MIAX Sapphire Options Exchange

User Manual

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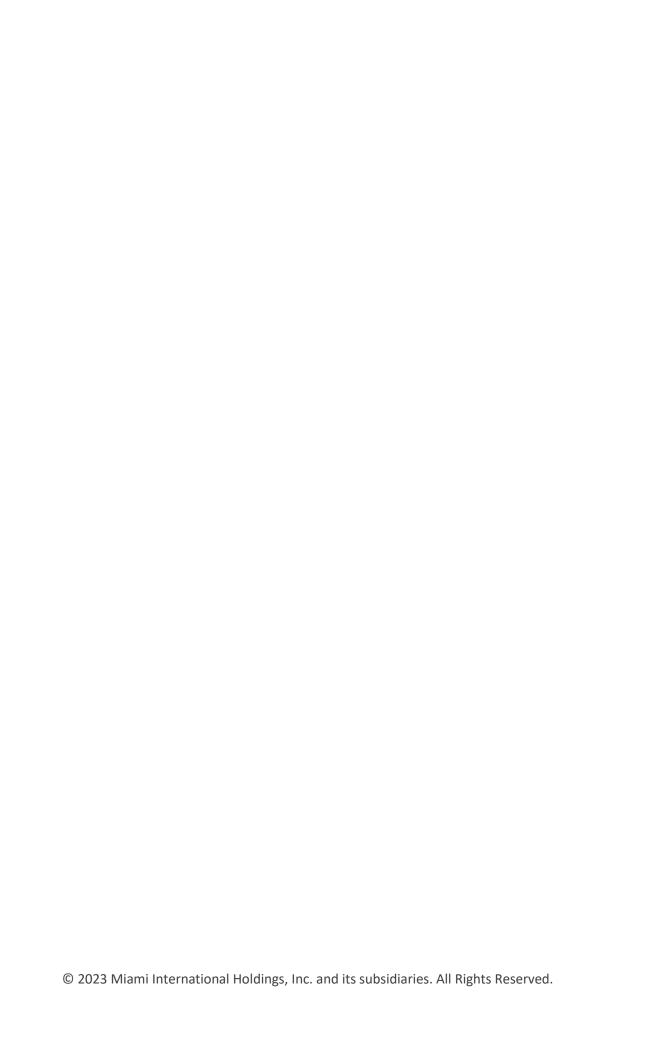Version: 1.0.0

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1. Introduction

MIAX Sapphire (MIAX Sapphire or the Exchange) created this User Manual to assist Members and users of its Exchange in understanding the operation of the Exchange. The User Manual discusses, and in some cases, summarizes various MIAX Sapphire Rules. MIAX Sapphire's complete and official Rulebook is available at: MIAX Global Options Exchange Rulebooks. In the event of a conflict between the User Manual and the Rules set forth in the official Rulebook, the Rulebook shall prevail.

MIAX Sapphire operates a fully automated electronic options trading platform for the purpose of buying and selling securities with a continuous, automated matching function. Liquidity is derived from orders to buy and sell. Orders are submitted to the Exchange electronically by Members from remote locations. MIAX Sapphire does maintain a physical trading floor. There are two categories of electronic Members on MIAX Sapphire – Market Makers, and all other Members which are known as Electronic Exchange Members (EEMs). Additionally, there are two categories of floor Members on MIAX Sapphire – Floor Market Makers and Floor Brokers.

Access to the Exchange is maintained by way of Trading Permits issued to the Members. Trading Permits are not transferable except in the event of a change in control of a Member.

Members are subject to fees for executions and services on the Exchange as set forth in the Exchange's Fee Schedule. A link to a copy of the complete MIAX Sapphire Fee Schedule is available on the Exchange's website at: MIAX Global Options Exchange Fees.

2. MIAX Sapphire Options Membership

2.01 How to become a Member of MIAX Sapphire

Holders of MIAX Exchange Trading Permits. A holder of a MIAX, MIAX Pearl, or MIAX Emerald Trading Permit in good standing is eligible to receive one MIAX Sapphire Trading Permit in the same membership category. A holder of a MIAX, MIAX Pearl, or MIAX Emerald Trading Permit who wishes to apply to the Exchange is not required to complete and submit an Exchange application. Instead, only Exchange forms concerning election to trade on the Exchange, submitting to Exchange jurisdiction, and operational matters need to be completed and tendered.

Firms that are not holders of a MIAX Exchange Trading Permits. A prospective Member firm must be registered as a broker-dealer, must be a member of at least one other registered options exchange or FINRA, must be able to clear option trades or must clear through a clearing firm and must meet certain additional criteria described by the Exchange and set forth in the Exchange's Rules.

Further information on membership at MIAX Sapphire, is available on the Exchange's website: MIAX Global Options Exchange Membership.

3. Types of Membership

3.01 Market Makers

To register as a Market Maker, a Member must file an application in writing on such forms as the Exchange may prescribe. The Exchange reviews applications and considers an applicant's market making ability and such other factors as the Exchange deems appropriate in determining whether to approve an applicant's registration as a Market Maker.

Each registered Market Maker must appoint a qualified person to act as a "Market Maker Authorized Trader" or "MMAT". An MMAT is an authorized trader who performs market making activities and fulfills market making responsibilities on behalf of the Market Maker.

Each MMAT must self-assign appointments on a full class or series-by-series basis. Series assignments may be entered using the MEO interface, each day before 09:00 a.m. ET, or by an Exchange approved electronic interface, which requires series registration to be submitted prior to 6:00 p.m. ET of the business day immediately preceding the next trading day.

3.02 Electronic Exchange Members (EEM)

An EEM is an Exchange Member representing as agent Public Customer Orders or Non- Customer Orders on the Exchange and those non-Market Maker Members conducting proprietary trading.

3.03 Floor Participant

A Floor Participant means a Floor Broker or a Floor Market Maker.

3.04 Floor Market Maker

No Participant shall act as a Floor Market Maker in any option unless such Participant is already registered as a Market Maker by the Exchange pursuant to MIAX Sapphire Rule 600 and such registration may be revoked or suspended at any time by the Exchange.

3.05 Floor Broker

A Floor Broker must be registered as a Floor Participant prior to registering a Floor Broker. A Floor Broker is an individual who is registered with the Exchange for the purpose, while on the Trading Floor, of accepting and handling options orders.

4. Access by Non-Members

Non-Members may access the Exchange pursuant to Rules governing "sponsored access" to the Exchange. The Exchange permits access by entities (Sponsored Users) whose access is authorized in advance by entering into an arrangement with a Member (Sponsoring Member) in accordance with Exchange Rules.

Sponsored Users must agree to comply with all applicable Rules of the Exchange governing the entry, execution, reporting, clearing and settling of orders in securities eligible for trading on the Exchange. Further information about Sponsored Access can be found in MIAX Sapphire Rules, Chapter II.

5. How MIAX Sapphire Works

5.01 Architecture

Market Makers and EEMs can send orders to the Exchange's System through the MIAX Sapphire Express Order Interface (MEO) or the MIAX Sapphire FIX Order Interface (FOI) gateway. The Exchange will provide an API for Floor Participants to query the Electronic Order Book. The Floor Query will return the current price and size of orders on the Electronic Order Book. The MIAX Sapphire Trading System is designed to be highly scalable, efficient, fast, reliable, robust and flexible.

The Exchange deploys multiple matching engines, each engine performing the trade match function for a defined set of option classes.

Market Makers may connect to the System via the MIAX Sapphire Express Order Interface (MEO) using a proprietary binary protocol for the transmission of orders and other messages to and from the Exchange. Several types of MEO ports are available:

MEO supports the following port types:

- **Full Service Port Bulk (FSPB)** – Supports all MEO input message types and bulk binary order entry.
- **Full Service Port Single (FSPS)** – Supports all MEO input message types and binary order entry on a single order by order basis.
- **Limited service port (LSP)** – Supports all MEO input message types, but has the following limitations:
  - LSPs do not support bulk order entry.
  - LSPs support the use of IOC or ISO orders only.
- **Priority Purge Port (PPP)**
  - Supports only MEO Mass Cancel messages.

All MEO output message types are supported on all of these port types (FSPB, FSPS and LSP).

Limitations on the number and combinations of ports exist. Refer to the MIAX Sapphire Fee Schedule for more details on available firm port configurations. Participants utilizing the binary MEO Interface are required to connect separately to each matching engine as the Exchange offers no routing capability via this interface.

Market Makers and EEMs may connect to the System via the MIAX Sapphire FIX Order Interface (FOI) gateway using the industry standard FIX protocol with MIAX Sapphire specific extensions for the transmission of orders and other messages to and from the Exchange. The MIAX Sapphire FOI validates incoming orders and forwards them to the appropriate matching engine. Executions and cancelation notifications are provided through these same interfaces.

The matching engines of the Exchange each handle a defined set of option classes, which may be reallocated on a periodic basis in order to ensure that system load is balanced across the MIAX Sapphire System. Each matching engine compares the price of all incoming orders with those orders already

resting on the MIAX Sapphire Book. The matching engine matches liquidity as available, calculates the MIAX Sapphire Best Bid and Best Offer (the SBBO), monitors the other markets' displayed prices and determines when, and if, a trade can occur. If a newly arrived order is marketable against the existing MIAX Sapphire Book, and the SBBO is equal to or better than the best consolidated quote, an immediate match is made and allocations are communicated back to the trade participants.

If another market is disseminating a price superior to MIAX Sapphire's displayed price, orders may be routed to the better priced market(s).

Orders may be managed within the MIAX Sapphire System so as not to lock the prices displayed on other markets. The System will not execute such orders at prices inferior to the current NBBO. If the limit price of an order being managed locks or crosses the opposite side NBBO and the SBBO is inferior to the NBBO, the System will display the order one minimum price variation away from the current opposite side NBBO, and book the order at a price that will lock the current opposite side NBBO. Should the NBBO price change to an inferior price level and the SBBO remain inferior to the NBBO, the order's book price will continuously re-price to lock the new NBBO and the managed order's displayed price will continuously re-price one minimum price variation away from the new NBBO.

