

MEMX OPTIONS EXCHANGES USER MANUAL

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Introduction

This document provides information about the options trading platforms operated by MEMX LLC, MEMX Options and MX2 Options (the "MEMX Options Exchanges," the "Systems," or the "Exchanges") and MEMX Execution Services LLC ("MEMX Execution Services"), which is the outbound routing broker for the Exchanges. The Exchanges and MEMX Execution Services are both subsidiaries of MEMX Holdings LLC.

The MEMX Options Exchanges User Manual summarizes various operations and rules of the Exchanges. The complete and official Rulebooks for MEMX Options and MX2 Options are available at https://info.memxtrading.com/memx-rules/. In the event of a conflict between the User Manual and the information set forth in the official Rulebooks, the Rulebooks shall prevail. Information contained in this document is subject to change at any time.

Trading System

Each Exchange is a fully automated electronic limit order book for orders to buy and sell options with a continuous matching function. The Exchanges also offer routing functionality through MEMX Execution Services with connectivity to all venues displaying Protected Quotations, as described in Exchange Rule 21.9. Members of the Exchanges and their Sponsored Participants (collectively, "Users") connect to the System via FIX and/or binary order entry protocols to electronically send orders to buy and sell securities traded on the Exchanges. Users may also send orders through a Service Bureau.

Each Exchange was built with a focus on performance, reliability, and security. The Systems are distributed across a network of servers to maximize throughput and determinism, minimize latency and bottlenecks, provide high availability and fault tolerance, and allow for simplified scalability. Additional servers can be added to easily expand system functionality and capacity as required in accordance with the MEMX Capacity Management Plan. Further, security has been architected and designed into each System as a primary concern to effectively manage access, authorization, and authentication to Exchange services.

At the core of each System is the matching engine complex, which compares the limit price of an incoming order with the price of resting (i.e., booked) Limit orders on the MEMX or MX2 Options Book and the price of other markets' displayed quotes. If the order is immediately marketable against the MEMX or MX2 Options Book, and there is interest available on the MEMX or MX2 Options Book at a price equal to or better than the consolidated quote, an immediate match is made and communicated back to Users. If another market is displaying a better quote, the order will be handled depending on the User's instructions (e.g., forwarded to the other market to attempt to fill the order, posted to the MEMX or MX2 Options Book, canceled). The priority of how orders are ranked on each Exchange is discussed in more detail below and described in Rule 21.8 of the applicable Exchange Rulebook.

Users or their clearing firms can create and provision FIX Drop Copy sessions on the MEMX User Portal. Sessions can be configured to filter information by OCC Clearing numbers, Executing Firm ID(s) ("EFID(s)"), and/or Account(s) and include trade information.

Data Centers and Co-Location

The Exchanges' primary trading platform is located in a third-party data center facility in New Jersey. It is accessible to Members, Sponsored Participants, Service Bureaus, Data Recipients (collectively "Participants") and Extranet Providers.

The Exchanges' secondary data center is located in a third-party data center facility in Chicago, IL. Connectivity to the secondary data center, while not a mandatory requirement for all Participants, is recommended to minimize service disruption in the event of an issue at the primary trading platform data center.

The MEMX Options Exchanges offer co-location services in both the primary and secondary data centers. This provides participants with the fairest and fastest access to Exchange services, reduced network complexity, and flexible power and connectivity options. Connectivity to each Exchange in the primary data center for both order entry and market data dissemination is equalized for all co-located participants in the New Jersey location. Participants will be able to connect to order entry systems and receive market data in both the primary and secondary data centers.

The MEMX Options Exchanges provide redundant physical network connectivity in both the primary and secondary data centers. This diverse set of network connections, the "A" and "B" feeds, provide high availability and fault tolerance to all co-located participants. To achieve this resiliency, MEMX requires participants to connect to both the "A" and "B" feeds. To further increase reliability, the network configuration used for the "A" and "B" feeds are diverse resulting in the "A" feed being produced, on average, before the "B" feed.

All data centers the Exchanges use are, at a minimum, Tier 3 compliant and provide a high level of security and availability through redundant and reliable environmental control systems (redundant power supplies, on-site backup generators, cooling systems, etc.). Data center personnel are available 24/7 to maintain and service the System.

Connectivity and Access

The MEMX Options Exchanges support the following connectivity methods in both its primary and secondary data centers:

- Co-Location Cross-Connect: Participants may request a cross-connect from the Participant's point-of-presence to each of the Exchanges.
- Extranet Providers: Participants may connect to each of the Exchanges via an approved Extranet Provider. A list of available providers can be found on the MEMX Options User Portal.
- Private-Line Ethernet: Participants may connect via telecommunications carriers providing a circuit extension from a location outside the Exchanges' primary or secondary data center.

