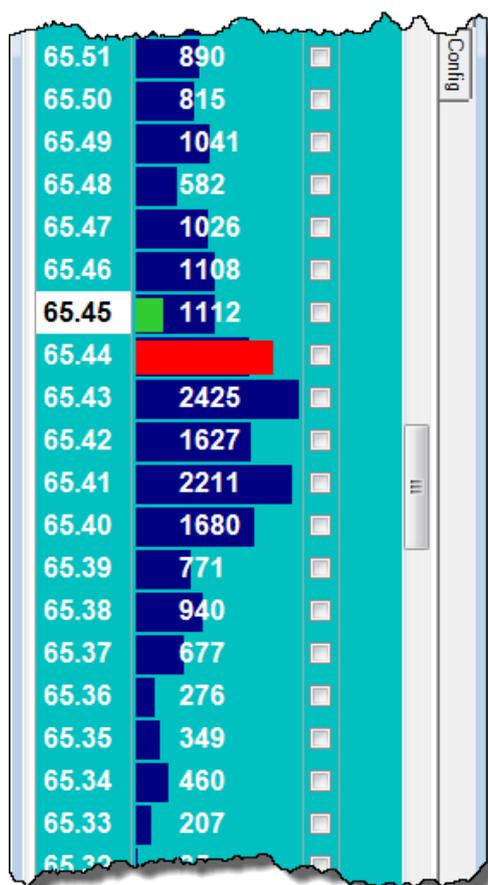


Figure 33 - Resettable Volume Profile

Session Times and Alerts

In the user options you can set session times and enable/disable session alerts. The Volume Profile is reset when your local PC time matches the session time minus one second. This is so that the profile is reset and ready to accumulate volume from the very beginning of each session. Session times are entered in 24 hour format as HH:MM, with multiple session times separated by commas. As well as resetting the Volume Profile, the display and pitch will also re-centre at these times.

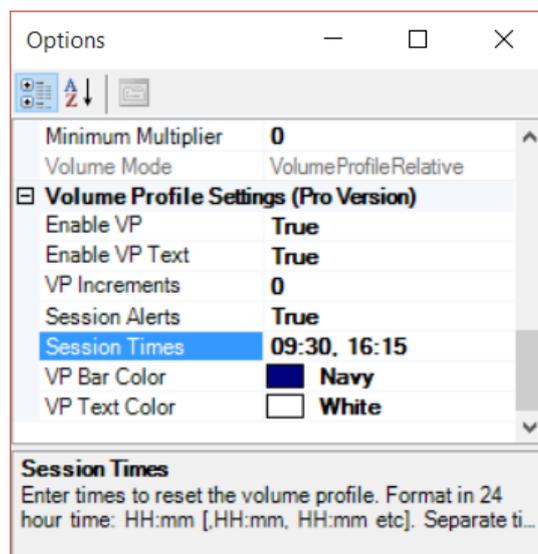


Figure 34 - Session times

You can choose to enable or disable 'Session Alerts' which are played for each of the session times.

Scheduled Alerts

Scheduled alerts let you set a time and date for an alert to be played in the future, the main use being to enter relevant news announcement times that may affect markets. You can also configure an additional warning alert that will be played a certain number of minutes before the scheduled alert by entering a value greater than '0' for the 'Pre Warning Minutes' option. By default the Alert sound used is "Number" and "News in 1 Minute" for a one minute warning.