5.02   Network Infrastructure

The MIAX Sapphire network was designed to complement the MIAX Sapphire Trading System and was built from the ground up to address the performance and security needs of a high speed trading platform. The MIAX Sapphire network infrastructure utilizes fully diverse and redundant 40Gbps backbones and 10/40Gbps switch technology for maximum throughput and minimal latency.

5.03   Data Center Services

MIAX Sapphire has partnered with Equinix, a world-class provider of data center services, to host the Trading System's data center infrastructure in its NY4 location.

Customers with very low latency demands can cross-connect to the MIAX Sapphire System from elsewhere within the Equinix facility. MIAX Sapphire cross-connects are latency equalized to ensure each participant's cross-connect is the same physical distance from the MIAX Sapphire System regardless of their location in the Equinix facility.

- **Notable Data Center Services**
  - SSAE16 compliant Data Centers
  - Redundant power feed sourced from district substations
  - Redundant power and cooling distribution paths within the facility
  - Concurrently maintainable (N+1 for greater resiliency)
  - On-site backup power generation
- **Enhanced Security Services**
  - State of the art security
  - Hand Scanners
  - Card Readers
  - Cameras
- **Additional Data Center Support**

- o Buildings designed to withstand fires, earthquakes, hurricanes and other environmental threats
- o Manned 24/7
- o A second Data Center is located in Chicago (CH4) for Disaster Recovery

5.04   Connectivity Choices

MIAX Sapphire offers truly diverse, redundant 1 Gigabit and 10 Gigabit ULL connectivity options in data center facilities and supports direct attachment of customer/provider network equipment or direct attached host systems. Users are strongly encouraged to establish dual connections to the primary facility in NY4 and connection to the disaster recovery system located in Chicago (CH4) to minimize the possibility of service disruption. Certain Members of MIAX Sapphire will have mandatory participation requirements in the Exchange's annual Disaster Recovery (DR) test and will therefore be required to establish a connection to the disaster recovery system located in Chicago (CH4). MIAX Sapphire supports the following connectivity options:

- **Cross-Connect**
  - o Users that are co-located in the Equinix NY4 data center may request an in-house cross-connect from the User's Point of Entry (POE) to MIAX Sapphire
- **Point-to-point**
  - o Users may connect point-to-point using leased lines or other network methods (e.g. Ethernet, etc.). (Users are responsible for providing colocation space for independently owned equipment.)
- **Metro Ethernet/Dark Fiber**
  - o Users may connect via Metro Ethernet or a dark fiber provider

For additional details about connecting to the MIAX Express Network Interconnect (MENI), please see the Connectivity Guide on the Exchange's website.

5.05   Trading System Features

The MIAX Sapphire Trading System was developed specifically for the unique functional and performance demands of derivatives trading. The System provides the proper protections, low latency and high throughput that is essential to the success of the trading community. The MIAX Sapphire System provides extreme performance and scalability with best in class customer interface features and performance over the following interfaces:

- **MIAX Sapphire FIX Order Interface (FOI) gateway for orders**
  - o Each FOI is capable of processing more than 7,700 order messages per second
- **MIAX Sapphire FIX Drop (FXD)**
  - o For clearing trade drops normally sent over FIX
  - o Available only to submitting EEMs
  - o Echoes trade fills, trade adjustments, trade corrections and trade cancellations from orders submitted via FIX
  - o Does not include other FIX information such as order cancellations or order adjustments
  - o Multiple MPIDs can be configured to use a single FIX Drop Interface.

- **MIAX Sapphire Express Order Interface (MEO)**
  - o Offers direct connections to the matching engine for the high-speed mass messaging of orders in binary format
  - o Each full service MEO Interface is capable of processing more than 200,000 orders per second
- **MIAX Sapphire Top of Market (ToM)**
  - o Provides low latency access to MIAX Sapphire market data
  - o The MIAX Sapphire ToM data feed service produces market data across 6 multicast channels. Each channel is capable of transmitting more than 1,200,000 messages per second during peak periods
- **MIAX Sapphire Clearing Trade Drop (CTD)**
  - o is a low-latency, real-time feed providing clearing trade information to the parties of a trade, Clearing Firms and/or other entitled designated recipients. Recipients connect to the CTD using a proprietary protocol and one or more CTD connections for each Exchange matching engine
  - o The MIAX Sapphire CTD interface is capable of processing more than 20,000 clearing trade messages per second
- **MIAX Sapphire Liquidity Feed (SLF)**
  - o Provides information about orders in the MIAX Sapphire markets over a multicast feed

The MIAX Sapphire System uses a next-generation highly-automated Quality Assurance platform that runs a full battery of tests against the System to ensure a high level of reliability and unprecedented confidence in System updates.

- State-of-the-art monitoring and systems security
- A software and hardware architecture that results in minimizing the demands on power, space and cooling while allowing for rapid scalability, standard setting resiliency and superior fault isolation

Further information on the Top of Market feed and the MIAX Sapphire Liquidity Feed is listed below. For additional details about connecting to the MIAX Sapphire trading platform, please see the Interface Connectivity Specifications on the MIAX Sapphire website: MIAX Global Options Exchange Interface Specifications.

5.06   Top of Market (ToM)

Top of Book and Trade Data is made available over the MIAX Sapphire Top of Market data feed (ToM). ToM is available to all MIAX Sapphire participants. ToM specific information:

- MIAX Sapphire Best Bid and Offer information with sizes
- Indications of Public and Priority Customer at the SBBO
  - o When present, the size of the Priority Customer interest is also indicated
- Last sale information
- Post-Halt Notifications

ToM also includes information about other real-time Exchange System functions. Recipients connect to ToM using a proprietary protocol and for the purpose of redundancy may subscribe to two identical connections (ToM "A" and ToM "B") for each Exchange matching engine.

5.07   Complex Top of Market (cToM)

Complex Strategy Top of Book and Trade Data is made available over the Complex Top of Market data feed (cToM). cToM is available to all MIAX Sapphire participants who choose to subscribe. cToM specific information:

- Complex Strategy Definition Notification
- Complex Strategy Book Best Bid and Offer information with sizes:
  - Indication of Priority Customer size at the displayed Best Price on the Strategy Book
  - Indication the Best price on the Strategy Book is subject to the Complex Liquidity Exposure Process (cLEP)
- Complex Strategy Last sale information
- Underlying Trading Status Notification

cToM also includes information about other real-time Exchange System functions. Recipients connect to cToM using a proprietary protocol and for the purpose of redundancy may subscribe to two identical connections (cToM "A" and cToM "B") for each Exchange matching engine.

Complex Order functionality may be enabled or disabled via Regulatory Circular.

5.08   MIAX Sapphire Liquidity Feed (SLF)

The MIAX Sapphire Liquidity Feed provides information about orders on the MIAX Sapphire order book over a multicast feed.

The following updates are transmitted over SLF when an order is received or when an order state changes.

- **Published Order information**
  - Time stamp
  - Action
  - Product ID
  - Order ID
  - Order Side
  - Order Type
  - Order Price
  - Original Order Size
  - Open Order Size
  - Time in Force
  - Origin
  - Open or Close
  - Route Instruction
- **For Complex Orders the following information will also be included**
  - Complex Strategy Definition Notification
  - Complex Order Notices
- **The following will not be disseminated**
  - Order States
    - Pending Replace

- Rejected
  - o Order with time in Force of
    - IOC
  - o Paired Orders:
    - Qualified Floor Order (QFO) Cross
    - Complex Qualified Floor Order Cross
    - Customer Cross
    - Complex Customer Cross
    - Qualified Contingent Cross
    - Complex Qualified Contingent Cross
  - o Child orders related to routing are not published

5.09   MIAX Sapphire Information and Performance Reports

MIAX Sapphire Information and Performance Reports provide Member Firms with details of their trading and activities on the Exchange. Reports include key information about transaction fees, marketing fees, the NBBO and SBBO at the time of transaction, as well as volume, clearing and risk information. This information is intended to assist firms in monitoring and evaluating their trading activity on MIAX Sapphire.

Further information on the availability of MIAX Sapphire Information and Performance Reports can be obtained by contacting MIAX Sapphire Trading Operations at: TradingOperations@MIAXGlobal.com.

5.10   Classes Listed on MIAX Sapphire

A complete list of all Option Classes traded on MIAX Sapphire is maintained in the Listings section of the Exchange's website at this address: MIAX Global Options Exchange Listings.

The All Classes Listed on MIAX Sapphire file is updated daily and is available in CSV format. The file contains detailed information on each Class including:

- Underlying Symbol
- Underlying Security Name
- Option Symbol
- Minimum Price Variation
- Closing Time
- Information on Expiration Programs
- Information on Price Programs
- An indication if the Class is Closing Only
- MIAX Sapphire Cloud Number (equivalent to Matching Engine Number)

5.11   Options Listed on MIAX Sapphire

A complete list of all Options traded on MIAX Sapphire is maintained in the Listings section of the Exchange's website at this address: MIAX Global Options Exchange Listings.

