GLOBAL OTC INTEGRATED FEED CLIENT SPECIFICATION

Global OTC Integrated

Version	Date
1.15c	April 25, 2016

PREFACE

DOCUMENT HISTORY

The following table provides a description of all changes to this document.

VERSION NO.	DATE	CHANGE DESCRIPTION
1.11	06/13/2013	Removal of ReasonCode fields from Execution Message Msg Type '103'
1.12	08/30/2013	Message Type 105 amended to state that total volume could be negative
1.13	09/12/2013	Addition of '9' – Corrected Last Sale Price in Table 11, TradeCond2. Updated the description "I" in Table 11, TradeCon4 to Odd Lot Trade
1.13a	10/01/2013	Section 1.5 Trading Sessions: amended all times listed as 4:15pm to 4:00pm
1.13b	03/26/2014	Added note to Attributed Add Order Message and Attributed Add Order Refresh message stating these are future enhancements.
1.13c	11/03/2014	Removed future enhancement notes from Attr Add, Attr Add Refresh Fixed imbalance times Removed references to NYSE & NYSE MKT (these are moving to v 2.0)
1.14	02/04/2015	Addition of support for Global OTC
1.15	06/18/2015	For OTC, renamed Unsolicited to Flags, converted it to a bit field; added Flags to Attributed messges (107 & 108)
1.15a	07/10/2015	Updated legal disclaimer for Global OTC on title page
1.15b	07/24/2015	Corrected publication times
1.15c	04/18/2016	Separated Global OTC into a separate document

REFERENCE MATERIAL

The following lists the associated documents, which either should be read in conjunction with this document or which provide other relevant information for the user:

- XDP Common Client Specification

- SFTI US Technical Specification

- SFTI US Customer Guide

- NYSE Symbology

CONTACT INFORMATION

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FURTHER INFORMATION

For additional information about the product, visit the XDP Integrated Feed Product Page

For updated capacity figures, visit our capacity pages at: http://www.nyxdata.com/capacity

For details of IP addresses, visit our IP address pages at: http://www.nyxdata.com/ipaddresses

For a full glossary, visit: http://www.nyxdata.com/glossary/

CONTENTS

1.   GLOBAL OTC INTEGRATED FEED ORDER BOOK INFORMATION

1.1   OVERVIEW

The XDP Integrated feed provides a raw feed of the ATS's order book for all traded securities. Traders will see the complete depth of book, all trade events, the stock security status, and stock imbalances. All of the data is sent in the order in which it occurs in the Matching Engine.

All message types defined in this document appear only in the main publication channels, except:

- The Imbalance and Add Order Refresh message types also appear in the Refresh channels.
- The Stock Summary message appears only in a dedicated Stock Summary channel.

1.2   PUBLICATION TIMES

Table 1 Normal Trading Days (all times are ET)

MSGTYPE	DESCRIPTION	TIME (ET)
100	Add Order Message	3:30am – 4:15pm
107	Order Book Attributed Add Order Message	3:30am – 4:15pm
101	Modify Order Message	3:30am – 4:15pm
102	Delete Order Message	3:30am – 4:15pm
103	Execution Message	8:00am – 4:15pm
105	Imbalance Message	7:30am – 4:00pm
106	Order Book Add Order Refresh Message	3:30am – 4:15pm
108	Order Book Attributed Add Order Refresh Message	3:30am – 4:15pm
220	Trade Message	3:30am – 4:15pm
221	Trade Cancel or Bust Message	3:30am – 4:15pm
222	Trade Correction Message	3:30am – 4:15pm
223	Stock Summary Message	3:30am – 4:15pm

Table 2 Early Closing Days (all times are ET)