Participants are responsible for choosing and implementing connectivity to the primary and secondary data center.

For more detailed information and instructions on how to connect to MEMX, please refer to the MEMX Connectivity Specification.

Users are permitted to electronically access the order entry facility of the Exchanges, MEMO (MEMbers Orders) for Options, using the Classic ASCII FIX protocol and/or the native binary protocol. A common data schema is used for both protocols to allow for easier transition between the two. Message framing and encoding is also standardized and unified across protocols. MEMO for Options SBE, the native binary protocol for order entry, is an application layer message standard used to facilitate the electronic communication of information between each Exchange and its participants. MEMO for Options allows participants to submit, modify, and cancel orders, receive acknowledgements and execution reports, and be notified of exchange trading status. Refer to the MEMO for Options SBE Protocol Specification for more details. The Exchange also supports order entry via the FIX (tag/value) protocol. Please refer to the MEMO for Options FIX Protocol Specification for more details. Note, MEMX Options supports bulk quote entry, as described further below, via the MEMO for Options SBE protocol. Bulk quote entry is not supported by the MEMO for Options FIX protocol.

Risk Controls

Both the MEMO for Options FIX and MEMO for Options SBE order entry protocols contain an integrated pre-trade risk management service that processes all incoming order information against a mandatory set of risk controls designed to help prevent erroneous orders from passing through to the matching engine for execution. These controls are dynamically configurable by Exchange participants and can be assigned to an individual application session, i.e., a single FIX or MEMO session, or an aggregated set of application sessions using user defined risk control identifiers. Further, risk controls can be established for a single underlying for a single EFID, across all underlyings for a single EFID, and/or across a custom group of orders designated by a custom identifier. The time period(s) applicable to risk control settings is also configurable by Exchange participants, including the ability to set risk control parameters applicable to the entire trading day. Refer to the MEMX Risk Control for US Options Specification for a list of risk controls and detailed information on how to configure and apply these controls.

In addition, the MEMX Options Exchanges provide the ability for a Participant to configure an Active Risk Control to manage the number of executed contracts. Each Exchange manages an Active Risk Counter, which is incremented by the number of contracts executed and tracked against a Participant defined threshold. The counter is decremented upon a positive electronic confirmation from the Participant via the Options Risk Control protocol. Refer to the MEMX Risk Control for US Options Specification for detailed information on how to configure this control.

MEMO for Options SBE supports the canceling of an order via any active Participant session regardless of the session that the original order was transmitted on. Additionally, this flexibility allows each Exchange to offer a batch cancel function, via any active session, which can be used by a Participant to cancel all or a subset of its orders in one or more symbols with a single command to the applicable Exchange. Participants can also specify a “lock out” command on their mass cancels which will prevent further orders from being accepted until the participant sends a message to lift the lock out.

Hours of Trading and Market Session

Orders may be entered into the System during the Market Session (from 9:30 a.m. until 4:00 p.m. Eastern Time except for options on Fund Shares, options on exchange-traded notes including Index-Linked Securities, and Index Options, which will be open until 4:15 p.m Eastern Time). The Exchanges will not accept orders prior to the Market Session.

Session	Start and End Time (all times are Eastern Time)
Market Session	9:30 a.m. to 4:00[1] p.m.

Order Types and Modifiers

As summarized in the table below, the MEMX Options Exchanges accept Market orders and Limit orders during the Market Session. Orders will be accepted with a size of at least one (1) contract up to a maximum of 999,999 contracts.

The following Time-in-Force (TIF) instructions are available that determine the period(s) of time during which an order is available for potential execution:

- Immediate-Or-Cancel (IOC): An order with this Time-In-Force instruction will be executed in whole or in part upon entry, otherwise the order will be canceled.
- Day: An order with this Time-In-Force instruction is eligible for execution during the Market Session. Day orders remaining on the MEMX Options or MX2 Options Book at the end of the Market Session will be canceled.

Order types may be designated with a variety of modifiers such as Intermarket Sweep Orders (ISOs), Post Only, Book Only, and Price Adjust. Additional details on these modifiers are set forth below and in the applicable Exchange Rulebook.

