OTC Link MOON FIX Specification

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1   Introduction

OTC Link MOON allows subscribers to submit orders that will provide and remove liquidity on the OTC Link MOON's order book for NMS securities, during the overnight trading session.

This OTC FIX gateway service utilizes the FIX 4.2 protocol standard as defined by www.fixprotocol.org, with some exclusive custom extensions.

Connection to the OTC FIX gateway is typically made through one or more extranet vendors. Please contact techsupport@otcmarkets.com for latest connectivity information.

OTC FIX gateways are configured to talk to a single service per port. Customers who wish to send and receive messages for different services should contact OTC Markets to provision at least one port for every service.

If the connection to an OTC FIX session is lost and reestablished later in the day, OTC will deliver all the queued outbound traffic that would have been received if the connection had not been lost. However, when a connection is initially established, even if it's later in the day, only messages generated from time of connection will be delivered. I.e., Messages queued prior to initial connection will not be delivered.

2   Business Rules

2.1   Hours of Operation

IOC, overnight DAY, overnight extended Day (GTX; a.k.a. DAYX), and overnight modified Good Till Cancel order (GTC) orders can be entered within the overnight PN trading session 7:30pm to 4:00am; from Sunday to Thursday. They will be executable from 8:00pm to 4:00am; from Sunday to Thursday. All OTC Link MOON orders received outside this session are rejected.

DAY and GTX orders expire at the end of the overnight trading session. They will include tags 39 & 150 = 3 in their execution reports. GTC orders are canceled by the system at the end of the overnight trading session. They will include tags 39 & 150 = 4 in their execution reports.

When an order contains TIF tag 59 = 5 (GTX) or 1 (GTC), the following fields are required:
- NoTradingSessions tag 386 =1
- TradingSessionID tag 336 = PN

2.2   Data Types

2.2.1   Timestamps

All FIX timestamps are in UTC format as per the FIX standard format YYYYMMDD-HH:MM:SS.sss; where sss = milliseconds. Members are expected to synchronize their clocks with an external time source.

2.2.2   Price

Order entry price precision is limited to up to 2 decimal places when priced >= $1.00, and up to 4 decimal places when priced < $1.00. However, since orders can execute at a midpoint, executions can occur at 3 decimal places when priced >= $1.00, and at 5 decimal places when priced < $1.00.

2.3   Self Trade Prevention

Self trade prevention (a.k.a. anti-internalization) can be enabled on an order basis, with execution instruction Tag 18 = 'a'. Firms can optionally be configured for self trade prevention for all their orders across the board, or just all their orders on a given FIX session.

If the firm is configured for self trade prevention for all their orders across the board, or just all their orders on a given FIX session, Tag 18 = 'a' does not need to be entered on any orders and will be ignored. If the firm is NOT configured for self trade prevention for all their orders across the board, or just all their orders on a given FIX session, Tag 18 = 'a' is required on both the resting and incoming orders. If only one or neither order includes Tag 18 ='a', the orders can match.

When enabled, the following cancel / reduce method will be used:

- If the size of the incoming order is less than the resting order, the incoming order will be canceled, and the resting order will be reduced by the size of the canceled incoming order.
- If the size of the incoming order is greater than the resting order, the resting order will be canceled, and the incoming order will be reduced by the size of the canceled resting order.
- If the size of the incoming order is the same as the resting order, both the incoming order and the resting order will be canceled.

When an order is reduced due to self trade prevention, the subscriber will receive a Restatement execution report (tag 150 = D, tag 378 = 5).

2.4   Anonymous

By default, DAY, GTX and GTC orders are displayed via the OTC Link MOON multicast feed with the MPID of the entering firm. An optional flag can be added to the order to have it display anonymously with the MOON MPID.

2.5   IOC after Cancel / Replace

Orders can optionally include the IOC after Cancel / Replace execution instruction Tag 18 = 'x'. If included, the cancel / replaced order will be treated as if its TIF was IOC. After any internal executions, the remaining quantity will be canceled back.

2.6   Route to External Marketplaces

Orders can optionally include the Route Outside Normal Market Hours execution instruction Tag 18 = 'n'. If at time of order entry, an external marketplace has a superior price to a resting OTC Link MOON order, a marketable incoming order will be routed to the external marketplace, for a quantity equal to the external marketplace's Top Of Book size. The price will be the external marketplace's Top of Book price.