MSGTYPE	DESCRIPTION	TIME (ET)
100	Add Order Message	3:30am – 1:15pm
107	Order Book Attributed Add Order Message	3:30am – 1:15pm
101	Modify Order Message	3:30am – 1:15pm
102	Delete Order Message	3:30am – 1:15pm
103	Execution Message	3:30am – 1:15pm
105	Imbalance Message	7:30am – 1:00pm
106	Order Book Add Order Refresh Message	3:30am – 1:15pm
108	Order Book Attributed Add Order Refresh Message	3:30am – 1:15pm
220	Trade Message	3:30am – 1:15pm

MSGTYPE	DESCRIPTION	TIME (ET)
221	Trade Cancel or Bust Message	3:30am – 1:15pm
222	Trade Correction Message	3:30am – 1:15pm
223	Stock Summary Message	3:30am – 1:15pm

1.3   CONTROL MESSAGE TYPES

Table 3 Control Message Types used in the Data Feed

MSGTYPE	DESCRIPTION
1	Sequence Number Reset
2	Time Reference Message
3	Symbol Index Mapping
10	Retransmission Request Message
11	Request Response Message
12	Heartbeat Response Message
13	Symbol Index Mapping Request Message
15	Refresh Request Message
31	Message Unavailable
32	Symbol Clear
33	Trading Session Change
34	Security Status Message
35	Refresh Header Message

1.4   REFRESH MESSAGE TYPES

Table 4 Refresh Message Types used in the Refresh Feed

MSGTYPE	DESCRIPTION
35	Refresh Header Message
3	Symbol Index Mapping
105	Imbalance Message
34	Security Status Message
33	Trading Session Change
106	Order Book Add Order Refresh Message
108	Order Book Attributed Add Order Message

1.5   TRADING SESSIONS

Table 5 Trading Sessions (all times are ET)

SESSION VALUE	DESCRIPTION	TIME (ET)
0x01	Morning Hours	8:00am – 9:30am
0x02	National Hours	9:30am – 4:00pm
0x04	Late Hours	4:00pm – 4:15pm

2.   ORDER BOOK ADD ORDER MESSAGE – MSG TYPE '100'

An Add Order message is published when a new visible order has been added to the book.

See the XDP Common Client Specification for details on Time Reference and Symbol Index Mapping messages, and Order ID and Price field formats.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 32 Bytes
Msg Type	2	2	Binary	The type of message: 100 – Add Order Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	4	Binary	The Order ID identifies a unique order.
Price	20	4	Binary	The price point. Use the Price scale from the symbol-mapping index.
Volume	24	4	Binary	This field contains the order quantity in shares
Side	28	1	ASCII	The side of the order (Buy/Sell). Valid values: ■ 'B' – Buy ■ 'S' – Sell
OrderIDGTCIndicator	29	1	Binary	Unused. Defaulted to 0.
TradeSession	30	1	Bit Field	Values: ■ 0x01 Ok for morning hours ■ 0x02 Ok for national hours (core) ■ 0x03 OK for morning and core ■ 0x04 Ok for late hours ■ 0x06 OK for core and late ■ 0x07 OK for morning, core, and late
Flags	31	1	Bit Field	Values: ■ 0x00 – Solicited order ■ 0x01 - Unsolicited order

3.   ORDER BOOK ATTRIBUTED ADD ORDER MESSAGE – MSG TYPE '107'

Global OTC market makers may publish an add (107) on the buy side attributed to the market maker MPID but with prices and sizes set to 0. This information is non-tradable and is published each day by the system on behalf of the market maker.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	The size of the message: 37 Bytes
Msg Type	2	2	Binary	The type of message: 107 – Attributed Add Order Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	4	Binary	The Order ID identifies a unique order
Price	20	4	Binary	The price point. Use the Price scale from the symbol-mapping index.
Volume	24	4	Binary	The order quantity in shares
Side	28	1	ASCII	Values: ■ 'B' – Buy ■ 'S' – Sell
OrderIDGTCIndicator	29	1	Binary	Unused. Defaulted to 0.
TradeSession	30	1	Bit Field	Values: ■ 0x01 Ok for morning hours ■ 0x02 Ok for national hours (core) ■ 0x03 OK for morning and core ■ 0x04 Ok for late hours ■ 0x06 OK for core and late ■ 0x07 OK for morning, core, and late
FirmID	31	5	ASCII	Market participant's firm ID
Flags	36	1	Bit Field	Values: ■ 0x00 – Solicited order ■ 0x01 - Unsolicited order

