



# IEX ATS Subscriber Manual

Version: 2.9

Updated: July 25, 2016



# Contents

- INTRODUCTION..... 4**
  - Our Mission..... 4
  - How We Operate..... 4
  
- ACCESS TO THE MARKET ..... 5**
  - Subscriber Application..... 5
  - Connectivity ..... 5
  - Bandwidth Requirements..... 6
  - FIX Order Entry..... 6
  - Market Data Dissemination ..... 6
    - Top of Book Quote Feed (“TOPS”) 6
  
- MARKET OPERATION ..... 6**
  - IEX Trading..... 6**
    - Hours of Trading and Trading Days 6
    - Securities Eligible for Trading 7
    - Clearing 7
  - Display of Orders and Trades..... 7**
    - Displayed 8
    - Reserve 8
    - Non-Displayed 8
    - Printing 8
  - IEX Order Book..... 8**
    - Book Priority 8
    - IEX Order Book Priority Management (Time Stamping) 9
    - Queue Priority 9
    - Anti-Internalization 9
    - Priority of Routed Orders 10
    - Order Amendment 10
    - Order Cancellation 11
    - Minimum Price Variation 11
    - Units of Trading 11
    - Pricing 11
  - Order Types and Parameters..... 12**
    - Time in Force Values 12
    - Order Types 13



Order Parameters	15
Routing Parameters	17
<b>Order Execution and Routing</b> .....	<b>18</b>
Order Execution	19
Order Routing	20
<b>Special Handling</b> .....	<b>21</b>
Locked and Crossed Markets	21
One-Sided Markets	22
Zero Markets	22
Sub-Dollar Pricing	22
Order Collars and Constraints	22
Trading Halts (Regulatory and non-regulatory)	24
<b>MARKET CONDUCT</b> .....	<b>25</b>
<b>COMPLAINTS AND DISPUTES</b> .....	<b>25</b>
<b>CLEARLY ERRONEOUS TRANSACTIONS POLICY</b> .....	<b>25</b>
<b>BUSINESS CONTINUITY PLAN DISCLOSURE STATEMENT</b> .....	<b>25</b>
<b>CONTACT US</b> .....	<b>26</b>
Subscriber Access, New Jersey POP (Point of Presence) .....	26
Subscriber Access, Illinois .....	26



# Introduction

This document provides information about the IEX ATS (the “System” or the “ATS”), operated by IEX Services LLC (“IEXS”), which is a wholly owned subsidiary of IEX Group, Inc. (“IEXG” and, together with IEXS, “IEX”).

Information contained in this document is subject to change at any time. Please refer to [http://www.iextrading.com/docs/IEX\\_Subscriber\\_Manual.pdf](http://www.iextrading.com/docs/IEX_Subscriber_Manual.pdf) for the latest version of the IEX ATS Subscriber Manual.

## Our Mission

IEX’s mission is to realize true potential in the financial markets, on behalf of the greatest number of market participants.

IEX is realizing this potential by operating a market that balances the interests of traditional investors, brokers, and the market venue. This balance begins with our unique ownership and subscribership structure and carries through to our technology and infrastructure engineering, our order type selection, and our marketplace design.

IEX is unique in that it is a registered ATS owned via its parent company by a consortium of investors, including mutual funds, hedge funds, family offices, and individuals. Additionally, IEX only allows registered broker-dealers, or broker-dealers that are exempt from registration, to become its Subscribers, recognizing their integral role in the investment process.

IEX focuses on investor protection and performance by creating a market that aims to maximize shares traded at the best available price, decreases information leakage and promotes an opportunity for natural interest to interact without unnecessary intermediation. IEX is dedicated to offering fair access to a balanced marketplace, and delivering a defined and objective experience in support of just and equitable principles of trade.

## How We Operate

The IEX ATS is a fully automated electronic limit order book for orders to buy and sell National Market System (“NMS”) equity securities with a continuous, automated matching function. The ATS currently offers a limit order book with displayed and non-displayed order types.

IEX also offers routing functionality with direct connectivity to all venues displaying Protected Quotations as defined by Regulation NMS.

Participation in the ATS will be open to any broker-dealers who (1) are registered under Section 15(b) of the Securities Exchange Act of 1934 or exempt from registration therefrom; (2) meet the standards for participation set forth in the IEX Subscriber Application; and (3) execute an IEX Subscriber Agreement.

All order entry and trade related communications with the ATS will be facilitated via the IEX Financial Information Exchange (“FIX”) application protocol interface (“API”).

In operating the ATS, IEX conducts itself strictly in an Agency capacity, with the exception of offsetting of bona fide errors through its own error account, whereby IEX outsources such trading to a third party, currently Morgan Stanley. IEX has no broker affiliates. All Subscribers have equal access to the ATS and its features and functions. Subscribers are anonymous on all trades, with IEX as counterparty for all trades, reports and clearing submissions.



# Access to the Market

## Subscriber Application

The System shall be available for entry and execution of orders by Subscribers with authorized access. To obtain authorized access to the System, each Subscriber must enter into a Subscriber Agreement and must be a registered broker-dealer. Please refer to the:

- IEX Subscriber Application at [www.iextrading.com/docs/IEX\\_Subscriber\\_Application.pdf](http://www.iextrading.com/docs/IEX_Subscriber_Application.pdf).
- IEX Subscriber Agreement at [www.iextrading.com/docs/IEX\\_Subscriber\\_Agreement.pdf](http://www.iextrading.com/docs/IEX_Subscriber_Agreement.pdf).

IEX shall process all complete applications and approve or deny prospective Applicants within thirty (30) calendar days of receipt of a substantially complete application form. Specifically, IEX shall, after receiving a completed Subscriber Application and signed Subscriber Agreement, and any additional documentation required by IEX, in its sole discretion, approve or reject such application, or approve such application subject to conditions and/or restrictions as it considers appropriate. IEX shall thereafter promptly notify the applicant of its decision.

IEX shall not unreasonably prohibit nor limit any person or entity with respect to accessing services offered by the System by applying its application review standards in an unfair or discriminatory manner. Subscriber activity on the ATS shall comply with the terms of IEX Subscriber Agreement and this Subscriber Manual.

For more information on completing a Subscriber Application, please contact IEX Sales at 646.343.2100 or [subscriber@iextrading.com](mailto:subscriber@iextrading.com).

## Connectivity

Subscribers of the ATS and/or Service Bureaus acting on behalf of a Subscriber (“Participants”) are permitted to electronically send orders to buy and sell securities traded on the ATS through the use of the FIX API. The ATS will not accept telephone orders.

Direct access to the ATS is available to Subscribers at an Internet Protocol (“IP”) address via communications that are compliant with the FIX API provided by the ATS. The ATS currently supports FIX 4.2.

The ATS provides a range of IP addresses for each requested connection, or the Subscriber provides the ATS with a range of unique globally routable addresses assigned to the Subscriber, from which Subscribers will be able to connect, and the ATS then configures its network routers to only allow access from the Subscriber’s IP address to a dedicated IP address on the ATS’s order handling network. In this way, only authorized Subscribers can gain access to IEX via registered physical IP addresses.

Subscribers will be responsible for safeguarding access to the ATS and for notifying the ATS upon learning that such safeguards have been compromised. Connectivity to the ATS will occur through secure telecommunications “ports” or points of entry. Specifically, each Subscriber will be assigned a specific port, or multiple ports, each of which has a unique session identification code provided only to such Subscriber.



# Bandwidth Requirements

Please refer to the IEX Connectivity Guide available at [www.iextrading.com/docs/IEX\\_Connectivity\\_Guide.pdf](http://www.iextrading.com/docs/IEX_Connectivity_Guide.pdf).