2.7   Intermarket Sweep Orders (ISO)

Orders can optionally include the ISO execution instruction Tag 18 = 'f'. ISO orders will not be routed to external marketplaces, and can trade through those marketplaces. ISO conveys that the firm has taken responsibility for sending orders directly to the external marketplaces to access their better priced liquidity. ISO orders cannot trade through posted OTC Link MOON orders.

Since an ISO order is treated as IOC, TIF 59 will be superseded by the ISO execution instruction. The ISO execution instruction also supersedes all other execution instructions.

2.8   Route ISO

Orders can optionally include the Route ISO execution instruction Tag 18 = 'o'. Like ISO orders, Route ISO orders can internally trade through external marketplaces. But unlike ISO orders, after internal trades, any remaining quantity can route to external marketplaces. If quantity remains after routing, IOC orders will be canceled; DAY/GTX/GTC orders will post.

2.9   Route IOC

Typically, IOC orders cannot be routed to an external marketplace. However, orders can optionally include the Route IOC execution instruction Tag 18 = 'r'.

2.10 Post Only on Order Entry

Orders can optionally include the Post Only execution instruction Tag 18 = '6'. When these orders are entered during the active trading session, they will not remove liquidity (i.e., match against posted OTC Link MOON orders or routed to external marketplaces) at the time the order is entered. They can only post to OTC Link MOON. After the orders post, orders can later remove liquidity due to changes in the market.

Note this slightly modifies the traditional Post Only or Participate Don't Initiate Tag 18 = 6, which prohibits the order from ever removing liquidity.

2.11 Allow Price Sliding

Orders can optionally include the Allow Price Sliding execution instruction Tag 18 = 'S'. These orders will behave like 'Post Only on Order Entry' orders, but will be displayed one tick[1] away from the opposite inside (i.e., one tick higher than the CBB for a sell order or one tick lower than the CBO for a buy order), if its limit price L/C's the opposite CBBO inside.

2.12 When to Refresh a Reserve Order

Orders that include a MaxFloor value in Tag 111 (i.e., reserve orders) can optionally include custom RefreshBelowShow Tag 9111 to indicate when to refresh a reserve order. When set to 'Y', the order will be refreshed to its entered MaxFloor when its display size drops below MaxFloor. When set to 'N', the order will be refreshed to its entered MaxFloor when its display size drops below minimum quote size (which can be less than or equal to MaxFloor).

2.13 Cancel / Replace and Partial Cancel

DAY, GTX and GTC orders can be modified after they are posted to the book. Currently, only order price, quantity and MaxFloor can be modified. Any modification will cause order to lose time priority.

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[1] One tick = 0.0001, when inside price < $1.00. One tick = 0.01, when inside price >= $1.00.

2.14 Bulk Cancel

Subscribers can cancel orders in bulk for either a single security or all securities by entering OrderID Tag 37 = -999. If the symbol is included in the cancel message, only orders in that symbol will be canceled. If no symbol is included, all the subscriber's orders will be canceled. Individual out messages will be sent to the subscriber for each order canceled.

2.15 Liquidity Indicator

On Partial and Full fill execution reports, LiquidityIndicator Tag 9730 will indicate if subscriber added or removed liquidity on the execution.

2.16 Closing Price Check

For selected securities, OTC Link MOON provides a risk control that rejects an overnight order that is priced a certain percentage above or below the security's previous closing price (please contact tradingservices@otcmarkets.com for price percentage details).

3   FIX Messages

3.1   Logon Session Profile

A FIX session includes a client feature profile utilizing Tags 95 and 96 to the Logon Message. Utilizing this profile, subscribers can enable and disable session cancel on disconnect.

Tag ID	Description	Values
95	Number of Feature Position Fields to Read	1
96	Cancel on Disconnect	Valid values: 0 = Do not enable Cancel on Disconnect for the session 1 = Enable Cancel on Disconnect for the session

3.2   Standard Message Header

Tag ID	Tag Name	Required	Description
8	BeginString	Yes	FIX.4.2 Must be first field in message.
9	BodyLength	Yes	Length of message following BodyLength field up to and including the delimiter preceding the CheckSum field. Must be second field in message.
34	MesSeqNum	Yes	Sequential sequence number for session.
35	MsgType	Yes	Must be third field in message. 0 = HeartBeat 1 = TestRequest 2 = Resend/Request 3 = Reject 4 = SequenceReset 5 = Logout 8 = ExecutionReport 9 = OrderCancelReject

			A = Logon D = NewOrderSingle F = OrderCancelRequest G = OrderCancelReplaceRequest
49	SenderCompID	Yes	Standard FIX session IDs. Assigned per-connection
56	TargetCompID	Yes	Standard FIX session IDs. Assigned per-connection
52	SendingTime	Yes	Time in UTC format YYYYMMDD-HH:MM:SS.sss; where sss = milliseconds
115	OnBehalfOfCompId	Yes	NSSC MPID identifying the client sending order
116	OnBehalfOfSubID	No	Trader sending message
128	DeliverToCompId	Yes	Identifies subscriber on messages from OTC Link MOON, and 'MOON' on messages to OTC Link MOON.
129	DeliverToSubId	No	Identifies trader on messages from OTC Link MOON.