4.   ORDER BOOK MODIFY MESSAGE – MSG TYPE '101'

XDP Integrated feed sends this message when an order in the Order Book is modified. The Order ID refers to the original order sent in the add order message. The following events trigger a modify order message.

- The price of an order changes
- The size of an order changes

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 31 Bytes
Msg Type	2	2	Binary	The type of message: 101 – Modify Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	4	Binary	The Order ID identifies a unique order.
Price	20	4	Binary	The price point. Use the Price scale from the symbol-mapping index.
Volume	24	4	Binary	The order quantity in shares
Side	28	1	ASCII	The side of the order (Buy/Sell). Valid values: ■ 'B' – Buy ■ 'S' – Sell
OrderIDGTCIndicator	29	1	Binary	■ Unused. Defaulted to 0.
ReasonCode	30	1	Binary	Modify Reason: ■ 5 – Change (lost position in book) ■ 6 – Routed (keep position in book) ■ 7 – Modify Fill (keep position in book)

5. ORDER BOOK DELETE MESSAGE – MSG TYPE '102'

XDP Integrated feed sends this message when an order is taken off of the order book. The following events will trigger the transmission of a delete order message:

- An order is cancelled

- An order expires

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 23 Bytes
Msg Type	2	2	Binary	The type of message: 102 – Delete Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	4	Binary	The Order ID identifies a unique order.
Side	20	1	ASCII	The side of the order (Buy/Sell). Valid values: ■ 'B' – Buy ■ 'S' – Sell
OrderIGTCIndicator	21	1	Binary	■ Unused. Defaulted to 0.
ReasonCode	22	1	Binary	Delete Reason: ■ 1 – User Cancel ■ 2 – Modify (taken off book, Order ID may add again) ■ 3 – Delete Filled

6.   ORDER BOOK EXECUTION MESSAGE – MSG TYPE '103'

An Order Book Execution message is sent when a visible order is partially or fully executed. The Volume field indicates the executed quantity. If the Price field is different from the price of the order, any remaining shares keep their original price. If the Volume field equals the number of shares previously remaining in the order, then the order has been fully executed and should be removed from the book.   If the order has been partially executed, further Order Execution messages for this Order ID may be published.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 34 Bytes
Msg Type	2	2	Binary	The type of message: 103 – Execution Message
SourceTimeNS	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SymbolIndex	8	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	16	4	Binary	The Order ID identifies a unique order.
Price	20	4	Binary	The execution price point. Use the Price scale from the symbol-mapping index.
Volume	24	4	Binary	This field contains the order quantity in shares
OrderIDGTCIndicator	28	1	Binary	Unused. Defaulted to 0.
ReasonCode	29	1	Binary	Default: 0 See Section 6.1 for more information.
TradeID	30	4	Binary	Unique ID assigned by the matching engine to this execution. Used by any subsequent Trade Cancel message to identify this execution.

6.1   ORDER BOOK EXECUTION MESSAGE SENDING RULES

If the reason codes are set to zero, signifying that this feature has not yet been implemented, then the feed will disseminate the following:

1. In the event an order is partially filled, the data feed will first send an execution message followed by a modify message for the Order ID that has been partially executed.

2. In the event an order is fully executed, the data feed will first send an execution message followed by a delete for the Order ID that has been fully executed.

If the reason codes are not to zero, then the data feed will only send the execution message with the appropriate reason code when a trade occurs

3. In the event an order is partially filled, the execution message will show a reason code value of "7" requiring that the corresponding Order ID should have its volume reduced by the volume amount on the execution message.