# FIX Order Entry

Please refer to the IEX FIX Specification available at [www.iextrading.com/docs/IEX\\_FIX\\_Specification.pdf](http://www.iextrading.com/docs/IEX_FIX_Specification.pdf).

# Market Data Dissemination

## Top of Book Quote Feed (“TOPS”)

TOPS is a proprietary, real time, non-protected top of book quote feed.

Please refer to the IEX TOPS Specification at [http://www.iextrading.com/docs/IEX\\_TOPS\\_Specification.pdf](http://www.iextrading.com/docs/IEX_TOPS_Specification.pdf).

### *Non-Protected Quote*

The aggregated IEX displayed top of book interest is not a protected quotation (as defined under Rule 600 of Regulation NMS). The IEX top of book is not disseminated through a National Market System Plan Securities Information Processor (SIP) because it is not published by IEX to a national securities exchange or a national securities dealer association system. The IEX top of book is only be available through the TOPS or the IEX website at <http://iextrading.com/tops/>.

This means that the best bid and the best offer in each security on IEX's displayed limit order book does not enjoy trade through protection under the Rule 611 of Regulation NMS, the "Order Protection Rule." Other Market Centers and Market Participants are not required to satisfy the IEX quote before trading at an inferior price.

# Market Operation

## IEX Trading

### Hours of Trading and Trading Days

Orders may be executed on the ATS or routed away from the ATS during the Pre-Market, Regular Market and Post-Market Sessions, collectively known as “System Hours”.

Session	Start and End Time (all times are Eastern Standard)
Begin Order Entry Acceptance	8:00 a.m.
Pre-Market Session	8:00 a.m. – 9:30 a.m.
Regular Market Session	9:30 a.m. – 4:00 p.m.
Post-Market Session	4:00 p.m. – 5:00 p.m.

The ATS will be closed in observance of the following holidays:

- New Year’s Day



- Dr. Martin Luther King Jr. Day
- President's Day
- Good Friday
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas

When any such holiday falls on a Saturday or Sunday, the ATS will follow the direction of the New York Stock Exchange ("NYSE") with respect to observing the holiday on an alternate weekday. The [IEX Holiday Schedule](#) is subject to change.

The Chief Executive Officer of IEX shall have the power to halt or suspend trading in any and all securities traded on the ATS, to close some or all ATS facilities, and to determine the duration of any such halt, suspension, or closing, when he or she deems such action necessary for the maintenance of fair and orderly markets, the protection of investors, or otherwise in the public interest including special circumstances such as (1) actual or threatened physical danger, severe climatic conditions, civil unrest, terrorism, acts of war, or loss or interruption of facilities utilized by the ATS, (2) a request by a governmental agency or official, or (3) a period of mourning or recognition for a person or event. No such action shall continue for longer than a period of two (2) days, or as soon thereafter as a quorum of the Board of Directors (the "Board") can be assembled, unless the Board approves the continuation of such suspension.

## Securities Eligible for Trading

The ATS shall designate securities for trading. Specifically, IEX will offer trading in equity securities, as defined in Section 3(a)(11) of the Securities Exchange Act of 1934, that are also NMS securities, as defined by Regulation NMS Rule 600(b)(47). NMS stocks include NYSE-listed (Tape Plan A), NASDAQ-Listed (Tape Plan C) and other-listed (Tape Plan B) securities.

All securities designated for trading are eligible for odd-lot, round-lot and mixed-lot executions, unless otherwise indicated by the ATS or expressly limited pursuant to this Subscriber Manual.

## Clearing

"IEXG" will be the counter-party MPID to all trades facilitated by the ATS. All System trades will be cleared as locked-in, Qualified Special Representative ("QSR") and settled Regular Way through IEX's Clearing Firm, Broadcort, a division of Merrill Lynch, Pierce Fenner & Smith, Inc. (clearing number 0161).

## Display of Orders and Trades

The ATS allows posted orders to be fully Displayed, partially displayed (i.e., Reserve Orders), or Non-Displayed according to Subscriber instructions. The IEX Order Book priority is described as Price – Display – Time including reserve portions of Orders. Orders resting on the IEX Order Book receive a timestamp and are given priority at their resting price level at the time when the order is posted to the Order Book, and otherwise as described in the "Book Priority" section below.

In accordance with regulatory requirements, including Rule 301(b)(3) of Regulation ATS, IEX will restrict access to its displayed trading functionality for certain specified symbols, upon notice, from time to time.



## Displayed

“Displayed Orders” are limit orders that have the full order quantity displayed. Displayed orders must represent a quantity of at least one whole round-lot. When the order quantity is reduced to a value less than a single round-lot amount, the order will no longer be displayed, and will then be prioritized as a Non-Displayed Order.

## Reserve

“Reserve Orders” are limit orders that have a displayed portion; the displayed portion of a reserve order, which is equal to or greater than one round-lot and no larger than the order quantity. An inbound Reserve Order received by IEX is first processed as a single order of its full, unexecuted share quantity as it checks the Order Book for eligible resting contra interest. Once the Reserve Order is posted to the Order Book, it is effectively treated as two discrete orders: one displayed order for the display share quantity defined by the Subscriber, and one non-displayed order for any remaining unexecuted “reserve” shares. Both the displayed and non-displayed (“reserve”) portions of a Reserve Order are available for potential execution against incoming orders. If the displayed portion of a Reserve Order is reduced to less than one round-lot, the System will replenish the display portion from reserve up to at least a whole round-lot amount. Each time the displayed portion of the order is replenished from reserve, that portion is prioritized behind other existing displayed orders; the priority of the non-displayed portion, however, is unchanged by the replenish process.

## Non-Displayed

“Non-Displayed Orders”, including the reserve portion of Reserve Orders, will not be displayed to any Subscriber of the ATS or other market participant, but nevertheless remains available for potential execution against all incoming orders until executed in full or canceled. Pegged Orders are always non-displayed.

Whenever the remaining unexecuted quantity of a Displayed or Reserve Order is reduced to less than one (1) Round Lot (reduced to an odd-lot), the remainder of the order is treated as a Non-displayed Order.

## Printing

The ATS will report its media eligible transactions (Tape Trades), and the corresponding offsetting non-media transactions, as applicable, to the FINRA/NYSE Trade Reporting Facility (“TRF”). IEX will not submit non-media transactions to the TRF for trades executed at venues away from IEX.

# IEX Order Book

## Book Priority

All orders are matched according to Price-Display-Time. Book Priority is best illustrated as:

Best Price;

→ Displayed;

→ Time.

Resting orders whose conditions are not met (e.g., Minimum Quantity) surrender their priority against a new Order entering the Order Book. Additionally, working portions of orders do not enjoy Order Book priority while working (e.g., resting or routing away) and are unavailable for execution on the Order Book.

The Displayed Order Book includes: Orders not marked Non-displayed or Reserve and displayed portions of Reserve Orders.





The Non-Displayed Order Book includes: Orders marked Non-displayed; non-displayed portions of Reserve Orders; Pegged Orders; Minimum Quantity Orders; and Odd Lots.

## IEX Order Book Priority Management (Time Stamping)

For determining time in Book Priority, the ATS manages order timestamps as described below:

- Displayed Original Time Stamp (“OTS”) preserved on Displayed Orders until:
  - Incremented by the Subscriber,
  - Re-priced by the Subscriber,
  - Replenished from Reserve by the System,
  - Re-priced by the System
  - Reduced to less than one Round Lot, or
  - Returned to the Order Book by the System (e.g. after routing).
- Non-Displayed OTS preserved on Non-Displayed Orders until:
  - Incremented by the Subscriber,
  - Re-priced by the Subscriber,
  - Minimum Quantity changed by the Subscriber,
  - Incremented by the System,
  - Re-priced by the System, or
  - Returned to the Order Book by the System (e.g. after routing).