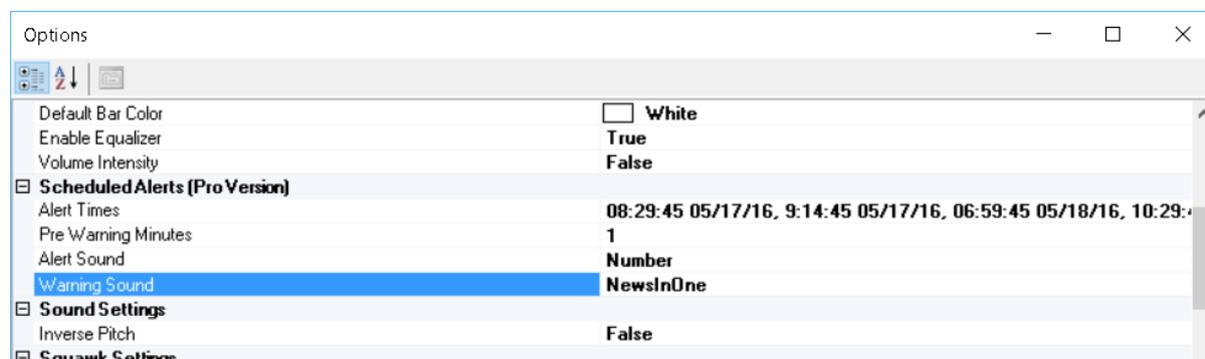


Figure 35 - Scheduled Alerts

Audio Settings

Introduced in the V5 release of PriceSquawk, audio settings let you control which sound effect library PriceSquawk uses for all its sounds. By default PriceSquawk uses its own 'PriceSquawk' Sound Device which loads a custom soundfont library designed specifically for PriceSquawk. This sound effect library gives the trader access to voice announcement sound effects as well as various digital and instrumental sounds.

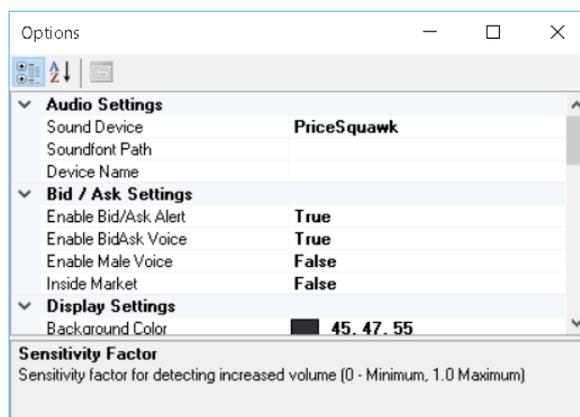


Figure 36 - Audio Settings

The following table describes the various Sound Device options and their uses:

Sound Device	Description
PriceSquawk	Loads the PriceSquawk soundfont and initializes all sound effects contained in this sound library. Voice announcements are included in this mode as well as E-mini price announcements.
Default	Loads the classic instrumental sounds common to all pre V5 releases of PriceSquawk. These sound effects contain the same information as PriceSquawk mode minus the voice announcements.
Custom	By selecting Custom you will need to enter or navigate to a Soundfont to file for the 'Soundfont Path' property. PriceSquawk will attempt to load all sounds from the relevant soundfont file so that you can select custom sounds for Bid, Ask and Alert sound effects. You can create your own soundfont using free tools such as Viena and Polyphone.
External (advanced)	Select an external midi sound driver. This will route all PriceSquawk sounds to an external device which may be a Creative soundcard or networked sound driver. Please contact support for more information on using this mode.

Figure 37 - Sound Device Options

Bid Ask Pitch mode

In this mode Pitch is associated with the bid and offer. If a trade occurs at the Bid then the sound played is at the pitch of Middle C. Trades at the Offer will have the pitch of Middle C plus the Interval selected in the Note Control (semitone, whole tone etc). So as well as the Stereo Effect, traders can also easily identify the Bid or Offer trades by Pitch. This is handy for focusing on large trades occurring, without needing the extra Pitch information of Price.

Aggregate Volume

Use this setting to aggregate a certain amount of volume for each note. This can be useful to decrease the frequency of sounds in high frequency traded instruments without losing any information. Traders can still hear the speed of Price movement, and use all the volume control features in the same manner, but with a different resolution of trade size.

If Aggregate volume is selected and a value of 10 entered, then PriceSquawk will aggregate 10 contracts before processing the market data. This means that for trade sounds, a buy or sell sound effect will be played every 10 contracts accumulated, with the Pitch and sound direction (Bid or Ask) associated with the last tick traded. If 20 contracts traded, then only one note will be played, however the loudness will represent the 20 contracts as per the Volume Control settings. **Note that Price and Volume Alerts will only occur when the Aggregate volume has traded.** For tick by tick Price Alerts configure a separate PriceSquawk instance.

Squawk Mode

Squawk mode allows the trader to listen to the inside market action and price action. This adds yet another dimension to the order flow, as you can hear the activity of passive buyers and sellers, the games they are playing with limit orders on the inside bid and offer, and how they are standing up to the more aggressive market buy and sell orders heard from the tape.