4. In the event an order is fully executed, the data feed will send an execution message with a reason code value of "3". The corresponding Order ID should then be removed from the book since the volume has been fully executed.

7.   ORDER BOOK ADD ORDER REFRESH MESSAGE – MSG TYPE '106'

This message is published only during a refresh or after a symbol clear which will result in a book refresh.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 36 Bytes
Msg Type	2	2	Binary	The type of message: 106 – Add Order Refresh Message
SourceTime	4	4	Binary	The time when this msg was generated in the order book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the Source Time
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	16	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	20	4	Binary	The Order ID identifies a unique order.
Price	24	4	Binary	The price point. Use the Price scale from the symbol-mapping index.
Volume	28	4	Binary	This field contains the order quantity in shares
Side	32	1	ASCII	The side of the order (Buy/Sell). Valid values: ■ 'B' – Buy ■ 'S' – Sell
OrderID GTC Indicator	33	1	Binary	Unused. Defaulted to 0.
TradeSession	34	1	Bit Field	Values: ■ 0x01 Ok for morning hours ■ 0x02 Ok for national hours (core) ■ 0x03 OK for morning and core ■ 0x04 Ok for late hours ■ 0x06 OK for core and late ■ 0x07 OK for morning, core, and late
Flags	35	1	Bit Field	Values: ■ 0x00 - Solicited order ■ 0x01 - Unsolicited order

8.   ORDER BOOK ATTRIBUTED ADD ORDER REFRESH MESSAGE – MSG TYPE '108'

The Global OTC Integrated feed publishes this message type (108) only during a refresh or after a symbol clear which will result in a book refresh. It represents a re-add of a previously published 107 message.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	The size of the message: 41 Bytes
Msg Type	2	2	Binary	The type of message: 108 – Attributed Add Order Refresh Message
SourceTime	4	4	Binary	The time when this msg was generated in the book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the Source Time
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	16	4	Binary	The sequence number of this message in the set of all messages for this symbol
OrderID	20	4	Binary	The Order ID identifies a unique order.
Price	24	4	Binary	The price point. Use the Price scale from the symbol-mapping index.
Volume	28	4	Binary	This field contains the order quantity in shares
Side	32	1	ASCII	The side of the order (Buy/Sell). Valid values: ■ 'B' – Buy ■ 'S' – Sell
OrderID GTC Indicator	33	1	Binary	Unused. Defaulted to 0.
TradeSession	34	1	Bit Field	Values: ■ 0x01 Ok for morning hours ■ 0x02 Ok for national hours (core) ■ 0x03 OK for morning and core ■ 0x04 Ok for late hours ■ 0x06 OK for core and late ■ 0x07 OK for morning, core, and late
FirmID	35	5	Binary	This field provides market participant's firm ID
Flags	40	1	Bit Field	Values: ■ 0x00 - Solicited order ■ 0x01 - Unsolicited order

9.   TRADE MESSAGE – MSG TYPE '220'

A Trade message is published as a result of an execution involving either visible or hidden liquidity.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 54 Bytes
Msg Type	2	2	Binary	The type of message: 220 – Trade Message
SourceTime	4	4	Binary	The time when this msg was generated in the order book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the Source Time
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	16	4	Binary	The sequence number of this message in the set of all messages for this symbol
TradeID	20	4	Binary	The TradeID identifies a unique transaction in the matching and allows you to correlate execution reports to the last sale.
Price	24	4	Binary	The execution price point. Use the Price scale from the symbol-mapping index.
Volume	28	4	Binary	Volume of the trade in actual shares
TradeCond1	32	1	ASCII	Settlement related condition. Valid values: ■ '@' - Regular Sale ■ 'C' – Cash ■ 'N'– Next Day Trade ■ 'R' – Seller
TradeCond2	33	1	ASCII	Reason for Trade Through Exemption. Values: ■ '0x20' – N/A ■ 'F' – Intermarket Sweep Order ■ 'O' – Market Center Opening Trade ■ '4' – Derivatively Priced ■ '5' – Market Center Reopening Trade ■ '6' – Market Center Closing Trade ■ '9' – Corrected Last Sale Price
TradeCond3	34	1	ASCII	Extended hours/sequencing related conditions. Valid values: ■ '0x20' – N/A ■ 'L' – Sold Last ■ 'T' – Extended Hours Trade ■ 'U' – Extended Hours Sold (Out of Sequence)