- Intermarket Sweep Orders (ISO): An order that allows MEMX/MX2 Options to execute at its BBO regardless of prices at other options market centers without violating the Options Order Protection Plan. It is the responsibility of the User entering the order to comply with the requirements of the Options Order Protection Plan relating to ISOs.
- Post Only: Designates that the order is to be posted on the MEMX/MX2 Options Book to add liquidity only and cannot be routed to another trading venue.
- Book Only: Designates that the order is to be executed only on the MEMX/MX2 Options Book and cannot be routed to another trading venue.
- Price Adjust: Designates that an order that would otherwise violate the order protection and trade through restrictions of the Options Order Protection and Locked/Crossed Market Plan will be ranked and priced to one Minimum Price Variation above/below the current NBB/NBO.

[1] Each MEMX Options Exchange will be open until 4:00 p.m. except for options on Fund Shares, options on exchange-traded notes including Index-Linked Securities, and Index Options, which will be open until 4:15 p.m.

Order Type	Trading Hours	Time-In-Force	Size	Routing/ Posting	ISO	Price Adjust
Market	9:30 a.m. through 4:15[3] p.m. ET	IOC, Day	1 to 999,999 contracts	Route, Book Only	N/A	N/A
Limit	9:30 a.m. through 4:15[3] p.m. ET	IOC, Day	1 to 999,999 contracts	Route, Book Only, Post Only	ISO (not allowed on bulk messages)	Entry, Single, Continuous

Refer to Chapter 21 of each Exchange Rulebook for detailed information regarding order types, modifiers and TIF instructions.

Bulk Messages

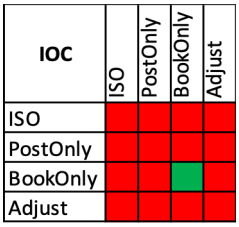
Each MEMX Options Exchange supports bulk quote entry via MEMO for Options SBE. Bulk messages allow a User to enter, modify, or cancel several bids and offers in a single message for a given underlying. Only participants qualified as Market Makers shall be allowed to submit bulk messages. Bulk messages can have a Time-in-Force of Day or IOC and are not eligible for routing. A Market Maker with an appointment in a specified options class must designate a bulk message for that class as Post Only or Book Only and a non-appointed Market Maker must designate a bulk message for that class as Post Only. For more information regarding bulk messaging, see the MEMO for Options Protocol Specification.

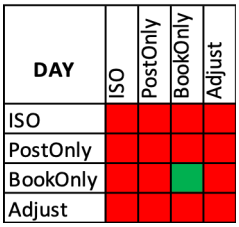
Order Handling

During operating hours, the Exchanges will accept incoming Market orders when a valid NBBO is available and cancel such orders otherwise. Limit orders will be accepted with or without a valid NBBO. The following sections describe the order handling behavior for the different order types, instructions, and modifiers.

Market Orders

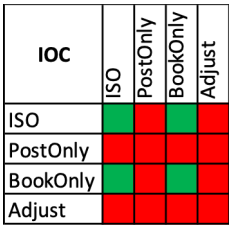
TIF	Modifiers	Market Session
IOC	ISO	Invalid Modifier
	POST ONLY	Invalid Modifier
	BOOK ONLY	Accept & Process
	PRICE ADJUST	Invalid Modifier
DAY	ISO	Invalid Modifier
	POST ONLY	Invalid Modifier
	BOOK ONLY	Accept & Process
	PRICE ADJUST	Invalid Modifier

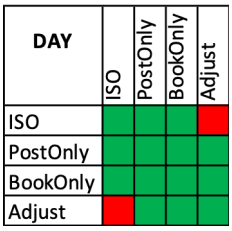




Limit Orders

TIF	Modifiers	Market Session
IOC	ISO	Accept & Process
	POST ONLY	Invalid Modifier
	BOOK ONLY	Accept & Process
	PRICE ADJUST	Invalid Modifier
DAY	ISO	Accept & Process (1)
	POST ONLY	Accept & Process
	BOOK ONLY	Accept & Process
	PRICE ADJUST	Accept & Process (1)





(1) These modifiers are mutually exclusive.

Priority of Orders

MEMX Options

Orders are ranked and maintained in the MEMX Options Book based on the Price/Time priority as follows:

- Price. The highest-priced order to buy (lowest-priced order to sell) has priority over all other orders to buy (sell) in all cases.
- Time. Equally priced trading interest shall be ranked in the order it was received.

Any modification to an order other than a decrease in size shall result in a loss of priority and a new timestamp being applied by MEMX Options. If an order is executed against an incoming order for less than its full size, the remaining size shall retain its original price time priority.

MX2 Options

MX2 Options supports a pro rata execution model, whereby resting orders are prioritized according to price. If there are two or more quotes or orders at the best price then the contracts are allocated proportionally according to size in a pro-rata fashion. The executable quantity is allocated to the nearest whole number, with fractions 1/2 or greater rounded up and fractions less than 1/2 rounded down.