## Queue Priority

“Queue Priority” refers to the priority of orders submitted to the ATS with TIFs ineligible for trading in the Pre-Market Session but queued for the Regular Market Session Opening Process. While queued, orders are prioritized by their entry time.

## Anti-Internalization

Anti-Internalization is a broker-level setting to prevent self-match of two orders from the same broker on the Order Book. Anti-Internalization is not enabled by default, to turn on Anti-Internalization please contact IEX Market Operations. Anti-Internalization may be enforced for orders in one of following groupings:

- By Broker (analogous to “by CRD#”), across all MPIDs belonging to the broker, or;
- By MPID or MPIDs, but not across MPIDs, belonging to the broker, or;
- By FIX session or sessions (either within one session or across multiple sessions) belonging to the broker.

Broker Subscribers may elect all orders within the same group type defined above as subject to Anti-Internalization. Principal and Agency orders may have different default settings. Alternatively, brokers may elect no default setting, and subsequently mark each order with the necessary Anti-Internalization Group ID (FIX Tag #7928) for complete control over Anti-Internalization.

If a Subscriber wishes to exclude any single order from the grouping behavior, thus allowing it to match with any other order from that Subscriber, IEX supports a “free-to-trade” identifier (“-”) in Anti-Internalization Group ID (FIX Tag #7928). Alternatively, a Subscriber may override the default settings for any number of orders by marking each order with the Subscriber specified Anti-Internalization Group ID.

In situations when two orders from a broker subject to Anti-Internalization would match, the older of the orders is canceled. Determination of “older” is based upon the time the order is received by the IEX Matching Engine, including; by initial order entry, Subscriber revision (i.e. cancel/replace) or returning to the Order Book from routing.



### *Compatibility with Minimum Quantity*

In the event an active order subject to Anti-Internalization has a minimum quantity parameter or FOK designation, IEX will determine satisfaction of the size requirement as normal without excluding any resting orders from the same Subscriber which would be canceled under IEX Anti-Internalization.

An active order may be canceled under Anti-Internalization before the minimum quantity has been satisfied (see Compatibility with Book Recheck, below).

### *Compatibility with Book Recheck*

In the event that an active (rechecking) order is older than a resting order which would be canceled under IEX Anti-Internalization, the older active order will be canceled at the time it reaches the resting order in the course of IEX Book Priority as described below.

## Priority of Routed Orders

Orders sent by the System to other market centers do not retain time priority with respect to other orders in the System and the System shall continue to execute other orders while routed orders are away at another market center. Once routed by the System, an order becomes subject to the rules and/or procedures of the destination market including, but not limited to, short-sale regulation and order cancellation.

If a routed order, prior to being posted in the Order Book, is subsequently returned from one or more destination venues, and is to be posted on the Order Book, in whole or in part, that order, or its remainder, shall receive a current timestamp reflecting the time of its posting.

## Order Amendment

Open orders may be amended by Subscribers at any time. Amendment (cancel/replace) messages are processed in the order in which they are received by the System. Amendments may affect an order's priority, see below for details on how order amendment affects priority.

Requests from Subscribers to amend an order while an order is routed away to another external destination and remains outside the System shall be processed, subject to the applicable trading rules/procedures of the relevant external destination.

Subscribers may only amend the following fields of an existing order:

- Order Quantity (FIX Tag #38)
- Price (FIX Tag #44) (for Peg and Limit orders)
- Minimum Quantity (FIX Tag #110)

Amendments of an invalid field received in conjunction with a valid field amendment will cause the invalid field amendment to be ignored by IEX. Amendments of only invalid fields will be rejected by the System.

### *Order Quantity Amendments and Priority*

For non-routable orders, Book Priority and Queue Priority are preserved when amending Order Quantity to a value lesser than the current value. Book Priority and Queue Priority are lost when amending Order Quantity to a value greater than the current value or when amending any other value in addition to the Order Quantity.



For routable orders, Queue Priority is lost when amending Order Quantity. Book Priority for routable orders is preserved when amending Order Quantity to a value lesser than the current value. Book Priority is lost when amending Order Quantity to a value greater than the current value or when amending any other value in addition to the Order Quantity.

#### *Price Amendments and Priority*

Book Priority and Queue Priority are lost when amending Price. Price may be added to an unpriced Pegged Order, however, Price may not be removed from a priced Pegged Order.

#### *Minimum Quantity and Priority*

Book Priority and Queue Priority are lost when amending Minimum Quantity.

## Order Cancellation

Open orders may be canceled by Subscribers at any time. Cancel messages are processed in the order in which they are received by the System.

Requests from Subscribers to cancel an order while an order is routed away to another external destination and remains outside the System shall be processed subject to the applicable trading rules/procedures of the relevant external destination.

## Minimum Price Variation

The minimum price variation ("MPV") for orders entered into the System shall be \$0.01 for orders priced \$1.00 or greater, and \$0.0001 for orders priced below \$1.00.

## Units of Trading

The Unit of Trading for securities traded on the ATS will be one (1) share. A Round Lot will typically be one hundred (100) shares. Certain securities, as designated by their Listing Markets, have Round Lots of less than one hundred (100) shares. IEX will conform to the direction of such Listing Markets in this regard.

Odd-Lots are orders that represent a quantity lesser than one (1) Round Lot. Mixed Lots are orders of at least one (1) Round-Lot but not a multiple of Round-Lots (e.g., 175 shares).

## Pricing

#### *Regulation SHO Price Sliding*

During times when the Short Sale Price Test is in effect ("Short Sale Period"), as communicated through the relevant Securities Information Processor ("SIP") by the appropriate Primary Listing Market:

#### **Short Sales**

- Non-displayed Short Sales: All short sale, non-exempt orders posting to or resting on the Order Book with a limit price equal to or lower than the NBB, will be re-priced by the ATS to the midpoint of the NBBO.
- Displayed Short Sales: All short sale, non-exempt displayed orders posting to or resting on the Order Book with a limit price equal to or lower than the NBB, will be re-priced by the ATS to a price equal to the MPV-adjusted Midpoint Price.
- To reflect eases in the NBB (lowering), the ATS will re-price such slid short sale, non-exempt resting orders appropriately above the NBB each time it eases, until the midpoint of the NBBO or the limit price of the order is reached, the order is fully executed, the order is canceled by the Subscriber, or the order is canceled consistent with its TIF instructions.



### *Midpoint Price Constraint (patent pending)*

#### **Displayed Order Price Sliding**

Displayed Orders and the displayed portion of Reserve Orders will follow the Midpoint Price Constraint paradigm on the Order Book; adjusted for whole Minimum Price Variants ("MPV"). That is, Displayed Orders posting to the Order Book at prices equal to or more aggressive than the midpoint price of the NBBO ("Midpoint Price") will be booked at a whole-MPV price level based on the Midpoint Price, rounding towards a less aggressive price level in the case where the Midpoint Price is at a half-tick.

IEX does not consider its own quote for calculating the NBBO for pricing Pegged Orders, since IEX's quote is not protected.

#### **Non-Displayed Order Price Sliding**

Non-Displayed Orders, including conditional orders (e.g., Minimum Quantity) and non-displayed portions of Reserve Orders posting to the Order Book at prices equal to or more aggressive than the Midpoint Price will be booked at a price equal to the Midpoint Price.