The All Options Listed on MIAX Sapphire file is updated daily and is available in CSV format. The file contains detailed information on each listed Option including:

- Underlying Symbol
- Option Symbol
- Expiration Date
- Strike Price
- Deliverable
- An indication if the Option is Closing Only

6. Order Information

6.01 Order Types

The following are some of the order types described in the MIAX Sapphire Rules that, except as may be described below, are available for use on the Exchange as of the date of this Manual:

- **Market**. An order to buy or sell a stated number of options contracts at the best price available at the time of execution
- **Limit**. An order to buy or sell a stated number of options contracts at or better than a specified price
- **Immediate-or-Cancel (IOC)**. An order to be executed in whole or part upon receipt with any unexecuted portion cancelled. An Immediate-or-Cancel order is not valid during the opening rotation process described in MIAX Sapphire Rule 503
- **Intermarket Sweep Order (ISO)**. A limit order designated by the submitting Member as an ISO trades without regard to MIAX Sapphire price protections or protected quotations on other markets
- **Do Not Route (DNR)**. An order that will never be routed outside of MIAX Sapphire regardless of the prices displayed by away markets. A DNR order will never execute at a price inferior to the NBBO and when necessary, its display price will be managed so as not to lock or cross the NBBO
- **Day Limit**. An order to buy or sell which, if not executed, expires at the end of trading in the security on the day on which it was entered
- **Cancel-Replacement Order**. A Cancel-replacement order is a single message for the immediate cancellation of a previously received order and the replacement of that order with a new order with new terms and conditions
- **Marketable Limit Order**. A marketable limit order is a limit order to buy (sell) at or above (below) the best offer (bid) on the Exchange
- **Qualified Contingent Cross Order (QCC).** A QCC Order is an order that is comprised of an originating order to buy or sell at least 1,000 contracts coupled with a contra side order for the same number of contracts and also paired with an NMS stock component. QCC Orders are not valid during the opening rotation process described in MIAX Sapphire Rule 503
- **Customer Cross Order.** A Customer Cross Order is comprised of a Priority Customer Order to buy and a Priority Customer Order to sell at the same price and for the same quantity. A Customer Cross Order is not valid during the opening rotation process described in MIAX Sapphire Rule 503.
- **Qualified Floor Order (QFO)**. A simple market QFO order consists of two individual orders, submitted as a paired order, one buy and one sell, for the same option, where the buy and sell orders are to be matched at a price and are of equal size, unless subject to any must-fill quantity and Max Surrender Size (MSS) requirement. Simple market QFO is a crossing order from the trading floor sent to the Exchange via the Floor Broker FIX sessions for processing. A QFO order is not valid during the opening rotation process described in MIAX Sapphire Rule 503.

Each of these types of orders is described in detail in MIAX Sapphire Rule 516 excepting QFOs which are described in MAX Sapphire Rule 2040. The Exchange maintains a full audit trail of every order submitted to the Exchange's System. Members may receive status reports regarding orders submitted to the Exchange or change or cancel an order at any time before that order is executed on the Exchange.

6.02   Routing to Other Exchanges

Routing services are provided for routing to all Options Exchanges in the United States and are fully compliant with the Options Locked and Crossed Markets Plan (the Plan). The MIAX Sapphire System routes Public Customer Orders received via the FIX Order Interface (FOI) to away markets displaying liquidity at the NBBO when required to satisfy a protected quotation under the Plan. Orders received through MEO are not eligible for routing by the MIAX Sapphire System and will be managed if locking or crossing the NBBO.

A full description of MIAX Sapphire routing functionality is available in MIAX Sapphire Rule 529.

6.03   Interfaces and Liquidity Types

MIAX Sapphire has both a FIX Order Interface (FOI) and MIAX Sapphire Express Orders Interface (MEO). The FOI allows standard orders in FIX format. The MEO Interface allows the submission of Cancel-Replacement orders or Standard orders in a binary format. A Cancel-Replacement order replaces an existing order for a given MPID on the same product and side. A Standard order is always treated as a new order and does not cancel or replace any existing order. A Standard order can be canceled or replaced using the respective message types.

A bulk order packet can contain one or more Cancel-Replacement orders, Standard orders, Standard order cancels or Standard order replacements. The maximum number of such orders in a packet is conveyed in the MEO Interface specification: MIAX Global Options Exchange Interface Specifications.

Quoting Requirements (Order Submission)

A Market Maker's bid and offer for a series of options contracts shall be accompanied by the number of contracts at the price the Market Maker is willing to buy or sell. The best bid and best offer entered by a Market Maker must have a size of at least one (1) contract. A Market Maker that enters a bid (offer) in a series in which he is registered on the Exchange must enter an offer (bid).

A Market Maker must enter continuous bids and offers for the options series to which it is registered in accordance to MIAX Sapphire Rule 605.

The total number of contracts executed by a Market Maker in series in which it is not registered as a Market Maker shall not exceed twenty-five percent (25%) of the total number of all contracts executed by the Market Maker in any calendar quarter.

Further information regarding order submission requirements for Market Makers can be found in MIAX Sapphire Rules 604 and 605 and on the Exchange's website: MIAX Global Options Exchange Rulebooks

7. Trading on MIAX Sapphire

7.01   Penny Program

MIAX Sapphire participates in the Penny Program, which provides for the quoting and trading of certain option classes in penny increments. A list of the classes participating in the Penny Program is available along with other listing information on the Exchange's website at this address: MIAX Global Options Exchange Listings.

7.02   Minimum Trading and Pricing Increments on MIAX Sapphire

Options in classes not in the Penny Program have a Minimum Price Variation (MPV) for SBBO display in $0.05 increments if the affected series has a price of under $3.00, and in $0.10 increments if the affected series has a price of $3.00 or higher.

Options in classes in the Penny Program have an MPV for SBBO display in $0.01 increments under $3.00 and $0.05 increments for prices of $3.00 or greater. Options overlying the PowerShares QQQ™ ("QQQ"), SPDR® S&P 500® ETF (SPY), and iShares® Russell 2000 ETF (IWM), however, are quoted and traded in minimum increments of $0.01 for all series regardless of the price.

7.03   Allocation of Trades

MIAX Sapphire supports price-time trade allocation. Within each price level, if there are two or more orders at the best price, trading interest will be executed in time priority.

7.04   MIAX Sapphire Opening Process

The MIAX Sapphire Opening Process begins when the quoting requirements and other provisions of MIAX Sapphire Rule 503(b)(1) have been satisfied.

Once the Opening Process begins, if there are no orders that lock or cross each other, the System will open by disseminating the Exchange's best bid and offer among orders that exist in the System at that time. If there are orders that lock or cross each other for a particular option series, the System will determine a single price at which such option series will be opened (the Opening Price). Under MIAX Sapphire Rule 503(b)(2)(i) the Opening Price of a series will be the midpoint of the Valid Width NBBO, and will be rounded up if necessary to achieve a proper MPV.

After establishing an Opening Price, orders in the System that are priced equal to or more aggressively than the Opening Price will be matched based on price-time priority. Matches will occur until there is no remaining volume or there is an imbalance of orders. All orders or portions thereof that are matched pursuant to the Opening Process will be executed at the Opening Price. An imbalance of orders on the buy side or sell side may result in orders that are not executed in whole or in part. Such orders will be handled in time sequence, beginning with the order with the oldest time stamp and may, in whole or in part, be placed on the MIAX Sapphire Book, cancelled, executed, or routed in accordance with MIAX Sapphire Rule 529.

After all possible interest has been traded at the Opening Price, free trading will begin. Any interest from the Opening that was priced equal to, or through, the Opening Price, along with any new interest received during the Opening, will be introduced into the System in sequence based upon the time of order receipt

More information regarding Opening on the Exchange can be found in MIAX Sapphire Rule 503.

7.05   System Settings

All current System settings are posted in the Regulatory Circulars located under the Regulatory tab on the Exchange's website: MIAX Global Options Exchange Regulatory Circulars. Changes to System settings are also published by the Exchange as either Regulatory Alerts or Regulatory Circulars, as required. Please be sure to check the Exchange's website for the most current information.

7.06   Trading Halts and Trading Pauses

The System automatically halts trading when the primary market for the underlying security disseminates a halted or paused condition. Under certain circumstances, in the interest of a fair and orderly market, the Exchange may elect to manually halt trading in an individual option class, a group of option classes or all option classes Exchange wide.

The Opening Process will not begin if the underlying security is halted or paused. If the Opening Process is in progress at the time of the halt, the System will interrupt the Opening Process prior to its completion, will halt trading in options already opened and will prevent unopened options from opening. After a trading halt on MIAX Sapphire, the System will reopen following the same processes as the Opening Process, except that the Primary Listing Exchange for the underlying security will be used in place of the any other exchange that may have been designated as the MIAX Sapphire Exchange for Opening. The designated MIAX Sapphire Exchange for Opening is disseminated via Regulatory Circular and is available on the Exchange's website.

Notifications Prior to Re-Opening:

- The Post Halt Notification period is the length of time prior to reopening after a manual trading halt prior to which a System notice is distributed over the Exchange's data feeds
  - 20 Seconds
- The Reopening Delay period is the length of time prior to reopening after an automatic trading halt (a System initiated interruption of trading resulting from a halt or pause in the underlying security on its primary listing exchange) prior to which a System notice is distributed over the Exchange's data feeds
  - 5 Seconds

7.07   Limit Up/Limit Down (LULD)

LULD functionality on MIAX Sapphire is in effect when the underlying NMS Stock has entered into a Limit State or Straddle State. Once an NMS Stock has entered either a Straddle State or

Limit State:

- The Exchange will not open an affected option.

- If an LULD state is entered after the opening, the Exchange will:
  - o reject all incoming market orders submitted into the Exchange System, and
  - o cancel all unexecuted market orders existing within the Exchange System, except that market orders to sell an option received when the national best bid is zero and the Exchange's disseminated offer is equal to or less than $0.10 that have been converted to limit orders to sell pursuant to MIAX Sapphire Rule 519(a) (1) will not be cancelled by the Exchange's System.

In addition, once an NMS Stock has entered either a Limit or Straddle State, the Exchange shall relieve Exchange Market Makers from the following quotation obligations for options on the affected underlying NMS Stock:

- the minimum size requirement set forth in MIAX Sapphire Rule 605(a);
- the requirement to submit two-sided quotes set forth in MIAX Sapphire Rule 605(b); and
- the continuous quoting obligation set forth in MIAX Sapphire Rule 605(d)

When an underlying NMS Stock is subject to a Trading Pause, the Exchange System will halt trading in options overlying the affected NMS Stock pursuant to MIAX Sapphire Rule 504(c).