3.3 Standard Message Trailer

Tag ID	Tag Name	Description
10	CheckSum	Modulo 256 checksum of all characters in message up to and including the delimiter preceding the CheckSum field. Three digits with leading zeroes if necessary.

3.4 Automatic Cancel on Disconnect

A FIX session can be configured to automatically cancel all open orders when a disconnect is detected between your firm and OTC Link MOON. Note that orders executed just prior to the disconnect will not be fully canceled. Execution Reports for executed orders and automatically canceled orders will be available upon reconnection.

3.5 Service Bureau Configuration

Service Bureaus require special configuration. OnBehalfOfCompId must be set for New Order, Cancel and Cancel/Replace messages sent to OTC Link MOON. Orders with an unknown OnBehalfOfCompId will be rejected. ClOrdId values are required to be unique only within a given OnBehalfOfCompId. Execution Report and Cancel Reject messages sent by OTC Link MOON will have the DeliverToCompId set. Orders must be cancelled or replaced using the same OnBehalfOfCompId as was sent on the Order.

3.6 FIX Session Throttle

In order to ensure a session provides more predictable performance, while also preventing it from affecting the performance of other sessions on the same gateway, a session can be configured to throttle inbound messages; typically, 1000 total inbound messages read per second.

After the 1000th message is received within a rolling 1 second, any subsequent message is buffered until that second is completed. The application then sequentially processes queued messages, carrying over to further seconds every additional 1000 messages in the buffer. In this manner, if 5001 messages are sent to the port in under a second, the last one will not be processed by the gateway until the 5th second.

Outbound message rate from the gateway is not inhibited.

3.7 Messages Submitted to OTC Link MOON

3.7.1 New Order Single

A New Order is initiated by sending a FIX NewOrder (35=D) message to the OTC Link MOON.

Tag ID	Tag Name	Required	Description
35	MsgType	Yes	Should be "D"
1	Account	No	Reflected back on Execution Reports associated with this order. Can be used for clearing, max 40 characters.
11	ClOrdID	Yes	Unique for all orders sent today, max 40 characters.
18	ExecInst *	No	Valid values (space delimited): 1 = Not Held (accepted, but not processed) f = ISO 6 = Post Only on Order Entry r = Route IOC a = Self Trade Prevention o = Route ISO n = Route Outside Normal Market Hours S = Allow Price Sliding x = IOC after Cancel / Replace
38	OrderQty	Yes	Number of shares, max value of 99,999,999
40	OrdType	Yes	Valid value: 2 = Limit
44	Price	Yes	Price of order, max allowed price of $99,999,999
47	OrderCapacity	Yes	Valid values: A = Agency P = Principal R = Riskless Principal
54	Side	Yes	Valid values: 1 = Buy 2 = Sell 5 = Sell short
55	Symbol	Yes	This field must contain a valid symbol in upper case lettering, max 14 characters.
65	SymbolSfx	No	Optional Symbol Suffix
59	TimeInForce	Yes	Valid values: 3 = IOC 5 = GTX 1 = GTC 0 = DAY
111	MaxFloor	No	Portion of OrderQty to display. The balance is reserve. Must be >= minimum quote size and in round lot intervals.
114	LocateReqd	No	Valid values: Y = Yes N = No Required to be N for sell short orders. Rejected if Y or absent.
386	NoTradingSessions	Yes	Valid value 1
336	TradingSessionID	Yes	PN = 8:00pm – 4:00am; Sunday to Thursday
5700	LocateBroker	No	Locate MPID

9111	RefreshBelowShow	No	Flag indicating when reserve order will refresh; below minimum quote size or below MaxFloor (Show size). Valid values: Y = Below MaxFloor N = Below Minimum Quote Size (Default)
9700	Anonymous	No	Flag indicating order will be displayed as 'MOON'. Y = Display with 'MOON' MPID N = Display with firm MPID (Default)

* Note: Since an ISO order is treated as IOC, TIF 59 will be superseded by the ISO execution instruction. The ISO ExecInst also supersedes all other execution instructions.