To reflect changes to the NBBO, the ATS will re-price all orders booked at the Midpoint Price each time the NBB or NBO changes, until the limit price of the order is reached, the order is fully executed, the order is canceled by the Subscriber, or the order is canceled consistent with its TIF instructions.

#### **Limit Up-Limit Down Price Constraint**

All orders booked on the ATS will be priced no more aggressively than the current Limit Up-Limit Down Price Constraint ("Limit Band Price"), as disseminated by the applicable SIP when such parameters are published.

In the case where a Limit Band Price updates to make the price of a resting order more aggressive than permissible, the System will adjust the price of such resting order to be equal to the Limit Band Price. In the case where a Limit Band Price updates to allow a more aggressive price than the current price of a resting order constrained to the Limit Band Price, the System will adjust such order to be as aggressively priced as regulations, the market, the order's limit price, and System rules will permit.

## Order Types and Parameters

### Time in Force Values

The term Time in Force ("TIF") shall mean the period of time that the System will hold an order for potential execution and shall include;

#### *Immediate-or-Cancel ("IOC")*

Orders entered into the System marked IOC are executed on the ATS or routed to an away venue, in whole or in part, as soon as such order is received, and the portion not so executed is canceled. Orders marked IOC are never posted to the Order Book and considered by definition to be non-displayable orders.

#### *Fill or Kill ("FOK")*

Orders entered into the System marked FOK are executed on the ATS for their full quantity or canceled immediately upon becoming unmarketable or otherwise non-executable based on order instructions, market conditions, and System rules. Orders marked FOK are never posted to the Order Book and considered by definition to be non-displayable orders. Routable orders marked FOK are rejected.



### *Day (“DAY”)*

Orders entered into the System marked DAY may queue during the Pre-Market Session. When queued, orders will participate in the Opening Process before becoming available for the Regular Market Session. Orders marked DAY are only available for trading or routing during the Regular Market Session and expire at the end of the Regular Market Session.

### *Good ‘til Time (“GTT”)*

Orders entered into the System marked GTT are available during System Hours and expire at the earlier of the Subscriber specified expire time or the end of the Post-Market Session.

### *Good ‘til Extended Day (“GTX”)*

Orders entered into the System marked GTX may queue during the Pre-Market Session. When queued, orders will participate in the Opening Process before becoming available for the Regular Market Session. Orders marked GTX are available for trading or routing during both the Regular and Post-Market Sessions, and expire at the end of the Post-Market Session.

### *System Hours (“SYS”)*

Orders entered into the System marked SYS may trade or route during System Hours and expire at the end of the Post-Market Session.

## Order Types

### *Limit Order*

“Limit Orders” are orders to buy or sell a stock at a specified price or better. Limit Orders may have a TIF of IOC, FOK, DAY, GTT, GTX, or SYS. Below is the supported functionality for each TIF and market session:

- Limit orders marked IOC are accepted and eligible to trade or route during the Pre-Market, Regular, and Post-Market Sessions.
- Limit orders marked FOK are accepted and eligible to trade during Pre-Market, Regular, and Post-Market Sessions.
- Limit orders marked DAY submitted before the open of the Regular Market Session are queued by the System until the Regular Market Session. Limit orders marked DAY submitted during the Regular Market Session are accepted and begin trading or routing immediately. Limit orders entered into the System marked DAY, if not fully executed or canceled by the Subscriber, expire at the end of the Regular Market Session. Limit orders marked DAY are rejected in the Post-Market Session.
- Limit orders marked GTT are accepted and eligible to trade or route during the Pre-Market, Regular, and Post-Market Sessions. Limit orders entered into the System marked GTT begin trading or routing immediately and, if not fully executed or canceled by the Subscriber, expire at the earlier of the expiration time assigned by the Subscriber or the end of the Post-Market Session.
- Limit orders marked GTX submitted before the open of the Regular Market Session are queued by the System until the Regular Market Session. Limit orders marked GTX submitted during the Regular Market and Post-Market Sessions are accepted and begin trading or routing immediately. Limit orders entered into the System marked GTX, if not fully executed or canceled by the Subscriber, expire at the end of the Post-Market Session.
- Limit orders marked SYS are accepted and eligible to trade or route during Pre-Market, Regular, and Post-Market Sessions. Limit orders entered into the System marked SYS begin trading or routing immediately and, if not fully executed or canceled by the Subscriber, expire at the end of the Post-Market Session.



### *Market Order*

"Market Orders" are un-priced orders to buy or sell a stated amount of a security that is to be executed at the NBBO when the order reaches the ATS. IEX Only Market Orders shall not trade through Protected Quotations, and IEX will cancel any portion of a Market Order that is unexecuted. Market Orders may be routable. A Routable Market Order, on the other hand, will trade at increasingly aggressive prices, fully satisfying all protected quotations, until the order is fully filled, reaches the LULD band, or reaches the Router Constraint. Market Orders may not be marked ISO. Market Orders must have a TIF of IOC, FOK, or, depending on the port setting elections applied by the Subscriber, may have a TIF of DAY. When the Subscriber's port setting is enabled, Market Orders with a TIF of DAY are treated by the System as having a TIF of IOC, otherwise they are rejected by the System. Market Orders are not eligible to execute or route outside of the Regular Market Session. Below is the supported functionality for each TIF and market session:

- Market orders marked IOC are rejected during the Pre-Market and Post-Market Sessions. Market orders marked IOC are accepted and eligible to trade or route during the Regular Market Session.
- Market orders marked FOK are rejected during the Pre-Market and Post-Market Sessions. Market orders marked FOK are accepted and eligible to trade during the Regular Market Session.
- Market orders marked DAY, by default, are rejected. When the Subscriber's port setting is enabled, Market orders marked DAY are accepted and eligible to trade or route during the Regular Market Session. Market orders marked DAY are treated by the System as having a TIF of IOC.
- Market orders marked GTT are rejected.
- Market orders marked GTX are rejected.
- Market orders marked SYS are rejected.

### *Pegged Order*

"Pegged Orders" are non-displayed limit or un-priced orders that, upon entry into the System and while resting on the Order Book, are priced automatically as determined by the System to the "pegged" price. Pegged Orders only execute at IEX, and are not eligible for routing. Pegged Orders are not eligible to trade outside of the Regular Market Session. Pegged Orders may have a TIF of IOC, FOK, DAY, GTT, GTX, or SYS. Below is the supported functionality for each TIF and market session:

- Pegged orders marked IOC are rejected during the Pre-Market and Post-Market Sessions. Pegged orders marked IOC are accepted and eligible to trade during the Regular Market Session. Primary Peg orders marked IOC are always rejected.
- Pegged orders marked FOK are rejected during the Pre-Market and Post-Market Sessions. Pegged orders marked FOK are accepted and eligible to trade during the Regular Market Session. Primary Peg orders marked FOK are always rejected.
- Pegged orders marked DAY submitted before the open of the Regular Market Session are queued by the System until the Regular Market Session. Pegged orders marked DAY submitted during the Regular Market Session are accepted and begin trading immediately. Pegged orders entered into the System marked DAY, if not fully executed or canceled by the Subscriber, expire at the end of the Regular Market Session. Pegged orders marked DAY are rejected during the Post-Market Session.
- Pegged orders marked GTT are rejected during the Pre-Market and Post-Market Sessions. Pegged orders entered into the System marked GTT during the Regular Market Session begin trading immediately and, if not fully executed or canceled by the Subscriber, expire at the earlier of the expiration time assigned by the Subscriber or the end of the Regular Market Session.
- Pegged orders marked GTX are rejected during the Pre-Market and Post-Market Sessions. Pegged orders marked GTX submitted during the Regular Market Session are accepted and begin trading immediately. Pegged orders



entered into the System marked GTX, if not fully executed or canceled by the Subscriber, expire at the end of the Regular Market Session.