7.08   Market Wide Circuit Breakers (MWCB)

MWCB halts are treated by the System in the same fashion as a Regulatory Trading Halt on the Primary Listing Market.

8. Trading on the Exchange Floor

8.01 Registration

Each Floor Broker, Floor Market Maker and registered representative must successfully complete and maintain appropriate registration and examination requirements

- Non-Participant/Clerk Registration
  - All Trading Floor personnel, including clerks, interns, stock execution clerks and any other associated persons must also successfully complete and maintain appropriate registration and examination requirements

8.02 Trading Floor Hours

Dealings upon the Trading Floor shall be limited to Exchange's normal trading hours. Reference Chapter 15. Hours of Operation

8.03 Responsibilities of Floor Brokers

General Responsibility
- Floor Broker shall ascertain that at least one Floor Market Maker is present in the Crowd Area prior to announcing an order for execution
- Must use due diligence to cause the order to be executed at the best price
- Must make reasonable effort to determine whether an order is for the account of a Priority Customer or broker-dealer when informing the trading crowd

Contingency Order
- Floor Broker shall be responsible for satisfying any dependency requirement when handling a contingency order

Order Recordation
- Floor Broker or Floor Broker's employees shall, contemporaneously upon receipt of an order, and prior to the announcement of such an order in the trading crowd, record all options orders and required order information represented by such Floor Broker onto the Floor Broker's order entry mechanism

Announcement
- Floor Broker must announce an agency order that the Floor Broker is representing to the trading crowd before submitting the order to the Exchange's System for execution

8.04   Qualified Floor Orders

Orders on the Trading Floor must be announced to the trading crowd. Floor Brokers must submit the agency order as part of a two-sided order (Qualified Floor Order or "QFO") to the Exchange's System for execution.

- QFO sent to the system is not deemed executed until it is processed by the System
- All transactions occurring from the Trading Floor must be processed by the System
- Floor Brokers are responsible for handling all orders in accordance with the Exchange priority and trade-through rules

QFO functionality will assist the Floor Broker in respecting the Electronic Book, consistent with Exchange priority rules

- A QFO will have an initiating side and a contra-side
  - The initiating side is the order which must be filled in its entirety
  - The contra-side must guarantee the full size of the initiating side
  - The QFO may provide a maximum surrender size
  - The contra-side may include solicited interest from the trading crowd and/or the Floor Broker Provided contra-side interest
- QFO will be limited solely to the Trading Floor
- Only Floor Brokers may use QFOs
- QFOs may be complex orders ("cQFOs")
- QFO will be rejected and a reject message sent to the Floor Broker if any components are not open for trading
- A Complex QFO will be rejected if any of the components are not open for trading
- QFO will not route to an away exchange
- QFO will not trade through an away exchange displaying a better price

Submission of QFOs

- Once the Floor Broker submits the QFO to the System the terms of the QFO cannot be changed
- After announcing the QFO to the trading crowd, the Floor Broker must submit the QFO to the System without undue delay
- When a Floor Broker executes a single-leg QFO, the execution price must be equal to or better than the NBBO
  - May not trade through any equal or better priced Priority Customer bids or offers on the Simple Order Book, or
  - Trade through any interest on the Simple Order Book that is priced better than the proposed execution price

Allocation of QFOs

- First, the initiating side of the QFO (cQFO) will match against any bids or offers on the Simple Order Book (Strategy Book) priced better than the contra-side, subject to adequate maximum surrender size. Multiple bids or offers at the same price are matched based on time priority.
- Next, at the same price as the contra-side of the QFO (cQFO), if any contracts (strategies) of the initiating side remain, the initiating side of the QFO (cQFO) will match against Priority Customer Orders on the Simple Order Book (Strategy Book), along with any bids or offers

of non-Priority Customers ranked ahead of such Priority Customer Orders on the Simple Order Book (Strategy Book), subject to adequate maximum surrender size. Multiple bids or offers at the same price are matched based on time priority.

- Last, the remaining balance of the initiating side of the QFO (cQFO), if any, will then be matched by the System against the contra-side of the QFO (cQFO), regardless of whether the contra-side order submitted by the Floor Broker is ultimately entitled to receive an allocation pursuant to the first and last bullets below. If no Floor Participant, other than the executing Floor Broker, is entitled to an allocation, then no further steps are necessary. If however, Floor Participants are entitled to an allocation, the remaining balance of the initiating side of the QFO (cQFO) will be allocated as described below.
  - First, if the QFO (cQFO) satisfies the eligible order size requirement, the executing Floor Broker is entitled to 40% of the remaining quantity of the initiating side of the QFO (cQFO)
  - Next, Floor Participants that responded with interest when the executing Floor Broker announced the QFO (cQFO) to the trading crowd are allocated. When multiple Floor Participants respond with interest, priority is established pursuant to MIAX Sapphire Rule 2045.
  - Last, if interest remains after Floor Participants that responded with interest receive their allocation, the remaining quantity of the initiating side of the QFO (cQFO) will be allocated to the executing Floor Broker
- After the execution of the QFO (cQFO), the executing Floor Broker must provide the correct allocations to an Options Exchange Official in writing, without unreasonable delay

Guarantee

- Floor Brokers holding an order of eligible order size or greater, the Floor Broker is entitled to cross a certain percentage of the order. The exchange may determine, on an option by option basis, the eligible order size subject to this guarantee, however, the eligible order size may not be less than 50 contracts.

Not Held Order

- An order entrusted to a Floor Broker will be considered a Not Held Order, giving discretion as to the price or time at which such order is to be executed

Maximum Surrender Size

- A Floor Broker may optionally provide a maximum surrender size. The maximum surrender size is the number of contracts, if any, of the initiating side of a QFO that the Floor Broker is willing to relinquish to orders and quotes on the Electronic Book that have priority. If the number of contracts on the Electronic Book is greater than the maximum surrender size, then the QFO will be rejected. If the number of contracts is less than or equal to the maximum surrender size, then the QFO will execute.

Priority on Split-Price Transactions Occurring in Open Outcry

- If a Floor Participant buys (sells) one or more contracts of a particular series at a particular price or prices, the Floor Participant must, at the next lower (higher) price at which another Floor Participant bids (offers), have priority in buying (selling) up to the equivalent number of option contracts of the same series that the Floor Participant bought (sold) at the higher (lower) price or prices, provided that the Floor Participant's bid (offer) is made promptly and continuously and that the purchase (sale) so effected represents the opposite side of a

transaction with the same order or offer (bid) as the earlier purchase or purchases (sale or sales).
- o Split-Price priority only applies to transactions effected on the Trading Floor
- o The transaction must meet the minimum qualifying order size
- o Complex QFO is also afforded Split-Price price priority
- o If the width of quote for a series is the minimum increment for that series and there is a Priority Customer resting on the Electronic Book, split-price priority is not available until the Priority Customer resting on the Electronic book is cancelled or trades

8.05   Additional Trading Floor Considerations

- Floor Broker must disclose all securities that are components of the Priority Customer order which is subject to crossing before requesting bids and offers for the execution of all components of the order
- Once the trading crowd has provided a quote, it will remain in effect until: i) a reasonable amount of time has passed, or ii) there is a significant change in price of the underlying security, or iii) the market given in response to the request has been improved
- Participants of the trading crowd who established the market will have priority over all other orders that were not announced in the trading crowd at the time that the market was established
  - o Except Priority Customer orders on the Electronic Book or any non-Priority Customer orders that have priority over such Priority Customer orders on the Electronic Book, or
  - o Orders that improve upon the market
- Floor Participants who established the market are responsible to alert the Floor Broker they have priority
- Floor Participants may not prevent a complex order from being completed by giving a competing bid or offer for one component of such order
- A Floor Broker crossing a Priority Customer Order with an order that is not a Priority Customer Order, when providing for a reasonable opportunity for the trading crowd to participate in the transaction, shall disclose the Priority Customer Order that is subject to crossing.
- Floor Brokers are permitted to execute "tied hedge" transactions; i.e. buying or selling a stock, security futures, or futures position following receipt of an option order or complex order
  - o The order must be in a class designated as eligible for "tied hedge"
  - o Must satisfy the minimum size parameter determined by the Exchange and may not be smaller than 500 contracts per order
    - ▪ Multiple orders cannot be aggregated to satisfy the size parameter
    - ▪ For complex orders at least one component must meet the minimum size requirement
  - o Floor Broker must create an electronic record that is it engaging in a tied hedge in a manner prescribed by the Exchange. The order must be:
    - ▪ Tied hedge eligible
    - ▪ Brought without undue delay to the trading crowd and announced concurrently with the option order
    - ▪ Offered to the trading crowd in its entirety, and

- Offered, at the execution price received by the Floor Broker introducing the option, to any in-crowd Floor Participant who has established parity or priority for the related options
  - The hedging position must not exceed the option order on a delta basis
  - For all tied hedge transactions
    - The Exchange's open outcry allocation and reporting procedures apply
    - Are subject to existing trade-through requirements for options and stock as applicable
    - When the option order is a simple order, the execution of the option leg of a tied hedge transaction does not qualify for the NBBO trade-through exception for a Complex Trade
    - Trading crowd Floor Participants that participate in the option transaction must also participate in the hedging position and may not prevent the option transaction from occurring by giving a competing bid or offer for one component of such order
    - In the event the conditions in the non-options market prevents the execution of the non-option leg(s) at the agreed prices, the trade representing the options leg(s) may be cancelled
    - Floor Broker must deliver to the customer a written notification informing the customer that his order may be executed using the Exchange's tied hedge procedures

8.06   Priority in the Trading Crowd

The highest bid and lowest offers shall have priority, but where two or more bids (offers) for the same option contract represent the highest price (lowest price), priority shall be afforded to such bids (offers) in the sequence in which they are made. If, however, the bids (or offers) of two or more Floor Participants are made simultaneously, or if it is impossible to determine clearly the order of time in which they are made, such bids (or offers) will be deemed to be on parity and priority will be afforded to them, insofar as practicable, on an equal basis.