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
				■ 'Z' – Sold
TradeCond4	35	1	ASCII	SRO Required Detail. Valid values: ■ '@' - Regular Sale ■ '0x20' – N/A ■ 'B' – Average Price Trade ■ 'E' – Automatic Execution ■ 'H' – Price Variation Trade ■ 'I' – Odd Lot Trade ■ 'M' – Official Closing Price ■ 'P' – Prior Reference Price ■ 'Q' – Official Open Price ■ 'V' – Stock-Option Trade ■ 'X' – Cross Trade
Trade Through Exempt	36	1	ASCII	Values: ■ 'X' – 611 Trade through Exempt ■ '0x20' – N/A
Liquidity Indicator Flag	37	1	Binary	The side that provided liquidity for the trade. Bit Shift values: ■ 0x01 Buy Side ■ 0x02 Sell Side ■ 0x04 No Liquidity added
Ask Price	38	4	Binary	The Ask price of the last quote before the trade. Use the Symbol Mapping message's Price scale.
Ask Volume	42	4	Binary	The Ask size of the last quote before the trade
Bid Price	46	4	Binary	Tthe Bid price of the last quote before the trade. Use the Symbol Mapping message's Price scale.
Bid Volume	50	4	Binary	The Bid size of the last quote before the trade

10. TRADE CANCEL OR BUST MESSAGE – MSG TYPE '221'

In the event that an earlier Trade has been reported in error, a Trade Cancel message is sent to delete the Trade.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 24 Bytes
Msg Type	2	2	Binary	The type of message: 221 – Trade Cancel or Bust Message
SourceTime	4	4	Binary	The time when this msg was generated in the book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the Source Time
SymbolIndex	12	4	Binary	The sequence number of this message in the set of all messages for this symbol
SymbolSeqNum	16	4	Binary	The sequence number of this message in the set of all messages for this symbol
OriginalTradeID	20	4	Binary	The TradeID of the original trade cancelled by this message.

11. TRADE CORRECTION MESSAGE – MSG TYPE '222'

NOTE: This message type is not currently used for Global OTC, but may be in a future release.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 41 Bytes
Msg Type	2	2	Binary	The type of message: 222 – Trade Correction Message
SourceTime	4	4	Binary	The time when this msg was generated in the book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the Source Time
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	16	4	Binary	The sequence number of this message in the set of all messages for this symbol
OriginalTradeID	20	4	Binary	The Trade ID of the original trade being corrected.
TradeID	24	4	Binary	The Trade ID of the corrected trade.
Price	28	4	Binary	The corrected price point. Use the Price scale from the symbol-mapping index.
Volume	32	4	Binary	The corrected volume in shares
TradeCond1	36	1	ASCII	Corrected settlement related conditions. Values: ■ '@' - Regular Sale ■ 'C' – Cash ■ 'N'– Next Day Trade ■ 'R' – Seller
TradeCond2	37	1	ASCII	The Reason for Trade Through Exemptions. values: ■ '0x20' – N/A ■ 'F' – Intermarket Sweep Order ■ 'O' – Market Center Opening Trade ■ '4' – Derivatively Priced ■ '5' – Market Center Reopening Trade ■ '6' – Market Center Closing Trade
TradeCond3	38	1	ASCII	Extended hours/sequencing conditions. Values: ■ '0x20' – N/A ■ 'L' – Sold Last ■ 'T' – Extended Hours Trade ■ 'U' – Extended Hours Sold (Out of Sequence) ■ 'Z' – Sold