- Pegged orders marked SYS are rejected during the Pre-Market and Post-Market Sessions. Pegged orders marked SYS are accepted and begin trading immediately during the Regular Market Session. Pegged orders entered into the System marked SYS, if not fully executed or canceled by the Subscriber, expire at the end of the Regular Market Session.

### Primary Peg Order

Upon entry, a Primary Peg Order is priced by the System to be equal to the primary quote, the NBB for buy orders, NBO for sell orders. Unexecuted shares are posted to the Order Book priced equal to the primary quote and automatically adjusted by the System in response to the changes in the NBB or NBO. During locked and crossed markets, IEX determines the NBB or NBO using the process described in the “Special Handling” section. Primary Peg Orders are not eligible for Book Recheck or routing and must have a TIF of DAY, or may have a TIF of GTT, GTX or SYS during the Regular Market Session.

### Midpoint Peg Order

Upon entry, a Midpoint Peg Order is priced by the System to be equal to the midpoint of the NBBO (“Midpoint Price”). Unexecuted shares are posted to the Order Book priced equal to the Midpoint Price and automatically adjusted by the System in response to changes in the NBBO. For Midpoint Prices that may be expressed within four (4) decimal places of the dollar, the ATS uses the Midpoint Price; for Midpoint Prices which would require a fifth decimal place beyond the dollar, the ATS uses the nearest, passive, fourth decimal price. Midpoint Peg Orders must have a TIF of DAY, or may have a TIF of FOK, IOC, GTT, GTX or SYS during the Regular Market Session.

### Discretionary Peg Order

Upon entry, a Discretionary Peg Order is priced by the System to be equal to the Midpoint Price. Unexecuted shares are posted to the Order Book priced equal to the primary quote and automatically adjusted by the System in response to changes in the NBB or NBO. Discretionary Peg Orders can exercise price discretion to the Midpoint Price and respond to quote stability signals from the System. Discretionary Peg Orders must have a TIF of DAY, or may have a TIF of FOK, IOC, GTT, GTX or SYS during the Regular Market Session.

**Price Discretion:** Discretionary Peg Orders exercise the least amount of price discretion necessary, from the resting price to the less aggressive of the Midpoint Price or the peg’s limit price, to meet the limit price of orders entering the Order Book. When exercising discretion, Discretionary Peg Orders maintain time priority at their resting price and are prioritized behind any resting orders at the discretionary price. Discretionary Peg Orders are eligible to Recheck the Order Book to the Midpoint Price.

**Quote Stability:** During periods of quote instability, Discretionary Peg Orders are not eligible for Book Recheck and do not exercise price discretion. Quote stability is determined by the System based on an IEX proprietary assessment of relative quoting activity of Protected Quotations over a given period of time.

## Order Parameters

### *Minimum Quantity*

Non-Displayed Orders may be submitted with minimum quantity parameters. Minimum Quantity Orders (“MQTY”) are sent with a minimum quantity instruction and minimum quantity size parameter. MQTY must have at least their minimum indicated share size satisfied in order to execute. MQTY must be defined with an Execution Instruction of IEX Only, Discretionary Peg, Primary Peg, or Midpoint Peg.



Upon order entry, or order amendment by the Subscriber, the “effective minimum quantity” of an order is equal to the lesser of the submitted minimum quantity or the total share quantity of the order.

IEX utilizes the following methods to determine the satisfaction of minimum quantity instructions for an order:

### Composite

When a MQTY marked Composite is Active (an Active Order), the MQTY executes provided the aggregate execution size it will receive from one or more orders resting on the Order Book is equal to or greater than the effective minimum quantity of the MQTY. The MQTY will trade with any number of orders at any size after its effective minimum quantity is satisfied each time the MQTY becomes Active. If executing against multiple eligible Resting Orders of inferior size (i.e. that would not individually satisfy the MQTY), the Resting Orders are filled during one book processing action such that the aggregate execution size will always satisfy the effective minimum quantity of the MQTY.

While a MQTY marked Composite is resting on the Order Book (a Resting Order), the MQTY executes against an Active Order provided the Active Order’s remaining shares are equal to or greater than the effective minimum quantity of the MQTY. In the event an Active Order does not satisfy the effective minimum quantity of the resting MQTY, the MQTY surrenders its precedence in the Order Book for the duration of that book processing cycle. When the remaining open shares falls below the minimum quantity size marked on the MQTY, the System will treat the order as having an effective minimum quantity equal to the remaining open shares.





### Minimum Execution Size with Cancel Remaining (“MinExec with Cancel Remaining”)

When a MQTY marked MinExec with Cancel Remaining is Active (an Active Order), the MQTY executes provided the Resting Order with the highest priority would trade shares equal to or greater than the minimum quantity size marked on the MQTY. Minimum execution size is enforced for each subsequent Resting Order in the Order Book against which the Active MQTY is checked. When the MQTY’s remaining open shares fall below the minimum quantity sized marked on the order, the System will cancel the order back to the Subscriber. Upon reaching a Resting Order that would trade with the MQTY, but does not satisfy the minimum quantity size marked on the MQTY, the MQTY will post to the Order Book or be canceled back to the Subscriber as per the order’s instructions.

While a MQTY marked MinExec with Cancel Remaining is resting on the Order Book (a Resting Order), the MQTY executes against an Active Order provided the Active Order’s remaining shares are equal to or greater than the minimum quantity size marked on the MQTY. In the event an Active Order does not satisfy the minimum quantity size marked on the MQTY, the resting MQTY surrenders its precedence in the Order Book for the duration of that book processing cycle. When the MQTY’s remaining open shares fall below the minimum quantity sized marked on the order, the System will cancel the order back to the Subscriber.

### Minimum Execution Size with All-or-None Remaining (“MinExec with AON Remaining”)

When a MQTY marked MinExec with AON Remaining is Active (an Active Order), the MQTY executes provided the Resting Order with the highest priority would trade shares equal to or greater than the minimum quantity size marked on the MQTY. Minimum execution size is enforced for each subsequent Resting Order in the Order Book against which the Active MQTY is checked. When the MQTY’s remaining open shares falls below the minimum quantity sized marked on the order, the System will treat the order as having a minimum quantity size equal to the remaining open shares. Upon reaching a Resting Order that would trade with the MQTY, which does not satisfy the effective minimum quantity of the MQTY, the MQTY will post to the Order Book or be canceled back to the Subscriber as per the order’s instructions.

While a MQTY marked MinExec with AON Remaining is resting on the Order Book (a Resting Order), the MQTY executes against an Active Order provided the Active Order’s remaining shares are equal to or greater than the minimum quantity size marked on the MQTY. In the event an Active Order does not satisfy the minimum quantity size marked on the MQTY, the resting MQTY surrenders its precedence in the Order Book for the duration of that book processing cycle. When the MQTY’s remaining open shares falls below the minimum quantity sized marked on the order, the System will treat the order as having a minimum quantity size equal to the remaining open shares.

## Routing Parameters

### *IEX Only (also known as “Standard” or “Non-routable”)*

IEX Only orders are limit or market orders that are to be executed, booked, or canceled on the IEX ATS without routing away to another external destination.

### *Routable*

For orders marked routable (five options listed below), the specific order, proportion, and methodology by which IEX routes orders to external destinations is determined by the IEX System Routing Table, a proprietary process subject to change at IEX’s sole discretion. IEX offers Subscribers the following basic routing options:



### *Router Basic* (available for all symbols on Friday, July 22)

“Router Basic” is a routing option under which an order is sent to destinations on the System routing table. If shares remain unexecuted after routing, they are posted on the Order Book or canceled, as per User instruction. Once posted on the Order Book, the unexecuted portion of such an order is eligible for the re-sweep behavior described below, market conditions permitting.