- Floor Broker will be responsible for determining the sequence in which bids or offers are vocalized on the Trading Floor
- Floor Participant that established priority must inform the Floor Broker of such priority when the Floor Broker announces the order
- disputes regarding a Floor Broker's determination of time priority sequence will be resolved by the Options Exchange Official
- Options Exchange Official may nullify a transaction or adjust its terms if they determine the transaction to have been in violation of Exchange's Rules
- Floor Participant with first priority is entitled to buy or sell as many contracts as the Floor Broker may have available to trade. If there are any contracts remaining, the Floor Participant with second priority will be entitled to buy or sell as many contracts as there are remaining in the Floor Broker's order, and so on, until the Floor Broker's order has been filled entirely.
- When Floor Participant bids or offers are made simultaneously, such bids or offers will be deemed to be on parity and priority will be afforded to them, insofar as practicable, on an equal basis

- When a Floor Broker requests a market in order to fill a large order, and the Floor Participants provide a collective response. In such situation, if the size of the trading crowd's market, in the aggregate, is less than or equal to the size of the order to be filled, the Floor Participants will each receive a share of the order that is equal to the size of their respective bids or offers.
    o If the size of the trading crowd's market exceeds the size of the order to be filled, that order will be allocated on a size pro rata basis

8.07   Clerks

The term "Clerk" means any registered on-Floor person employed by or associated with a Floor Broker or Floor Market Maker and who is not eligible to effect transactions on the Trading Floor as a Floor Market Maker or Floor Broker

- Clerks shall display prominently at all times the badge(s) supplied to them by the Exchange
- Must comply with the registration requirement(s)
- Must disclose in detail to the Exchange, on an annual basis, the specific nature of such additional function(s)
- Must submit to the Exchange written supervisory procedures in relation to such Clerk's activities
- A Floor Broker who employs a Clerk:
    o May have the Clerk enter an order under the direction of the Floor Broker by way of any order handling entry device
- Floor Market Maker Clerk is any on-floor Clerk employed by or associated with a Floor Market Maker
    o Floor Market Maker Clerk is permitted to communicate verbal market information (i.e., bid, offer, and size) in response to requests for such information, provided that such information is communicated under the direct supervision of his or her Floor Market Maker employer
    o A Floor Market Maker Clerk may consummate electronic transactions under the express direction of his or her Floor Market Maker employer by matching bids and offers

8.08   Floor Market Makers

Floor Market Maker is a Floor Participant of the Exchange located on the Trading Floor who has received permission from the Exchange to trade in options for his own account providing price continuity and liquidity for purposes of maintaining a fair and orderly market

- Floor Market Makers must provide a two-sided market complying with the quote spread parameter requirements
- Market Makers shall provide such quotations with a minimum size of ten (10) contracts

More information regarding Trading on the Exchange Floor can be found in Chapters XX and XXI of the MIAX Sapphire Rules.

9. The MIAX Sapphire Complex Order System

The MIAX Sapphire Complex Order System is an execution platform providing for the execution of Complex Orders. A Complex Order is an order involving the simultaneous purchase and / or sale of two or more different options in the same underlying security (the "legs" or "components") for the same account for the purpose of executing a particular investment strategy. A Complex Order may have up to twelve components for all options, thirteen components when stock-tied, all settling into the same underlying security and executed at a single net price. The Complex Order System has the capability to match Complex Orders with other Complex Orders on the Strategy Book and to continually evaluate for possible execution (through matching) those Complex Orders that are resting on the Strategy Book.

MIAX Sapphire Complex Order functionality may be enabled or disabled via Regulatory Circular.

9.01   Complex Order Types

- **Market Orders**
  - An order to buy or sell a stated number of Strategies at the best price available at the time of execution.
- **Limit Orders**
  - An order to buy or sell a stated number of Strategies at or better than a specified price.
- **Day Limit Orders**
  - Day Orders will be available for immediate Strategy Match or placement on the Strategy Book upon arrival.
- **Immediate or Cancel Orders (cIOC)**
  - A cIOC order immediately trades to the extent possible and is then cancelled by the System.
- **Complex Qualified Contingent Cross Orders (cQCC)**
  - A cQCC Order is a Complex Order comprised of an originating Complex Order to buy or sell a Strategy consisting of at least 1,000 contracts of each option component coupled with a contra side order for the same Strategy which also consists of an NMS stock component. cQCC Orders are not valid during the opening rotation process described in MIAX Sapphire Rule 503.
- **Complex Customer Cross Orders**
  - A Complex Customer Cross Order is comprised of a Priority Customer Complex Order to buy and a Priority Customer Complex Order to sell at the same price and for the same Strategy. A Complex Customer Cross Order is not valid during the opening rotation process described in MIAX Sapphire Rule 503.
- **Complex Qualified Floor Order (cQFO)**
  - A complex QFO order consists of two strategy orders, submitted as a paired order, one buy and one sell, for the same strategy, where the buy and sell orders are to be matched at a price and are of equal size, unless subject to any must-fill quantity and Max Surrender Size (MSS) requirement. Complex QFO is a crossing order from the trading floor sent to the Exchange via the Floor Broker Workstation (FBW) API for

processing. A cQFO order is not valid during the opening rotation process described in MIAX Sapphire Rule 503.

More information about Complex Order types can be found in MIAX Sapphire Rule 518.

9.02   Strategy Matching of Complex Orders

The Strategy Matching of Complex Orders may take place in free trading. Strategy Match may not take place when the price of one component of the Strategy would equal the price of a Priority Customer Order resting on the Simple Order Book, unless the Strategy is "Conforming" and the NBBO of at least one component of the Strategy is improved by at least one penny. If the Strategy is "Non-Conforming", all components of the Strategy with a price equal to a Priority Customer Order resting on the Simple Order Book must be improved by at least one penny.

Complex Orders are automatically executed against bids and offers on the Strategy Book in price-time priority. Within each price level, if there are two or more orders at the best price, trading interest will be executed in time priority.

Complex Orders are not routed outside of the Exchange regardless of prices displayed by away markets. Complex Orders resting on the Strategy Book are continually re-evaluated for execution by the System. More information on the circumstances under which Strategy Matching can take place can be found in MIAX Sapphire Rule 518.

9.03   Stock-Tied Strategies

Complex Orders tied to underlying securities (generally referred to as "Stock-Tied" orders) are available through the Complex Order System:

- **Clearing Arrangements for EEMs and Market Makers**
    - Prior to submitting Stock-Tied orders to the Complex Order System, firms must first establish one of the two clearing arrangements outlined below. To complete this process, contact MIAX Member Services at: Membership@MIAXGlobal.com:
        - FINRA Transparency Services Uniform Executing Broker Agreement
            - FINRA member firms that wish to participate in the Complex Order System for Stock-Tied orders are required to execute this agreement.
        - QSR and Correspondent Clearing Relationships
            - Firms that are not FINRA members and wish to participate in the Complex Order System should establish QSR and Correspondent Clearing relationships with MIAX's Stock Routing Broker Dealer.
- Stock-Tied orders are eligible for Book Match, cQCC, Complex Customer Cross and cQFO Cross.
- **Parity Price Protection.** A description of Parity Price Protection for Stock-Tied "Buy-Write" and "Married Put" Strategies consisting of a single Call or Put option component and an underlying security component consisting of exactly 100 shares is available in the Trade Protections for Complex Orders section below.

9.04   Wide Market Conditions

The Exchange uses special handling in the Complex Order Market to protect users and to prevent potential conflicts between the Complex Order Market and the Simple Order Market. With the exception of Complex Crossing Orders during Wide Market Conditions, trading in the Strategy will be suspended and the Strategy will remain in a pre-market state until the condition is resolved. Complex Crossing Orders (cQCC, Complex Customer Cross and cQFO Cross) will be accepted and may trade during Wide Market Conditions:

- Wide Market Conditions exist when any component of a Strategy at the time of evaluation has a displayed SBBO quote width that is wider than the permissible Simple Market Valid Quote Width

More information on System behavior during Wide Market Conditions can be found in MIAX Sapphire Rule 518.

9.05   Trade Protection for Complex Orders

- **ABBO Price Protection (APP)**
  - The implied away best bid or offer (ixABBO) is the best complex bid from each single exchange and best complex offer from each single exchange, taking into account each exchange trading the components of the Strategy on their respective Simple Market Order books. Orders marked APP will never trade at a price outside of the opposing ixABBO as measured at the time of execution.
- **RPM for Complex Orders**
  - RPM Protection is extended to Complex Orders:
    - Complex Orders count as a single order for the delivering MPID regardless of the number of components that make up the Complex Order
    - Contract sides executed as a result of Complex Orders will be counted for each component of the Strategy
- **Complex MIAX Order Monitor (cMOM) Price Protection**
  - Rejects incoming limit orders that are priced through the opposite side of the cNBBO by an amount to be determined by the Exchange
  - cMOM price protection does not apply to Complex Crossing Orders (cQCC, Complex Customer Cross and cQFO Cross)
  - A full description of cMOM order price and size protections is contained under Trade Protections Chapter of this Manual
- **Order Protections Based on Size and Quantity**
  - Order Protections based on size and quantity for Complex Orders function as described under the Trade Protections Chapter of this Manual
- **MIAX Sapphire Price Collars (MPC) and MIAX Sapphire Strategy Protected Price (MSPP) for Complex Orders**
  - MPC is an Exchange-wide system that will prevent complex orders from executing at potentially erroneous prices by establishing temporary price limits (MPC Prices) beyond which the complex order will not be displayed or executed. Complex orders are displayed and/or executed according to normal complex order handling procedures until reaching the first of, i) their limit price, ii) their current MPC Price, or iii) their final MSPP collar price.
    - The MPC and MSPP Value is calculated as a dollar amount (MPC is expressed in pennies and MSPP is expressed in dollars and pennies)

— The MPC Value and MSPP Value will be determined by the Exchange and communicated via Regulatory Circular
— **The MPC Value and MSPP Value will apply equally to all Classes listed on the Exchange in which complex orders are available**

- The MPC and MSPP Value amount is added to or subtracted from the opposite side Complex National Best Bid or Offer (cNBBO) at the time the MPC and MSPP Price is initially assigned, upon receipt or upon Strategy Opening, to establish an initial MPC Price or final MSPP collar price
- If the MPC or MSPP Price is less aggressive than the limit price of the complex order (i.e., the MPC/MSPP Price is lower than the complex order bid price for a buy, or the MPC/MSPP Price is higher than the complex order offer price for a sell), or if the complex order is a market order, the complex order will be displayed and/or executed according to normal complex order handling procedures up to its MPC or MSPP Price.
- Any time liquidity would otherwise i) trade or ii) post at a price more aggressive than the current MPC Price or final MSPP collar price, the System will initiate a Complex Liquidity Exposure Process (cLEP)
    — The cLEP Price is the MPC Price or MSPP Price
- After a complex order has been subjected to a cLEP, its MPC Price will advance to a more aggressive level which will become its next MPC Price, unless the order has advanced to its final MSPP collar price and subject to cancellation. The next MPC Price is determined by adding (for protected buy interest) or subtracting (for protected sell interest) the MPC Value to/from the then existing MPC Price.
- MPC protection will continue until an order has been i) fully executed, ii) posted at its limit price, or iii) cancelled

More information about MPC and MSPP behavior can be found in MIAX Sapphire Rule 532.