As of V5 Squawk mode detect the following events:

Event	Description
Offer Lifted	The entire offer is traded out or removed and immediately replaced by a new bid
Bid Taken	The entire bid is traded out or removed and immediately replaced by a new offer
Offer Pulled	The entire inside offer is removed, resulting in a new higher offer price but the bid remains steady at the same price
Bid Pulled	The entire inside bid is removed, resulting in a new lower bid price but the offer remains steady at the same price
New Offer	A new offer is placed closer to the bid price, while the bid price remains steady
New Bid	A new bid is placed closer to the offer price, while the offer price remains steady
Bid Ask	The bid or/and ask is removed and replaced with no net change in the inside market prices

For each of the above events a unique alert is sounded depending on which sound mode PriceSquawk is using (PriceSquawk, Default) or if Voice is enabled or disabled. These can be controlled from the user options as shown below:

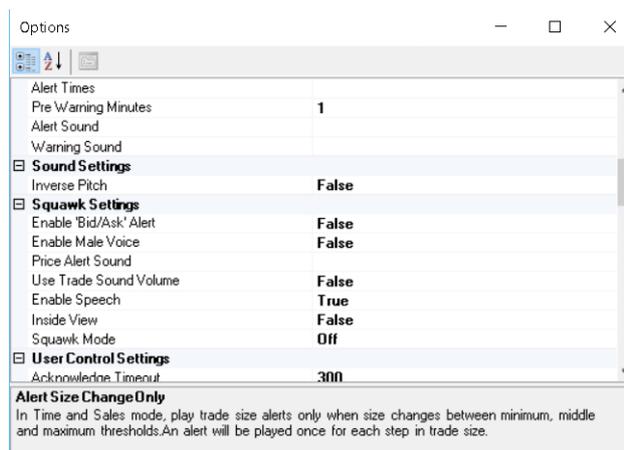
Enable 'Bid/Ask' Alert – Enable the “BidAsk” alert in Squawk mode, which tells us that the inside market flickered back and forth without net change.

Enable Male Voice – Use male instead of female for inside market and price speech announcements when in Squawk mode

Price Alert Sound – Price Alerts are preceded by this sound effect e.g. 'Price Alert, Handle 28, Evens'

Use Trade Sound Volume – The active trade sound loudness is applied to the Squawk voice. Useful for announcing Price Action louder when trading activity increases

Enable Speech – By default speech is used for



inside market movement e.g. 'Offer Lifted'.
When disabled an alert sequence of Bid and Ask sounds is used instead.

Inside View – Display the inside market on the ladder view instead of the equalizer.

Squawk Mode - Off, InsideMarket (no price), Price (no inside market), Both

In PriceSquawk mode a voice alert announces each of the above events. This voice can be changed to male and for insight that the inside market changed too quick to see, 'BidAsk' announcement can be enabled.

Using Default Sound Mode (see [Audio Settings](#)) or with speech disabled in Squawk mode, a pattern of different pitched Bid and Ask trade sounds is used to alert for the above inside market events. I will use Do-Re-Mi terminology to represent three consecutive sounds, each with different pitch to describe the various events. If the event occurs on the offer side (ie offer lifted, offer pulled etc) then the Ask sound effect is used and vice versa for the bid side.

Event	Effect
Offer Lifted	Do-Re-Mi (offer sound effect)
Bid Taken	Mi-Re-Do (bid sound effect)
Offer Pulled	Re-Mi (offer sound effect)
Bid Pulled	Re-Do (bid sound effect)
New Offer	Re-Do (ask sound effect)
New Bid	Re-Do (bid sound effect)
Bid Ask	Do-Re-Mi-Re-Do (bid sound effect)

If in PriceSquawk mode and the Bid and Ask are set to alert sounds (sound name begins with a **) then that alert sound is played once per event. The bid alert sound is played for all bid related events, and the offer alert sound is played for all offer related events. If an alert sound is selected as your alert sound effect option, then this specific alert is played for 'Bid Ask' events.

The best way to get familiar with these events is to enable the Inside Market View and observe the bid and ask changing and the associated sound effects.