### *Router* (available for all symbols on Friday, July 22)

“Router” is a routing option under which an order is sent to the Order Book to check for available shares and then any remainder is sent to destinations on the System routing table. If shares remain unexecuted after routing, they are posted on the Order Book or canceled, as per User instruction. Once posted on the Order Book, the unexecuted portion of such an order is eligible for the re-sweep behavior described below, market conditions permitting.

### *Re-sweep*

Re-Sweep is a feature available to the routing options described above that allows for a resting order to route to Protected Quotations when the resting order’s limit price has been locked or crossed by the Protected NBBO, IEX rules permitting. When an order is marked with a TIF of IOC, the order will not have an opportunity to re-sweep, i.e. there is no opportunity for a “re-sweep” because orders marked with a TIF of IOC do not rest on the Order Book.

#### **Re-sweep when Order’s Limit is Locked by Protected NBBO**

If a resting order eligible for re-sweep has its booked limit price locked by the Protected NBO (for buy orders) or Protected NBB (for sell orders) for a minimum amount of time between 750 milliseconds and one (1) second, the System will route to the Protected Quotations at the locking NBO or NBB their full displayed size (or the remaining unexecuted shares on the order, if smaller). In the case that such resting order is a reserve order, the System will decrement first from the non-displayed portion, and then from the displayed portion. Any shares unexecuted will be returned to the Order Book, either incrementing the resting order, or re-posting the order to the Order Book, receiving a new timestamp. This cycle may be repeated, the order being re-routed to away trading centers multiple times, until the order is fully executed or canceled, subject to the limit price of the order.

#### **Re-sweep when Order’s Limit is Crossed by Protected NBBO**

If a resting order eligible for re-sweep has its booked limit price crossed by the Protected NBO (for buy orders) or Protected NBB (for sell orders), i.e. the Protected NBO becomes lower than the limit price of a buy order, or the Protected NBB becomes higher than the limit price of a sell order, for a minimum amount of time between 750 milliseconds and one (1) second, the System will route the entire order to away trading centers. Any shares unexecuted will be re-posted to the Order Book, receiving a new timestamp. This cycle may be repeated, the order being re-routed to away trading centers multiple times, until the order is fully executed or canceled, subject to the limit price of the order.

## Order Execution and Routing

For any execution to occur on the ATS during the Regular Market Session, the applicable order price must be equal to or better than the Protected NBBO, unless the order is marked ISO or unless the execution falls within another exception set forth in Rule 611(b) of Regulation NMS. For any execution to occur on the ATS during the Pre-Market Session or the Post-Market Session, the price must be equal to or better than the highest Protected Bid or lowest Protected Offer, unless the order is marked ISO or a Protected Bid is crossing a Protected Offer.



Unless otherwise specified by Subscriber order instructions, incoming orders will initially check for execution matches against the Order Book, and any unexecuted shares will be canceled, posted on the Order Book, routed as IOC orders to one (1) or more away external destinations, or routed as displayed DAY orders to one (1) or more away external destinations. The process of resting against the Order Book and/or routing to away external destinations may be repeated, consistent with Subscriber order instructions and prevailing market conditions. IEX reserves the right to reject or cancel an order based on regulatory, risk, or credit considerations without prior notice to Subscribers.

## Order Execution

The ATS operate a fully automated electronic book (“Order Book”) for orders to buy or sell securities (“orders”) with a continuous, automated matching function.

The ATS conducts an Opening Process for the Regular Market Session.

Opening Process for the Regular Market Session:

- Open orders resting on the Order Book at the conclusion of the Pre-Market Session will persist on the Order Book at the commencement of the Regular Market Session and retain their relative price and time priority.
- Orders not eligible for trading prior to the commencement of the Regular Market Session that are received during the Pre-Market Session are queued in the time sequence of their receipt by the System.
  - Orders queued during the Pre-Market Session are processed as new incoming orders at the commencement of the Regular Market Session in the relative time priority of their original receipt.
  - Orders queued during the Pre-Market Session are entered onto the Order Book at an inferior time priority to orders that were resting on the Order Book at the conclusion of the Pre-Market Session.

The ATS conducts an Opening Process for the Post-Market Session.

Opening Process for the Post-Market Session:

- If parameters permit participation in the Post-Market Session, open orders resting on the Order Book at the conclusion of the Regular Market Session will persist on the Order Book at the commencement of the Post-Market Session and retain their relative price and time priority.

The Opening Process occurs as a single atomic action. While the System is performing the Opening Process for a security, no incoming orders, amendments, or cancels are processed for the security. All executions during the Opening Process are constrained by the NBBO.

Executions will occur when an order to buy and an order to sell match on the Order Book and may occur when an order routed to an external destination is matched by that venue. The System will process incoming orders to the System in the sequence in which they are received, including unexecuted orders or portions of orders returning from orders routed to external destinations. While orders or portions of orders are routed to external destinations, those orders or portions of orders are not part of the System incoming order process queue, allowing the process of subsequent sequential orders to take priority.

In executing orders submitted to the Order Book, the System will not distinguish between orders submitted by Subscribers for their own accounts and orders submitted by Subscribers for their customers.



All Subscribers will submit orders to the System from remote locations and have equal access to orders residing on the Order Book. Similarly, because orders on the ATS will be executed automatically, no Subscriber will have the ability to control the timing of execution other than to change or cancel an order prior to execution.

An order to buy submitted to the Order Book will be automatically executed by the System to the extent that it is priced at an amount that equals or exceeds any order to sell for the same security submitted to the Order Book, and that any specific conditions elected on such order by the submitting Subscriber are satisfied. Such order to buy shall be executed at the price of the lowest-priced order to sell having priority on the Order Book.

An order to sell submitted to the Order Book will be automatically executed by the System to the extent that it is priced at an amount that equals or is less than any order to buy for the same security submitted to the Order Book, and that any specific conditions elected on such order by the submitting Subscriber are satisfied. Such order to sell shall be executed at the price of the highest-priced order to buy having priority on the Order Book.

In the event that less than the full size of a resting order is executed, the unexecuted size of the order will continue to reside on the Order Book, consistent with the Subscriber's instructions. Such partially executed orders retain priority at their price level, unless the order was displayed and has been decremented less than one (1) Round Lot.

#### *Order Execution Recheck ("Book Recheck") (patent pending)*

Upon a change to the Order Book, the NBBO, or as part of the processing of inbound messages, the System may check orders on one or both sides of its market against the contra side of the Order Book to determine if new executions can occur as a consequence of the change in the Order Book or prevailing market conditions. Orders resting on the Order Book at the IEX determined Midpoint or Discretionary Peg Orders with the ability to exercise price discretion, may be eligible to trade against orders in the updated Order Book, which were ineligible, or did not satisfy the order's conditions, when they were originally booked.

Resting Non-Displayed and reserve portions of Reserve Orders are eligible to execute a Book Recheck. Book Recheck is processed according to the booked Price – Display - Time priority of each resting order. Orders participating in a Book Recheck on the Order Book will not trade through Protected Quotations, or resting orders on the contra side of the Order Book. Displayed Orders are not invited to execute a Book Recheck, but may trade with a non-displayed order executing a Book Recheck.