- **Vertical Spread Price Protection**
  o A configurable Vertical Spread Variance (VSV) can be added to the maximum spread value (the difference between the two strikes) or subtracted from the minimum spread value of zero to create an allowable trading range for the Strategy. Orders priced through the allowable trading range will be managed at the limit of the allowable trading range or optionally cancelled if a member is configured to use the Managed Protection Override (MPO). Sell limit orders priced through the minimum allowable trade value will be rejected.
  o The pre-set value of the VSV will be uniform for all option classes as determined by the Exchange and communicated to Members via Regulatory Circular

- **Calendar Spread Price Protection**
  o A configurable Calendar Spread Variance (CSV) can be subtracted from the minimum spread value of zero (only one side is protected for a Calendar Spread). Orders priced through the minimum allowable trade value will be managed at the limit of the allowable trading range or optionally cancelled if a member is configured to use the Managed Protection Override (MPO). Sell limit orders priced through the minimum allowable trade value will be rejected.

- o The pre-set value of the CSV will be uniform for all American Style option classes as determined by the Exchange and communicated to Members via Regulatory Circular
- o CSV protection applies only to Strategies in American Style option classes

- **Butterfly Spread Price Protection**
  - o A configurable Butterfly Spread Variance (BSV) can be added to the maximum spread value (the absolute value of the difference between the closest strikes (upper strike price minus the middle strike price or the middle strike price minus the lower strike price)) or subtracted from the minimum spread value of zero to create an allowable trading range for the Strategy. Orders priced through the allowable trading range will be managed at the limit of the allowable trading range or optionally cancelled if a member is configured to use the Managed Protection Override (MPO). Sell limit orders priced through the minimum allowable trade value will be rejected.
  - o The pre-set value of the BSV will be uniform for all option classes as determined by the Exchange and communicated to Members via Regulatory Circular

- **Parity Price Protection**
  - o Parity Price Protection is available for Stock-Tied "Buy-Write" and "Married Put" Strategies consisting of a single Call or Put option component and a stock component consisting of exactly 100 shares
  - o A configurable Parity Spread Variance (PSV) will be used to calculate a protected price below which a Strategy subject to Parity Price Protection will not trade. Orders priced through the minimum allowable trade value will be managed at the limit of the allowable trading range, or optionally cancelled if a member is configured to use the Managed Protection Override (MPO).
  - o The pre-set value of the PSV will be uniform for all option classes as determined by the Exchange and communicated to Members via Regulatory Circular

- **Managed Protection Override**
  - o MPO provides member firms the ability to optionally cancel an order that would otherwise be subject to management pursuant to the following protections: Max Put Price Protection, Vertical Spread Protection, Calendar Spread Protection, Butterfly Spread Protection, and Parity Price Protection.

More information about all of the various Trade Protections for Complex Orders can be found in MIAX Sapphire Rule 532.

10. MIAX Sapphire Trade Protections

10.01 MIAX Sapphire Order Monitor (MOM)

In order to reduce the incidence of potential obvious or catastrophic errors on the Exchange, the MIAX Sapphire System includes the MIAX Sapphire Order Monitor (MOM), as described in MIAX Sapphire Rule 519. The MIAX Sapphire Order Monitor prevents certain orders that violate certain pre-defined price limits from executing or being placed on the MIAX Sapphire Book. These price protections include:

- Market orders to sell will be converted to limit orders to sell with a limit price of one Minimum Trading Increment when the national best bid is zero and the Exchange's disseminated offer is equal to or less than the Exchange default threshold setting or the Member designated threshold setting
- Rejection of market orders to buy or sell when the NBBO is $5.00 wide or greater
- Rejection of limit orders priced though the opposite side NBBO by an amount greater than 50% of the NBBO or $2.50, whichever is less, with the exception of
  - When the NBO is less than or equal to $0.50, the Exchange will only reject orders to buy with a price that is greater than the NBO by $0.25 or more
  - When the NBB is less than or equal to $0.25, the Exchange will accept any properly submitted limit order to sell

Protections under the MIAX Sapphire Order Monitor do not apply to orders received prior to, or during the Opening Process, or to incoming orders marked as Intermarket Sweep Orders (ISO).

10.02 Max Put Price Protection

Simple market protection designed to limit incorrect pricing of a Put option by establishing a maximum trading price.
- A configurable Put Price Variance (PPV) can be added to the maximum trading price for a Put option (the strike price plus the PPV. Orders priced through the allowable trading range will be managed at the limit of the allowable trading range, or optionally cancelled if a member is configured to use the Managed Protection Override (MPO).
- The pre-set value of the PPV will be uniform for all option classes as determined by the Exchange and communicated to Members via Regulatory Circular

A full description of Max Put Price Protection is available in MIAX Sapphire Rule 532

10.03 MIAX Sapphire Complex Order Monitor (cMOM)

The MIAX Sapphire Complex Order System also includes the Complex MIAX Order Monitor (cMOM), as described in MIAX Sapphire Rule 518, Interpretations and Policies .03. cMOM prevents Complex Orders that violate certain pre-defined price limits from executing or being placed on the Sapphire Strategy Book.

MIAX Sapphire Complex Order functionality may be enabled or disabled via Regulatory Circular. The cMOM price protection is as follows:

- Rejects incoming limit orders that are priced through the opposite side of the cNBBO by an amount to be determined by the Exchange and communicated to Members via Regulatory Circular, but which amount will not be greater than $2.50
- The cMOM price protection feature does not apply to Complex Crossing Orders (cQCC/cQFO QCC, Complex Customer Cross/cQFO Customer Cross and standard cQFO Cross)

10.04 Order Protections Based on Size and Quantity

The MIAX Sapphire System offers protections from potentially erroneous executions or obvious errors based on the size of orders, number of open orders and number of open contracts. Protections are available for both the Simple Order and Complex Order Markets.

- Members are required to submit global default settings for their firm as a part of the MIAX Sapphire Membership Application process for all protections based on size or quantity. Firms may provide updated settings by contacting the MIAX Sapphire Trading Operations staff. The most recent settings will remain effective in the MIAX Sapphire System until a subsequent update is received by the Exchange.

If triggered, the Simple Market Order protections referred to in this section will not affect the Firm's Complex Order Market functionality in any way, and if triggered, the Complex Market protections referred to in this section will not affect the Firm's Simple Market functionality in any way.

The following Exchange-wide Firm protections are available. These settings are not individually selectable by FOI connection, underlying security or MPID. Certain order protections are associated with functionality that may be enabled or disabled via Regulatory Circular.

Order Size
- Maximum size for a single Simple Market Order
- Maximum size for a Simple Market Crossing Order (includes; Customer Cross and Qualified Contingent Cross)
- Maximum size for a single Complex Market Order
- Maximum size for a Complex Market Crossing Order (includes; Complex Customer Cross and Complex Qualified Contingent Cross)

Maximum Number of Open Orders
- Maximum number of Simple Market open orders
- Maximum number of Complex Market open orders
- These settings include partially filled orders

Maximum Number of Open Contracts
- Maximum number of Simple Market open contracts
- Maximum number of Complex Market open contracts
- These settings include sum of any contracts remaining from unfilled and partially filled orders

For both Simple Market and Complex Crossing Orders, both the Agency side and Contra Order will each contribute to calculations for all Order Protections based on open orders and open contracts. For the Maximum size of a Crossing Order, only the Agency side (or the first side for Customer Cross and Qualified Contingent Cross Orders) will be counted.

For further information on the configuration of Order Protections Based on Size and Quantity, please contact MIAX Trading Operations: TradingOperations@MIAXGlobal.com.

10.05 MIAX Sapphire Variable Price Protection (MVP)

The System applies a price protection process, as described in MIAX Sapphire Rule 515(c), to all orders (other than ISO orders which are handled in accordance with subsection (f) of MIAX Sapphire Rule 515), limiting executions to no more than a specified number of MPVs through the NBBO as captured at time of order receipt. (If the Sapphire best bid (offer) on the same side as the liquidity being evaluated is crossed by the National best offer (bid), the Sapphire best bid (offer) will be used as the starting point for the MIAX Sapphire Variable Price protection in place of the National best offer (bid)).

If size remains from a limit order priced though the NBBO (at the time of receipt) by more than the specified number of MPVs or a market order, and the order has exhausted its ability to execute on the NBBO within the MVP limit, the balance of the order will be cancelled back to the submitting Member.