3.7.2   Order Cancel Request
While an order is still open, a cancel order can be requested by sending a FIX CancelOrder (35=F) message to OTC Link MOON. In addition to requirements for the standard FIX message header, only the following fields are used for an Order Cancel Request. Any other fields specified in the message are ignored.

Tag ID	Tag Name	Required	Description
35	MsgType	Yes	Should be "F"
1	Account	No	Used on MPID Bulk Cancel Only.
11	ClOrdID	Yes	This field contains the ID assigned to the message by your firm. A unique identifier, max 40 characters.
18	ExecInst	No	If sent, this value must match the original order.
37	OrderID	No	If present, the value must exactly match the OrderID OTC Link MOON assigns to the order. A value of -999 will indicate Bulk Cancel.
38	OrderQty	No	Ignored
40	OrdType	No	Ignored
41	OrigClOrdID	Yes	This value must match the ClOrdID of the order or replaced order being cancelled. This value is the ClOrdID of the most current successful change. If the order was not changed or replaced, then this will be the ClOrdID of the original order. This field is not required for Bulk Cancel requests.
44	Price	No	Ignored
47	OrderCapacity	No	Ignored
54	Side	No	Ignored
55	Symbol	No	If OrderID Tag 37 = -999, Symbol will indicate cancel only orders in that symbol. Leaving Symbol blank will cancel all orders in all symbols.
65	SymbolSfx	No	Optional Symbol Suffix
59	TimeInForce	No	Ignored
111	MaxFloor	No	Ignored
5700	LocateBroker	No	Ignored
9111	RefreshBelowShow	No	Ignored
9700	Anonymous	No	Ignored

3.7.3   Order Cancel / Replace Request
While an order is still open, a cancel / replace order can be requested by sending a FIX CancelReplaceOrder (35=G) message to OTC Link MOON. In addition to requirements for the standard FIX message header, only the following fields are used for an Order Cancel/Replace (Change) Request. Any other fields specified in the message are ignored. Any change will cause order to lose time priority.

Tag ID	Tag Name	Required	Description
35	MsgType	Yes	Should be "G"
11	ClOrdID	Yes	This field contains the ID assigned to the message by your firm. A unique identifier, max 40 characters.
18	ExecInst	No	If sent, this value must match the original order.
37	OrderID	No	If present, the value must exactly match the OrderID OTC Link MOON assigns to the order.
38	OrderQty	Yes	This value can be changed. Number of shares, max value of 99,999,999
40	OrdType	Yes	Must be the same as the original order.
41	OrigClOrdID	Yes	This value must match the ClOrdID of the order or replaced order being cancel / replaced. This value is the ClOrdID of the most current successful change. If the order was not changed or replaced, then this will be the ClOrdID of the original order.
44	Price	Yes	This value can be changed. Price of order, max allowed price of $99,999,999
47	OrderCapacity	No	If sent, this value must match the original order.
54	Side	Yes	Must be the same as the original order.
55	Symbol	Yes	Must be the same as the original order.
65	SymbolSfx	No	Optional Symbol Suffix
59	TimeInForce	No	If sent, this value must match the original order.
111	MaxFloor	No	This value can be changed. Portion of OrderQty to display. The balance is reserve. MaxFloor must be >= minimum quote size
116	OnBehalfOfSubID	No	This value can be changed. Trader sending message.
386	NoTradingSessions	No	If sent, this value must match the original order.
336	TradingSessionID	No	If sent, this value must match the original order.
5700	LocateBroker	No	If sent, this value must match the original order.
9111	RefreshBelowShow	No	If sent, this value must match the original order.
9700	Anonymous	No	If sent, this value must match the original order.

3.8   Messages Received from OTC Link MOON

3.8.1   Execution Report

The disposition of entered orders (e.g., acknowledgements, rejects, cancels, partial fills, fills, etc.) are returned from OTC Link MOON using a FIX ExecutionReport (35 = 8) message. In addition to requirements for the standard FIX message header, the following fields will be specified on these messages.