## Order Routing

If IEX does not have eligible shares priced equal to or better than the NBBO, or all such eligible shares have been exhausted and unexecuted shares remain, the System may further process incoming orders based on routing eligibility. For orders marked eligible for routing and are marketable against the NBBO, the System will route to away external destinations displaying superior priced Protected Quotations in a manner consistent with Subscriber order instructions and the System Routing Table. The IEX SOR is connected to all Regulation NMS protected venues.

The term "System Routing Table" refers to the proprietary process for determining the specific trading venues to which the System routes orders, and the order in which it routes them, and in what proportion shares are assigned to each routed order. IEX reserves the right to maintain a different System Routing Table for different routing options and to modify the System Routing Table at any time without notice to Subscribers.

For orders marked ineligible for routing ("IEX Only" orders), and for unexecuted portions of routed orders which are no longer marketable, the System will cancel or rest the order on the Order Book, consistent with Subscriber order instructions, and subject to System Price Sliding, as applicable.



Consistent with Subscriber order instructions and prevailing market conditions, incoming orders or orders resting on the Order Book, in whole or in part, may be routed to away external destinations for potential execution and/or resting on an external destination.

## Special Handling

### Locked and Crossed Markets

IEX maintains policies and procedures reasonably designed to prevent the locking or crossing of Protected Quotations as required by Regulation NMS. In the event that the NBBO becomes locked or crossed, the ATS will observe the following practices:

#### *Price Sliding*

##### **Locked Markets**

Orders are price slid by the System to be no more aggressive than the locking price. Additionally, posting or booked Primary and Discretionary Peg Orders are price slid to whichever level is further from the locked price: either (a) the prior non-locked near-side quote or (b) one MPV away from the locking price.

##### **Crossed Markets**

Orders are price slid by the System to be no more aggressive than the crossing price; for BUY orders the national OFFER, and for SELL orders the national BID. Additionally, posting or booked Primary and Discretionary Peg Orders are price slid to whichever level is less aggressive: either (a) the prior non-crossed (and non-locked) near-side quote or (b) one MPV away from the crossed quote.

#### *Regulation SHO in Locked or Crossed Markets*

In the event of the NBBO becoming locked or crossed, the IEX Regulation SHO Price Sliding process will function as in a normal market. Subject short sales are prevented from executing or posting at or below the NBB.

#### *Midpoint Pricing*

In the event of the NBBO being locked, IEX will determine the Midpoint Price to be equal to the locked price of the NBBO for both orders resting on the Order Book and incoming orders for which the Midpoint Price must be calculated (i.e. Midpoint Peg Orders).

In the event of the NBBO being crossed, IEX will not be able to determine a price equal to the Midpoint Price. Orders resting on the Order Book at the time a market becomes crossed will be price slid to the crossing price; for BUY orders the national OFFER, and for SELL orders the national BID. Incoming orders will be allowed to initially check against the book for matches, limited by the IEX Crossed Market Order Collar. Orders posted to the Order Book will be slid to the crossing price; for BUY orders the national OFFER, for SELL orders the national BID.

#### *Discretionary Peg Order Submission*

Discretionary Peg Orders submitted by Subscribers when the NBBO is locked or crossed initially check the Order Book's Midpoint Price (refer to the above section on Midpoint Pricing in locked and crossed markets) for matches before posting as described in the Price Sliding section above.

#### *Book Recheck*

In the event of the NBBO being crossed IEX will not perform Book Recheck processes.



## One-Sided Markets

One-Sided Markets are markets which lack either a Protected Bid or a Protected Offer. How IEX handles non-displayed interest during One-Sided Markets:

- Non-displayed interest entering the IEX System will first test for marketable interest resting on the order book, but will be unavailable to trade once it posts on the order book.
- Resting non-displayed interest on IEX is unavailable to trade.
- When a two-sided market returns, non-displayed orders become available at their relative time priority.

How IEX handles displayable interest during One-Sided Markets:

- When IEX receives displayable interest on the same side of the market WITH a Protected Bid or Protected Offer:
  - Displayed interest marked IEX Only will post and display at the most aggressive allowable price.
- When IEX receives displayable interest on the side of the market WITHOUT a best Protected quote:
  - Displayed interest marked IEX Only will be eligible to trade with interest that is present on the IEX ATS and will be subject to IEX's Midpoint Price Constraint.
    - Midpoint Price Constraint: if the limit price of a displayed BUY (SELL) order is more aggressive than the best Protected Offer (Protected Bid), then IEX will post the order at one Minimum Price Variant less aggressive than the best Protected Offer (Protected Bid).
  - For routable orders, IEX will attempt to take displayed Protected Quotations.

## Zero Markets

In the event that neither a best Protected Bid nor Protected Offer exists, non-displayed interest is unavailable to trade. Displayable interest will post and display at the most aggressive allowable price. Non-displayed orders are not eligible to route when neither a best Protected Bid nor Protected Offer exists. When a two-sided market returns, non-displayed orders become available at their relative time priority.

## Sub-Dollar Pricing

### *Midpoint Pricing*

In the event that the NBB is less than \$1.00 the ATS applies the following pricing convention to both the Midpoint Price Constraint and Midpoint Peg Orders. For Midpoint Prices which may be expressed within four decimal places of the dollar, the ATS uses the Midpoint Price. For Midpoint Prices which would require a fifth decimal place beyond the dollar, the ATS will use the nearest, passive, fourth decimal price.

## Order Collars and Constraints

### *Crossed Market Collar*

In the event that a Protected Bid is crossing a Protected Offer, unless an order is marked ISO, the System does not execute any portion of a bid at a price more than the greater of five cents (\$0.05) or one half of a percent (0.5%) higher than the lowest Protected Offer, or any portion of an offer that would execute at a price more than the greater of five cents (\$0.05) or one half of a percent (0.5%) lower than the highest Protected Bid.

To the extent an incoming order is eligible to execute against an order resting on the Order Book because a Protected Bid is crossing a Protected Offer, but such incoming order is eligible for routing and there is a Protected Bid or Protected Offer available at another external destination that is better priced than the bid or offer against which the order would execute on



the System, the System will first seek to route the order to such better priced quotation. An order will be canceled back to the Subscriber if, based on market conditions, Subscriber order instructions, and prevailing market conditions, such order is not executable, cannot be routed to another external destination and cannot be posted to the Order Book.

*Order Collar*

The IEX Order Collar prevents any order on the Order Book, including those marked ISO by the submitting Subscriber, from executing at a prices outside the Order Collar price range. The Order Collar price range is defined as the range of prices from the Order Collar Price (defined below) for buy orders to the Order Collar price for sell orders for the security. Executions are permitted at prices within the Order Collar price range, inclusive of the boundaries. Any portion of a market order that would execute at a price beyond the Order Collar is canceled. Any remainder of a limit order is posted to the Order Book or canceled as per Subscriber instructions. Both displayed and non-displayed orders may post on the Order Book at the Order Collar, but never more aggressive. Such orders may be re-priced, depending on changing market conditions and the order’s limit price.

IEX calculates the Order Collar for a security by applying the appropriate Numerical Guideline, for the market session and reference price (see table below), to the latest Order Collar Reference Price. The result is added to the latest Order Collar Reference Price to determine the Order Collar Price for buy orders, while the result is subtracted from the latest Order Collar Reference Price to determine the Order Collar Price for sell orders. The appropriate Order Collar Price is assigned to all orders upon entry and enforced throughout the life of an order; the Order Collar Price is updated each time the Order Collar Reference Price is updated by the System.

The Order Collar Reference Price is equal to the most current of the following:

- Consolidated last sale price disseminated during the Regular Market Session on trade date.
- Last trade price disseminated outside of the Regular Market Session (Form T) on trade date which other than for the Form T designation would have been considered a valid last sale price.
- Prior day’s Official Closing Price from the listing exchange, adjusted to account for corporate actions, news events, etc.