The number of MPVs through the NBBO at the time of order receipt that the order will be allowed to execute may be specified in the order at the time it is submitted to the Exchange though the MIAX Sapphire FIX Order Interface.

The acceptable value range for MIAX Sapphire Variable Price Protection is:

- 0 to 20
  - A selection of 0 will indicate that the order will not be allowed to trade at a price inferior to the NBBO at the time the order was received.

In the absence of a specified MVP value in the order at the time of submission, an Exchange default value for MVP will be applied. The MVP Exchange default value is five (5) MPVs.

Orders that participate in the MIAX Sapphire Opening Process will always use an MVP value of zero (0) regardless of whether another value has been specified in the order at the time of submission.

10.06 MIAX Sapphire Aggregate Risk Manager ("ARM-M")

The MIAX Sapphire Aggregate Risk Manager (ARM) protects Market Makers who choose to participate (collectively ARM Participants) by limiting the number of contracts executed for a submitting MPID as a result of orders entered through MEO in a single class within a brief period of time as described in MIAX Sapphire Rule 517A.

MIAX Sapphire ARM tracks the number of contracts traded by an ARM Participant (represented as a percentage of their bid or offer size) in an assigned option class within a specified time period. The ARM Participant establishes a percentage of the number of contracts that they are bidding for or offering (Allowable Engagement Percentage) and the time period for each option class. When an execution

against an ARM Participant's ARM Eligible Order occurs, the System looks back over the specified time period to determine whether the execution is of sufficient size to trigger the Aggregate Risk Manager. As described in MIAX Sapphire Rule 517A, the Market Maker Counting Programs include all orders submitted by a Market Maker with the exception of Immediate-or-Cancel (IOC) orders.

The System engages the Aggregate Risk Manager when it has determined that an ARM Participant has traded a number of contracts equal to or above their Allowable Engagement Percentage during the time period. The Aggregate Risk Manager then automatically cancels and removes the ARM Participant's orders from the Exchange's disseminated quotation in all series of that particular option class and rejects new orders by the ARM Participant in all series of that particular option class submitted using the MEO Interface until the ARM Participant sends an ARM Protection Reset Message and submits a new order in the affected class. Orders submitted through FIX are not counted or cancelled by the Aggregate Risk Manager.

10.07 ARM^2

ARM^2 is an enhancement to the ARM functionality. ARM^2 further protects MIAX Sapphire Market Maker firms with two additional ARM-derived counting programs, ARM^2 Class Protection and ARM^2 Firm Protection.

- **ARM^2 Class Protection**
  - ARM^2 Class Protection counts the number of ARM protections in a Class for a Market Maker MPID over an ARM^2 Counting Period specified by the firm. If the ARM^2 Class Protection Rate is met by a number of ARM Triggers in any Class, ARM^2 will trigger ARM^2 Class Protection for that MPID in the affected Class. ARM^2 Class Protection will prevent automated re-entry of MEO orders. Protections will remain until a manual re-enablement is accomplished by MIAX Sapphire Trading Operations, allowing an ARM Protection Reset Message to be submitted.

- **ARM^2 Firm Protection**
  - ARM^2 Firm Protection counts the total number of unique Classes that trigger ARM for a firm over a Counting Period specified by the firm. If the number of unique Classes that trigger Primary ARM meets or exceeds the ARM^2 Firm Protection Rate, ARM^2 will trigger Secondary ARM protection for all Classes for the Market Maker firm. Secondary ARM protection will prevent the automated entry or re-entry of MEO orders. Protections will remain until a manual re-enablement is accomplished by MIAX Sapphire Trading Operations allowing an ARM Protection Reset Message to be submitted.
  - ARM^2 Market Maker Firm Protection applies to all of a Market Making firm's MPIDs across all classes.

- **Configuration of ARM^2 Settings**
  - As with ARM settings, ARM^2 Class Protections are entered into the System via that MIAX Sapphire Express Order Interface (MEO). Using MEO, the firm can at any time create, edit or delete:
    - The settings for how many Primary ARM protections are required to trigger ARM^2 for any Class/MPID combination
    - The Counting Period settings for any Class/MPID combination

- o To create, edit or delete ARM^2 Firm Protections, the firm must submit a completed Protection Template to MIAX Sapphire Trading Operations describing the ARM^2 Firm Protection settings desired including the following:
  - The total number of unique Classes that must be protected by ARM across all MPIDs in the firm required to trigger ARM^2 Firm Protection
  - The Counting Period setting for ARM^2 Firm Protection

10.08 Single Side Protection (SSP) for binary orders in the Complex and Simple Order Markets

MIAX Sapphire Single Side Protection removes the risk of trading multiple MEO orders on the same side of the market for an option or Complex Order Strategy. In order for protection to be in effect, SSP must be enabled for an MPID by contacting Sapphire Trading Operations. A single setting will enable (or disable) SSP for both the Simple Order Market and Complex Order Market, although the protections will operate separately (i.e., a Simple Order Market trigger will not affect Complex Order Market quotations or vice-versa.).

If enabled, SSP will be triggered when the full remaining size of a Simple or Complex MEO order is exhausted by a trade.

Once triggered in either the Simple Market or Complex Market, the Member will be notified and the following actions affecting that Member will be taken:

- Any Simple Market or Complex Market MEO order on that side of that option or Strategy for that Member will be cancelled
- All new Simple Market or Complex Market MEO orders on that side of that option or Strategy for that Member will be blocked
- A reset message will be required before the Member can reenter MEO orders on that (sell or buy) side of that option or Strategy
- ISO orders are unaffected (are not cancelled or blocked) and will never cause a protection to be triggered

SSP Operates separately from any other MIAX Sapphire trade protection and requires a separate reset to re-enable trading for that MPID for that side of the affected option or Strategy.

10.09 MIAX Sapphire Risk Protection Monitor for Orders Entered via the FIX Interface ("RPM-FIX")

The MIAX Sapphire Risk Protection Monitor (RPM) is responsible for monitoring risk from the transmission and execution of an EEM's orders, submitted by a specific order interface (FOI), Exchange-wide. When an order is received or an execution from an order occurs, RPM will look back over the specified time frame and calculate the number of orders or executed contracts for that firm on that interface. When the number of orders or executed contracts from orders for that firm exceeds a predetermined level, RPM will automatically trigger RPM Safeguards for the firm as described in MIAX Sapphire Rule 519A.

All Members who enter orders on the Exchange may establish basic risk protections for trading on MIAX Sapphire. A participating Member may establish specified time periods for both an Allowable Order Rate and an Allowable Contract Execution Rate. The maximum duration of each specified time period will be established by the Exchange and announced via Regulatory Circular.

When a Member's order is entered, or when an execution of a Member's order occurs, the

System will look back over the specified time period to determine whether the order entered or the execution that occurred triggers the Risk Protection Monitor.

- Members may establish whether the Risk Protection Monitor, when triggered, will:
  - Prevent the System from receiving any new orders in all series in all classes from the Member; or
  - Prevent the System from receiving any new orders in all series in all classes from the Member and cancel all existing Day orders in all series in all classes from the Member; or
  - Send a notification that the Risk Protection Monitor has been triggered without any further preventative or cancellation action by the System

RPM Groups

- Members may also elect to group with other Members to enable the Risk Protection Monitor to apply collectively to the Group. The Members in the Group must designate a Group owner. Members may elect to group provided that either:
  - There is at least 75% common ownership between the firms as reflected on each firm's Form BD, Schedule A; or
  - There is written authorization signed by all Members in the Group and the Group owner maintains exclusive control of all orders sent to the Exchange from each MPID within the Group.
- A clearing firm may also elect to group several Members to enable the Risk Protection Monitor to apply collectively to the Group with the clearing firm designated as the Group owner, provided that the clearing firm serves as the clearing firm for all the MPIDs of the Group and there is written authorization signed by the clearing firm and each Member of the Group. A clearing firm that has grouped several Members may only receive warning messages, unless one Member of the Group maintains exclusive control of all orders sent to the Exchange from each MPID within the Group.
- The Risk Protection Monitor for Groups will operate in the same manner as described above, except that: (i) the counting program will count the number of orders entered and the number of contracts traded resulting from an order entered by all MPIDs in the Group collectively; (ii) the System will trigger the Risk Protection Monitor when the Group collectively exceeds either the Allowable Order Rate or Allowable Contract Execution Rate for the Group; (iii) once engaged, the Risk Protection Monitor will then either automatically prevent the System from receiving any new orders in all series in all classes from each MPID in the Group, and, if designated by the Group owner's instructions, cancel all existing Day orders in all series in all classes from the Group or send a notification without any further preventative or cancellation action by the System; and (iv) only the designated Group owner may request the Exchange to enable the acceptance of new orders for all the Members of the Group.
  - Subject to the above, a Member may establish more than one Group.

Crossing Order Handling in RPM
- The System does include the following paired order types in the counting program. Each side to be counted as two orders for the purpose of calculating the Allowable Order Rate:
  - Simple and Complex QCC Orders
  - Simple and Complex Customer Crossing Orders
- Once engaged, the Risk Protection Monitor will block, but will not cancel any existing:
  - Complex Crossing Orders (Stopped orders or immediately executed orders)
  - QCC, cQCC, C2C and cC2C orders do not exist on the book and are therefore not subject to cancellation

Such eligible orders will remain in the System available for trading and management when the Risk Protection Monitor is engaged.

RPM Warnings
- Members may also elect to receive warning notifications indicating that a specific percentage of an Allowable Order Rate or an Allowable Contract Execution Rate has been met for all metrics

For further information on the configuration and operation of the Risk Protection Monitor, please contact MIAX Sapphire Trading Operations: TradingOperations@MIAXGlobal.com.

10.10 FIX Auto Cancel on Disconnect Protection (FIX ACOD)

FIX ACOD allows MIAX Sapphire EEMs to limit their exposure during all losses of FIX connectivity other than MIAX Sapphire induced losses by instructing MIAX Sapphire to automatically cancel designated FIX orders upon a loss of connectivity with the MIAX Sapphire FIX Order Interface (FOI).