Tag ID	Tag Name	Required	Description
35	MsgType	Yes	Will be "8"
1	Account	No	Echoed back from submitted. Can be used for clearing.
6	AvgPx	Yes	Indicates Average Price of fills on order
11	ClOrdID	Yes	Echoed back from submitted
14	CumQty	Yes	Cumulative quantity of shares executed for this order.
17	ExecID	Yes	Day-unique id of execution message assigned by OTC Link MOON.
20	ExecTransType	Yes	Valid values: 0 = New

30	LastMkt	No	Required to be MOON on Fills and Partial Fills
31	LastPx	No	Indicates price of this fill. Only required on Fills and Partial Fills.
32	LastShares	No	Quantity of shares traded on this fill (zero for non-fills). Only required on Fills and Partial Fills.
37	OrderID	Yes	Order ID assigned by OTC Link MOON
38	OrderQty	Yes	Quantity of shares on original order.
39	OrdStatus	Yes	Current status of order. Valid values: 0 = New 1 = Partially Filled 2 = Filled 3 = DoneForDay 4 = Canceled 5 = Replaced 6 = Pending Cancel 8 = Rejected E = Pending Replace
40	OrdType	Yes	Valid values: 2 = Limit
44	Price	Yes	Price of original order.
54	Side	Yes	Side of original order.
55	Symbol	Yes	Symbol of original order.
65	SymbolSfx	No	Optional Symbol Suffix
58	Text	Yes	If present, indicates reason for reject or cancel.
59	TimeInForce	No	TIF of original order
60	TransactTime	Yes	Date-time that transaction occurred in UTC format YYYYMMDD-HH:MM:SS.sss; where sss = milliseconds
75	TradeDate	No	Date trade reported to TRF. Only for specifically entitled FIX sessions.
76	ExecBroker	No	Execution contra. Only included when OrdStatus Tag 39 = 1 or 2 and only for specifically entitled FIX sessions.
111	MaxFloor	No	Portion of OrderQty to display. The balance is reserve.
150	ExecType	Yes	Type of last execution. Valid values: 0 = New 1 = Partially Filled 2 = Filled 3 = DoneForDay 4 = Canceled 5 = Replaced 6 = Pending Cancel 8 = Rejected D = Restated E = Pending Replace
151	LeavesQty	Yes	Quantity of shares still open for further execution. Will be zero if order is closed, otherwise will be Tag 38 (OrderQty) – Tag 14 (CumQty).
378	ExecRestatementReason	No	Only present when 150=D 5 = Order reduced due to Anti-Internalization
9730	LiquidityIndicator	No	Only included when OrdStatus Tag 39 = 1 or 2. Valid Values: A = Added Liquidity R = Removed Liquidity

Tag ID	Tag Name	Required	Description
			D = Added Liquidity – Sub Dollar
			H = Removed Liquidity – Sub Dollar
			X = Routed Execution – External Marketplace
9740	ClosingPrice	No	Symbol's closing price. Only included for specifically entitled FIX sessions, and when order is rejected due to closing price check,

3.8.2   Order Cancel Reject

System rejects of Cancel and Cancel / Replace requests are returned from OTC Link MOON using a FIX CancelReject (35 = 9) message.

Tag ID	Tag Name	Required	Description
35	MsgType	Yes	Will be "9"
11	ClOrdID	No	Echoed back if submitted on order

37	OrderID	Yes	Order ID assigned by OTC Link MOON
			  For Bulk Cancel rejects: "N/A"
			  For Too Late To Cancel rejects: "NONE"

39	OrderStatus	Yes	Order Status of order that failed to be cancelled or replaced.
58	Text	No	If present, indicates reason for reject.
60	TransactTime	Yes	Date-time that transaction occurred in UTC format YYYYMMDD-HH:MM:SS.sss; where sss = milliseconds

102	CxlRejReason	No	Valid values:
			  0 = Too late to cancel
			  1 = Unknown order
			  3 = Already pending cancel or pending replace

434	CxlRegResponseTo	Yes	Valid values:
			  1 = Cancel request
			  2 = Cancel / Replace Request

4 Revision History

Version	Description of Version	Date Completed
1.7	Added ClosingPrice tag 9740 to Execution report for entitled FIX sessions. Added optional SymbolSfx tag 65. Added DAY TimeInForce. Behaves the same as GTX. Clarified Post Only on Entry orders will not remove liquidity, when entered during the active trading session.	2025.12:09
1.6	Added Not Held execution instruction. It is accepted, but not processed.	2025.10.10
1.5	Added execution instructions related to routing to external marketplaces.	2025.07.25
1.4	Added optional TradeDate tag 75 to Execution Report.	2025.01.28
1.3.1	Clarified Execution Report OrdType tag 40 to remove 'P = Pegged'.	2024.12.05
1.3	Changed order acceptance start time to 7:30pm.	2024.10.18
1.2	Removed ClearingIndicator from Execution Report.	2024.09.06
1.1	Added ClearingIndicator to Execution Report.	2024.07.12
1.0	Initial version	2024.05.13