Inside Market View

Inside Market View is automatically enabled when you initially select New Bid/Ask Alert from the Sound Menu or can be enabled / disabled from the Bid Ask Settings in user options.

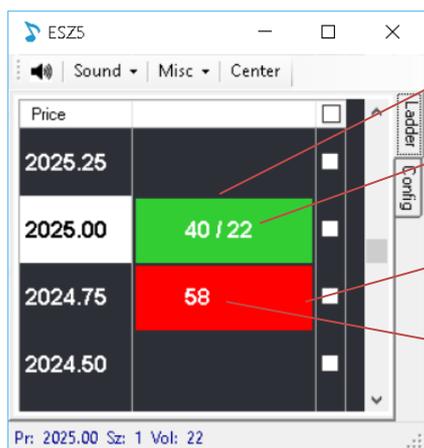


Figure 38 - Inside market view

Ask price is highlighted by the Ask Bar equalizer color

Traded volume is displayed against Bid or Ask trade (after the '/')

Bid price is highlighted by the Bid Bar equalizer color

Bid and Ask volume are displayed when available (not available with Jigsaw)

The traded volume value displayed depends on which mode PriceSquawk is currently operating. If in Auto mode then traded volume shows how much has traded in the last X seconds. In Time & Sales mode this value will always display the last trade size, and volume at price mode will show the accumulated volume traded at that price etc.

Price Announcement

Introduced in V5.2 – PriceSquawk announces the Bid or Offer prices when the inside market changes. PriceSquawk will only announce one or the other based on the change in inside market. For example, if the 'Bid Taken' inside market alert were to be played, then PriceSquawk will give the new Offer price. If the bid is pulled, the new Bid price is given.

For the E-mini, Evens, 25s, 50s and 75s Bid or Ask are announced, and each handle is announced. For other markets, the last two digits are announced, and if the integral value changes (left hand side of the decimal) the new handle is announced.

Using Trade Sound Volume

PriceSquawk lets you filter your Squawk announcements by using the current Trade Sound Volume. This allows you to configure unique order flow and volume / liquidity filter conditions using your [Trade Sound Mode](#) options and [Volume Control](#) modes to automatically enable and disable the squawk. You can then tune into the price action commentary selectively instead of it broadcasting continuously. For example you may want to hear the inside market commentary only when the bid and offer volume is above a certain threshold. To do this enable 'Trade Sound Volume' control over your squawk from your squawk settings:

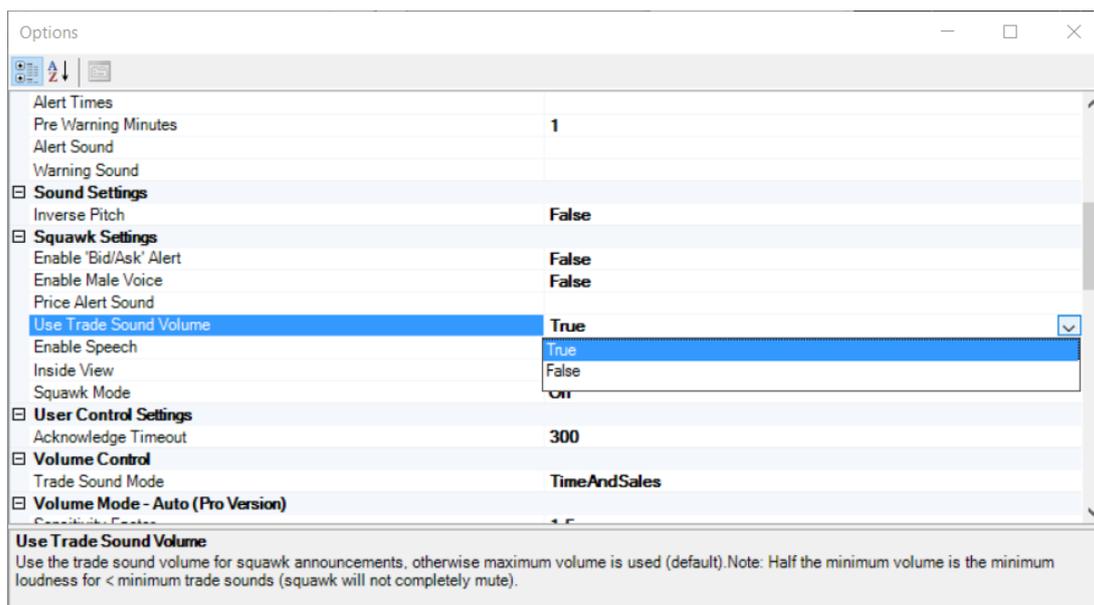


Figure 39 - Filtering squawk by trade sound volume

Next set up your trade sound filtering using Bid Offer Volume mode:

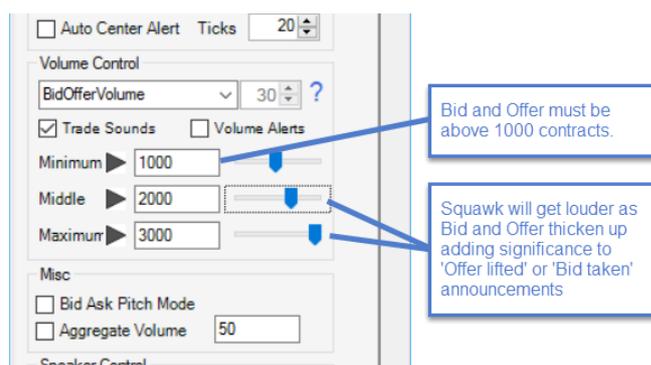


Figure 40 – Filtering squawk by Bid Offer trade sound settings

Using these settings price action and inside market activity will be commented by the squawk only when the inside market volume registers as above 1000 contracts. Inside market commentary such as ‘Offer Lifted’ and ‘Bid Taken’ will be announced at louder levels as the inside market thickens up above 2000 contracts and 3000+ contracts. As the inside market tends to thicken up between price swings where increased liquidity exists, these settings let you tune into the price action / order flow on demand, filtering out the sometimes confusing, ‘back and forth’ bid and offer commentary that exists during fast price movement and in thinner markets.

Speaker Control

If Stereo Effect is selected under the Speaker Control section then PriceSquawk will split trades into those that occur at the bid price and trades at the offer/ask. You can then select which speaker the Bid trades are heard out of, and which speaker the Ask trades sound from. You can also choose to mute the Bid or Ask sounds. For example, mute the Right speaker and select the Bid as the Left speaker so that only the Bids are heard (out of the Left speaker). You could then use another PriceSquawk to play a different sound for trades lifting the Ask price, out of the Right speaker.

Mono Select can be used to force all sound to play out of the Left or Right speaker. This is useful if you have PriceSquawk enabled for multiple markets. For instance you might prefer to have the E-mini trades sounding out the left speaker, and the T-note sounding out the right speaker if interested in the price action in both markets.

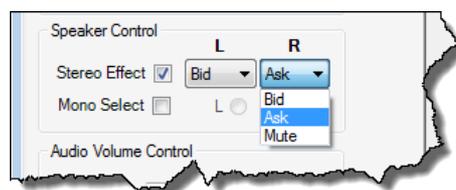


Figure 41 - Speaker Control

Price Alerts

The trader easily enables alerts by checking a box on the Ladder tab at the price levels concerned with. If Alerts is disabled from the Sound Menu this column will be highlighted red. When a trade occurs at an alert level then the selected Alert Sound is played instead of the Main Sound. Alerts will not be heard if Mute is enabled; otherwise alerts will always play at the at the maximum sound level set in [Volume Control](#). The pitch of alerts will vary based on price similar to trade sounds, such that alerts at different price levels can be differentiated – consistent Pitch can be enabled by selecting a Unison pitch interval – or enabling Bid / Ask Pitch Mode.

If Trade Sounds are disabled, then a one off Price Alert is played when the alert price is traded at or crossed. The alert will not be activated again for the ‘Acknowledge Timeout’ period configured in user options.

The price alert sound used is selected from the Alert Sound menu.