FIX ACOD protection can be specified on a per-session (the MIAX Sapphire System will automatically mark all new FIX orders received during that session for ACOD protection) or on a per-order basis. When operating on a per-order basis, the user will mark only those orders to be protected when the order is submitted to the Exchange though the MIAX Sapphire FOI.

FIX ACOD protection is not invoked during a MIAX Sapphire induced loss of connectivity. During a MIAX Sapphire induced loss of connectivity, users may contact MIAX Sapphire Trading Operations for status or to cancel open orders.

For more details on FIX ACOD functionality, please see the MIAX Sapphire FIX Order Interface Functional Specification on the MIAX Sapphire website: MIAX Global Options Exchange Interface Specifications.

10.11 MEO Auto Cancel on Disconnect Protection (MEO ACOD)

The MEO ACOD provides MIAX Sapphire Members using the MEO Interface to a way limit their exposure during connectivity outages by instructing the MIAX Sapphire System to automatically cancel all MEO orders upon a loss of connectivity with the MIAX Sapphire MEO Interface.

- The behavior is always on for all Members for all MEO connections

- The default behavior is that all MEO orders entered by a firm to an engine will be removed upon disconnect of that firm's last MEO connection to that engine
- All orders received for any MPIDs that send orders on a port group, will be purged when the last port in that port group is disconnected
- Firms may request custom configurations by delivering MPID and port combinations.

For more details on MEO ACOD functionality, please see the MIAX Sapphire MEO Order Interface Functional Specification on the MIAX Sapphire website: MIAX Global Options Exchange Specifications.

10.12 Mass Cancellation Trading Interest

A Member may cancel all of its quotations and/or all or any subset of its orders in the System by contacting the MIAX Sapphire Trading Operations Desk. The MIAX Sapphire Trading Operations Desk will manually execute the Member's request.

10.13 Self-Trading Protection

The MIAX Sapphire System contains certain protections to prevent Market Makers and protected EEM MPIDs from interacting with their own orders.

Market Makers may choose to have self-trade protection implemented at the MPID level or at the Firm level. In the event that a Market Maker sends an order priced at a limit that would allow it to interact with another order from that same Market Maker Firm (if Firm level protection is selected) or MPID (if MPID level protection is selected) that is resting on the opposite side of the market, the appropriate resting order identified with that Market Maker MPID or Firm will be cancelled by the System and the new order will be accepted by the System. Self-Trade Protection is available for all Market Maker orders entered via the MEO Interface without regard as to whether the other orders involved were received over the MIAX Sapphire FOI or MEO Interfaces.

10.14 Order Purges

- **Firm Initiated and firm Requested Purges**
  - Firms may initiate order purges via MEO with a single request
    - **Underlying Security Purges**. Purge all orders in a class or classes associated with a specific underlying security for a given MPID.
      - Can apply to Simple Market orders, Complex Market orders or both
      - A Reset Message is required to resume the submission of any orders in that Class
    - **Hybrid Underlying Security Purges**. Purge all orders with a time in force of Day in a class or classes associated with a specific underlying security for a given MPID. IOC and ISO are not affected.
      - A Reset Message is required to resume the submission of Day orders in affected classes
      - IOC and ISO orders are not blocked and continue to be accepted without the requirement of a Reset Message
  - MIAX Sapphire Trading Operations has the ability to quickly cancel all orders by firm request for the following categories

- Underlying security and MPID
- Globally by MPID
- Globally by firm

- **MIAX Sapphire Initiated and Automatic Purges**
  - **Port Disconnect Purges**
    - **Default Behavior.** If all ports for a given firm on a specific matching engine disconnect, all orders for all of that firm's MPIDs will be purged for that matching engine.
      - Port Grouping. Allows firms to specify custom port groupings and regulate automatic purge behavior by group. Contact MIAX Sapphire Trading Operations for details.
    - Port Disconnect Purges can be configured to apply to Simple Market orders, Complex Market orders or both.
  - **Loss of Heartbeat**
    - If all MEO applications on a specific matching engine fail for a given firm, all orders are purged for all of that firm's MPIDs on that matching engine
      - Port Grouping. Allows firms to specify custom port groupings and regulate automatic purge behavior by group. Contact MIAX Sapphire Trading Operations for details

Additional information about Order Purges can be found in the MIAX Sapphire Express Interface Functional Specification on the MIAX website: MIAX Global Options Exchange Interface Specifications.

10.15 ABBO Crossing Protection (Management of Non-Routable Liquidity)

The MIAX Sapphire Exchange System will not disseminate a locked or crossed market unless such dissemination is done in accordance with Exchange Rules or a National Market System plan (NMS) governing locked and crossed markets. When the System receives a non-routable order that would lock or cross an away market, the System will display the non-routable order at a price that is one MPV away from the current opposite side NBBO and book the order at an undisplayed price that will lock the current opposite side NBBO. Should the NBBO price change to a price that is inferior to the price of the undisplayed booked order, the order's undisplayed price will continuously re-price to lock the new NBBO, and the order's displayed price will continuously re-price one MPV away from the new NBBO until the order reaches its MIAX Sapphire Variable Price Protection limit or its original limit price, is fully executed, or is cancelled.

11. MIAX Sapphire Member Firm Portal

The Member Firm Portal (MFP) is a member-facing application available via the internet. The MFP provides Members with the tools needed to search for trade data, apply same-side clearing trade corrections and perform market maker symbol self-assignments.

The Member Firm Portal is available for search queries at all times. The trade information clearing correction function is available from 09:30 AM ET until System shutdown which occurs at approximately 5:15 PM ET. Market maker symbol self-assignments entered via the Member Firm Portal prior to 6:00 PM are effective for the following trading day. Use of the Member Firm Portal for symbol assignment changes is mandatory. Same day self-assignments are not available through the Member Firm Portal.

Additional information regarding the Member Firm Portal can be obtained by contacting MIAX Sapphire Trading Operations at: TradingOperations@MIAXGlobal.com.

12. MIAX Sapphire Rules

A copy of the complete MIAX Sapphire Rulebook is available in the Regulatory Section of the Exchange's website: MIAX Global Options Exchange Rulebooks.

Throughout this User Manual reference is made to MIAX Sapphire Rules, in the event of any conflict between a description or discussion of a Rule in this User Manual and the Rules set forth in the MIAX Sapphire Rulebook, the Rulebook shall prevail.

13. MIAX Sapphire Fees

13.01 MIAX Sapphire Fee Schedule

MIAX Sapphire operates under a taker-maker fee structure in which the Exchange generally pays its Members a rebate to remove liquidity and generally charges Members a fee to provide liquidity. MIAX Sapphire may choose to apply volume discounts or other incentives to some of its transaction fees.

MIAX Sapphire also charges membership fees, application fees, market data fees, connectivity fees, bandwidth fees and testing fees. A link to a copy of the complete MIAX Sapphire Fee Schedule is available on the Exchange's website under the Fee Summary tab: MIAX Global Options Exchange Fees.

14. Nullification and Adjustment of Options Transactions including Obvious Errors Policy

The Exchange's Erroneous Execution Policy is set forth in MIAX Sapphire Rule 521 and 522.

Participants who believe they may have been a party to an erroneous transaction are encouraged to contact MIAX Sapphire Regulation immediately at: MIAX Global Options Exchange Regulatory Forms. MIAX Sapphire Regulatory Control (MRC) will review the transaction to determine whether, in fact, the transaction was the result of an obvious or catastrophic error. Upon final Exchange official action, the MRC, in conjunction with the MIAX Sapphire Operations Center, where appropriate, will promptly notify both parties to the trade and will either nullify or adjust the execution price of the transaction if it qualifies as an obvious or catastrophic error. A Member may appeal the decision by Exchange officials to the Chief Regulatory Officer (CRO).

15. Hours of Operation

15.01 Normal Trading Hours

Pre-Opening System Availability   7:00 am to 9:30 a.m. Eastern Time
Regular Trading Session (Equity options)   9:30 am to 4:00 p.m. Eastern Time
Regular Trading Session (Defined list of ETF options)   9:30 am to 4:15 p.m. Eastern Time

Normal hours of operation can be found on the Exchange's website: MIAX Global Options Exchange Trade Hours and Holiday Calendar.

15.02 Holiday Schedule and Altered Trading Hours

The Holiday Schedule and any deviations from the Normal Trading Hours listed above can be found on the Exchange's website: MIAX Global Options Exchange Trade Hours and Holiday Calendar.

16. Contact MIAX Sapphire

Miami International Holdings, Inc.

Address: 7 Roszel Road, Suite 1A
                        Princeton, NJ 08540
Phone: 609-897-7300

Area of Interest	Department	Email
Investor Inquiries	Investor Relations	Investor.Relations@MIAXGlobal.com
Business Development	Business Development	info@MIAXGlobal.com
Regulatory	Regulatory	Regulatory@MIAXGlobal.com Primary: 609-897-7309
Membership	Membership	Membership@MIAXGlobal.com
Market Operations	Trading Operations	TradingOperations@MIAXGlobal.com Primary: 609-897-7302
Connectivity	Trading Operations	TradingOperations@MIAXGlobal.com Primary: 609-897-7302
Certification Testing	Trading Operations	TradingOperations@MIAXGlobal.com Primary: 609-897-7302
Interface Development	Trading Operations	TradingOperations@MIAXGlobal.com Primary: 609-897-7302
Market Data Requests	Market Data	MarketData@MIAXGlobal.com
Market Data Usage Reporting	Market Data	MarketDataUsage@MIAXGlobal.com
Listings	Listings	Listings@MIAXGlobal.com Primary: 609-897-7308
Sales and marketing	Business Development	Sales@MIAXGlobal.com Primary: 609-897-8177
Billing	Billing	Billing@MIAXGlobal.com

17. Appendix A, Revision History

Date	Version	Description
12/11/2023	1.0.0	Modified: - General User Manual upgrade

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