In the absence of a valid Order Collar Reference Price, the ATS will either prevent trading in the security (by rejecting orders for the security) or suspend the Order Collar function, whichever is deemed to be in the best interest of maintaining a fair and orderly market in the impacted security.

The Numerical Guideline used in the Order Collar Price calculation is based on the table below:

<b>Order Collar Reference Price</b>	<b>Regular Market Session Numerical Guidelines</b>	<b>Pre-Market and Post-Market Sessions Numerical Guidelines</b>
Greater than \$0.00 up to and including \$25.00	10%	20%
Greater than \$25.00 up to and including \$50.00	5%	10%
Greater than \$50.00	3%	6%

The above percentages are based upon the numerical guidelines for clearly erroneous executions under the IEX Clearly Erroneous Transactions Policy.

*Router Constraint*

The IEX Router Constraint prevents any order from routing to prices outside the Router Constraint price range. The Router Constraint price range is defined as the range of prices from the Midpoint Price to the Router Constraint Price (defined below). Orders are permitted to route to prices at or within the Router Constraint price range. Any portion of an order that



would have executed at a price beyond the Router Constraint is canceled back to the Subscriber. While resting on the Order Book, routable orders are subject to the Order Collar.

IEX calculates the Router Constraint Price for a routable order by applying the appropriate Numerical Guideline, for the market session and reference price (see table below), to the latest Router Constraint Reference Price. The result is added to the latest Router Constraint Reference Price to determine the Router Constraint Price for buy orders, while the result is subtracted from the latest Router Constraint Reference Price to determine the Router Constraint Price for sell orders. The Router Constraint Price is calculated at the start of a routing action and remains unchanged until the order posts on the Order Book or is canceled as per Subscriber’s instructions. Any time a routable order re-sweeps the market, a new Router Constraint Price is calculated and assigned to the order.

Once a routable order executes against the full displayed size of all Protected Quotations at each price level for the security at away markets from the NBBO to the Router Constraint Price, if the order’s limit price is superior to the Router Constraint Price, the order will continue to route to external destinations at the Router Constraint Price so long as the router receives a full fill from at least one of such routed orders. Once all liquidity is exhausted at those external destinations, the order will be canceled or posted to the IEX Book, per TIF instructions.

The Router Constraint Reference Price is equal to the most current of the following:

- Consolidated last sale price disseminated during the Regular Market Session on trade date.
- Last trade price disseminated outside of the Regular Market Session (Form T) on trade date which other than for the Form T designation would have been considered a valid last sale price.
- Prior day’s Official Closing Price from the listing exchange, adjusted to account for corporate actions, news events, etc.

In the absence of a valid Router Constraint Reference Price, the ATS will reject any routable orders for the security.

The Numerical Guideline used in the Router Constraint Price calculation is based on the table below:

Router Constraint Reference Price	Regular Market Session Numerical Guidelines	Pre-Market and Post-Market Sessions Numerical Guidelines
Greater than \$0.00 up to and including \$25.00	10%	20%
Greater than \$25.00 up to and including \$50.00	5%	10%
Greater than \$50.00	3%	6%

The above percentages are based upon the numerical guidelines for clearly erroneous executions under the IEX Clearly Erroneous Transactions Policy.

### Trading Halts (Regulatory and non-regulatory)

IEX maintains policies and procedures reasonably designed to adhere to trading halts as communicated through the relevant Securities Information Processor (“SIP”) by the appropriate Primary Listing Market.

When a security is halted, the System shall not match nor route out open orders for that security. Existing, open orders shall be persisted by the System until the orders expire or are canceled.

Open orders are eligible to be canceled at any time during a trading halt.





## Market Conduct

Subscribers are expected, in the conduct of their business and participation on the ATS, to observe high standards of commercial honor and just and equitable principles of trade. Participants must adhere to all applicable laws, rules and regulations and, among other things, must not:

- Engage in any activity that purports to quote the bid price or asked price, or any non-quoted interest, for any security, unless such Participant believes that such quotation or interest represents a bona fide bid for, offer for, or order for such security.
- Enter into transactions on the ATS, or enter orders, that employ fictitious devices or any other form of deception or contrivance.
- Engage in any type of behavior that could adversely affect fair and orderly trading on the ATS, including degradations of its technology platform.
- Commit any act or engage in any behavior which causes or contributes to a breach of the System and/or related guidelines, which are collectively found in this Subscriber Manual, the IEX Subscriber Agreement, the IEX Connectivity Services Agreement, and the IEX FIX Specification, or applicable laws, rules and regulations, by another Participant, or IEX.

IEX may monitor Participant usage of the System in order to identify breaches of the System Guidelines, or any applicable laws, rules and regulations, disorderly or disruptive trading activities, or conduct which may involve market abuse.

IEX may report such breaches as it deems appropriate to the appropriate regulatory agencies or self-regulatory organizations, without delay, and provide such regulatory bodies full cooperation in investigating and prosecuting such behavior as warranted.

## Complaints and Disputes

All complaints and disputes should be directed to the Market Operations Desk at 646.343.2300 or [marketops@iextrading.com](mailto:marketops@iextrading.com).

## Clearly Erroneous Transactions Policy

Please refer to the IEX Clearly Erroneous Transactions Policy at [https://iextrading.com/docs/IEX Clearly Erroneous Policy.pdf](https://iextrading.com/docs/IEX%20Clearly%20Erroneous%20Policy.pdf).

## Business Continuity Plan Disclosure Statement

At least three (3) months prior to the scheduled functional and performance testing of IEX's business continuity and disaster recovery plans, IEX will publish the criteria approved by the SCI Governance Committee to be used to determine which Subscribers will be required to participate in such testing (IEX's Designation of Subscribers Required to Participate in Functional and Performance Testing of IEX Business Continuity and Disaster Recovery Plans") and notify those Subscribers that are required to participate based on such criteria.



Subscribers designated pursuant to IEX’s Designation of Subscribers Required to Participate in Functional and Performance Testing of IEX Business Continuity and Disaster Recovery Plans must participate in scheduled functional and performance testing of IEX’s testing of its business continuity and disaster recovery plans, which will occur not less than once every 12 months. All Subscribers are permitted to connect to IEX’s backup systems.

Please refer to the IEX BCP Disclosure Statement at <https://www.iextrading.com/docs/IEXS BCP Disclosure Statement.pdf>.

## Contact Us

Website	<a href="http://www.iextrading.com">www.iextrading.com</a>
Main Telephone Number	646.343.2000
Sales	646.343.2100 or <a href="mailto:subscriber@iextrading.com">subscriber@iextrading.com</a>
Market Operations	646.343.2300 or <a href="mailto:marketops@iextrading.com">marketops@iextrading.com</a>
System Reliability Engineering	646.343.2200 or <a href="mailto:sre@iextrading.com">sre@iextrading.com</a>
Network Operations	646.343.2245 or <a href="mailto:netops@iextrading.com">netops@iextrading.com</a>
Pricing	<a href="http://iextrading.com/services/">http://iextrading.com/services/</a>
Billing	646.343.2035 or <a href="mailto:accounting@iextrading.com">accounting@iextrading.com</a>
Mailing Address	IEX Services LLC 4 World Trade Center 44th Floor New York, NY 10007

## Subscriber Access, New Jersey POP (Point of Presence)

IEX Group, Inc.  
C/O Equinix  
800 Secaucus Road  
Secaucus, NJ 07094

## Subscriber Access, Illinois

IEX Group, Inc.  
C/O Equinix  
350 E Cermak Road  
Chicago, IL 60616