MX2 Options may also apply, on a class-by-class basis, certain priority overlays, as follows:

- Priority Customer. When this priority overlay is in effect, the highest bid and lowest offer shall have priority except that Priority Customer Orders shall have priority over all non-Customer orders at the same price, and if there are two or more Priority Customer orders at the same price, they will be filled in time priority.
- Preferred Market Maker ("PMM") - May only be in effect if the Priority Customer overlay is in effect as well. An Options Member may direct Priority Customer orders ("Preferred Orders") to a designated PMM, who must be registered with the Exchange as a Market Maker in the relevant option class at the time of receipt of the Preferred Order to receive the PMM participant entitlement. The PMM participation entitlement shall only apply to any remaining balance after Priority Customers have been satisfied. The PMM participation entitlements are as follows:
    - For each incoming Preferred Order to the PMM, if the PMM is quoting at the NBBO, it will be allocated the greater of: (i) the proportion of the total size at the NBBO represented by the size of its quote, or (ii) sixty percent (60%) of the contracts to be allocated if there is only one (1) other Market Maker quote or non-Customer order at the NBBO, or forty percent (40%) if there are two (2) or more other Market Maker quotes and/or non-Customer orders at the NBBO.
- Lead Market Maker ("LMM") - May only be in effect if the Priority Customer overlay is also in effect. An LMM may be appointed by the Exchange in options classes in accordance with Rule 22.2. The LMM participant entitlements shall only apply to any remaining balance after Priority Customer orders have been satisfied. The LMM participation entitlements are as follows:
    - If the LMM is quoting at the NBBO, it will be allocated the greater of: (i) the proportion of the total size at the NBBO represented by the size of its quote, or (ii) sixty percent (60%) of the contracts to be allocated if there is only one (1) other Market Maker quote or non-Customer order at the NBBO, or forty percent (40%) if there are two (2) or more other Market Maker quotes and/or non-Customer orders at the NBBO.
    - LMM Small Order Entitlement. If the LMM is quoting at the NBBO, small size orders (5 contracts or less) will be allocated in full to the LMM.

If there are both PMM and LMM quotes at the NBBO and an incoming order is preferred to the PMM, the PMM's participation entitlement will supersede the LMM's participation and small order entitlement.

Routing to Away Markets

Users have the option to use the Exchanges' affiliated broker-dealer, MEMX Execution Services LLC, to route orders to markets other than the Exchange. ISO, Book Only and Post Only orders are not routed to other markets. A proprietary process is used to determine the System routing table, which determines the order in which the System routes orders to specific trading venues. MEMX Execution Services performs a variety of automated risk checks, including erroneous and duplicate orders checks, before routing to other markets, in compliance with Rule 15c3-5. The Exchange uses OPRA data for the handling, execution, and routing of orders.

Data Products

As described in the each MEMX Options Exchanges' Rules, the Exchanges offer several MEMOIR (MEMber Order Information Record) for Options data products:

- MEMOIR Options Depth/MX2 MEMOIR Options Depth (Depth of Book Quote and Last Sale)
- MEMOIR Options Top/MEMOIR MX2 Options Top (Top of Book Quote and Last Sale)
- MEMOIR Historical Data (Prior day versions of MEMOIR Depth and MEMOIR Top)

MEMOIR Options Depth is the MEMX Options/MX2 Options integral data product. The Exchanges use the MEMOIR Options Depth data product to derive the MEMOIR Options Top data product.

The Exchanges also offer a DROP feed that contains information regarding an individual Exchange participant's activity on the Exchange for clearing, risk management and other purposes. The DROP feed is only available to the Exchange participant to whom such activity relates, and any other recipient authorized by that Exchange participant (e.g., the Clearing Member that clears for such participant).

The Exchange's real-time market data is electronically available directly from MEMX via APIs defined in the Exchange's specifications or via a range of market data vendors. Additional information about data products, agreements and specifications are available on the Exchange's website, www.memxtrading.com

Contact MEMX

Website	www.memx.com
Main Telephone Number	201.331.7900
Member Experience (Sales & Support)	833.415.MEMX and memberx@memx.com
Market Operations/Connectivity Requests	833.415.MOPS and mops@memx.com
Regulation/ Compliance	regulation@memx.com membership@memx.com

REVISION HISTORY

Version	Date	Change
1.0	May 16, 2023	Initial Document
2.0	September 4, 2026	Added MX2 Options