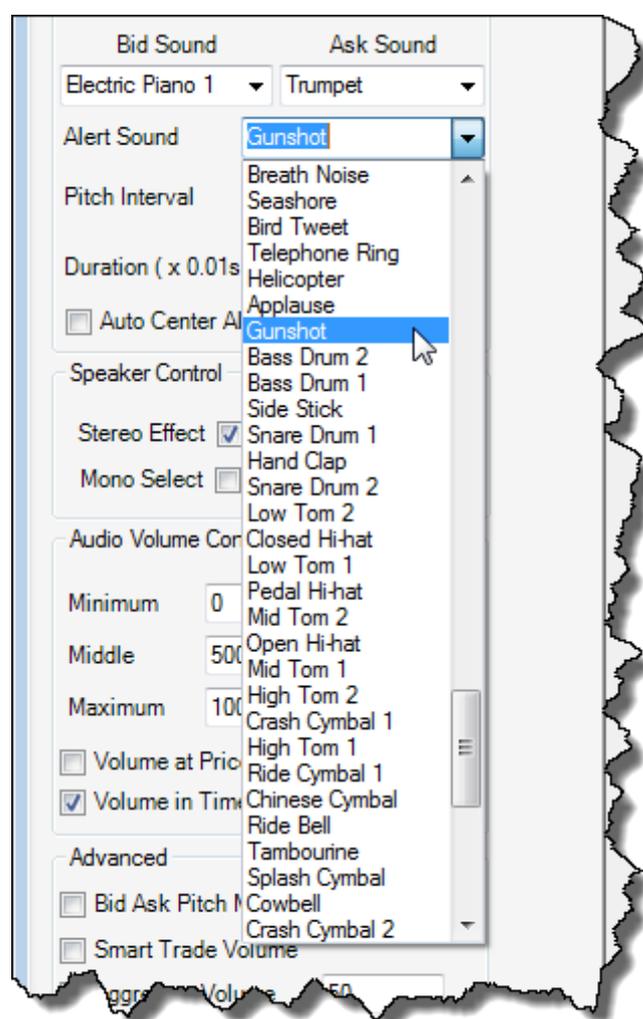


Figure 42 – Classic Alert Sounds

Alert Acknowledgement

Hotkeys can be configured to acknowledge alerts globally or for an individual PriceSquawk window. On pressing the hotkey, the activated alert/s will be ignored for the user defined number of seconds. Unchecking an alert and re-checking it from the Ladder, will re-arm acknowledged alerts. When an alert has been acknowledged, normal trade sounds for that price will be played instead.

Price Action Mode

This mode is used in addition to Trade Sounds to only play one sound per price level. This is useful if the trader is purely interested in price action and not so much in individual trade events. The same settings that apply to Trade Sounds apply in New Price Only mode, however only one note will sound per price level.

Always On Top

You can set PriceSquawk windows to always display on top within your windows screen by accessing the 'Misc' menu and selecting 'Always On Top'.

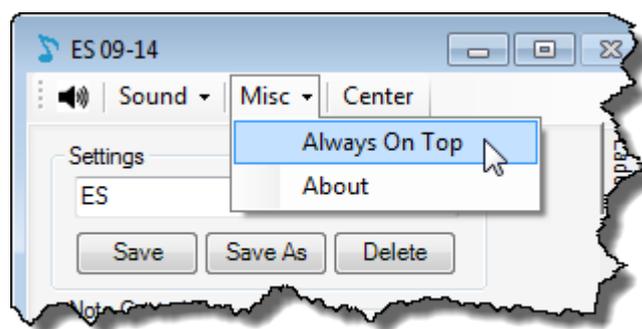


Figure 43 - Always On Top Selection

Inverse Pitch

When enabled, the Inverse Pitch setting changes the Pitch / Price relationship so that an increase in price results in a decrease in pitch of trade sounds. This can be useful when using PriceSquawk to monitor and compare multiple markets that have an inverse price relationship.

Support

PriceSquawk will continue to evolve, as we figure out new and better ways to transfer market information into the audible spectrum. If you have any suggestions or ideas on how market information and day trading can be enhanced further by integration with PriceSquawk please contact me via the website contact page.

For support please email support@pricesquawk.com

Support can also be obtained via contacting Skype username: TheSoundTrader

Midi License

PriceSquawk uses third party software for interfacing to the Microsoft MIDI functionality provided in the Win32 application programming interface. Midi.dll is distributed as part of the PriceSquawk install package, and subject to the following license terms:

midi-dot-net (midi.dll) is distributed under the new BSD License.

<https://code.google.com/p/midi-dot-net/>

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