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
TradeCond4	39	1	ASCII	The SRO Required Detail. Valid values: ■ '@' - Regular Sale ■ '0x20' – N/A ■ 'B' – Average Price Trade ■ 'E' – Automatic Execution ■ 'H' – Price Variation Trade ■ 'I' – CAP Election Trade ■ 'M' – Official Closing Price ■ 'P' – Prior Reference Price ■ 'Q' – Official Open Price ■ 'V' – Stock-Option Trade ■ 'X' – Cross Trade
Trade Through Exempt	40	1	ASCII	'X' – 611 Trade through Exempt '0x20' – N/A

12. STOCK SUMMARY MESSAGE – MSG TYPE '223'

NOTE: This message type is not currently used for Global OTC, but may be in a future release.

The stock summary message is sent on a separate channel from the main feed every one minute, regardless of whether the information has changed to or not.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 36 bytes
Msg Type	2	2	Binary	The type of message: 223 – Stock Summary Message
SourceTime	4	4	Binary	The time when this msg was generated in the order book, in seconds since Jan 1, 1970 00:00:00 UTC.
SourceTimeNS	8	4	Binary	The nanosecond offset from the Source Time
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
HighPrice	16	4	Binary	The ATS high price of this stock for the day. Use the Price scale from the symbol index msg.
LowPrice	20	4	Binary	The ATS low price of this stock for the day. Use the Price scale from the symbol index msg.
Open	24	4	Binary	The ATS open price of this stock for the day. Use the Price scale from the symbol index msg.
Close	28	4	Binary	The ATS closing price of this stock for the day. Use the Price scale from the symbol index msg.
TotalVolume	32	4	Binary	The ATS cumulative volume for the stock throughout the day.

13. IMBALANCE MESSAGE– MSG TYPE '105'

Imbalance messages are sent periodically to update price and volume information during auctions.

See Imbalance Calculation below for more information.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
Msg Size	0	2	Binary	Size of the message: 52 Bytes
Msg Type	2	2	Binary	The type of message: 105 – Imbalance Message
SourceTime	4	4	Binary	The nanosecond offset from the Time Reference second (since Jan 1, 1970 00:00:00 UTC)
SourceTimeNS	8	4	Binary	The nanosecond offset from the Source Time
SymbolIndex	12	4	Binary	The ID of the symbol in the Symbol Index msg
SymbolSeqNum	16	4	Binary	The sequence number of this message in the set of all messages for this symbol
ReferencePrice	20	4	Binary	The best price at which the maximum volume of shares is executable in the applicable auction, subject to Auction Collars. It includes the non-displayed quantity of Reserve Orders. See section 13.1 for further details.
PairedQty	24	4	Binary	The number of shares paired off at the Reference Price
TotalImbalanceQty	28	4	Signed Binary	The number of shares NOT paired off at the Reference Price. If the value is negative, the imbalance is on the sell side, otherwise, the buy side.
MarketImbalanceQty	32	4	Signed Binary	The total market order imbalance quantity. If the value is negative, the imbalance is on the Sell side, otherwise, the Buy side.
AuctionTime	36	2	Binary	Projected Auction Time (hhmm)
AuctionType	38	1	ASCII	■ 'O' – Open (8:00am) ■ 'M' – Market (9:30am) ■ 'H' - Halt ■ 'C' – Closing ■ 'R' – Regulatory Imbalance
ImbalanceSide	39	1	ASCII	The side of the imbalance (Buy/Sell). Values: ■ 'B' – Buy ■ 'S' – Sell ■ Space – No imbalance Future enhanc ement. Defaulted to 0.
ContinuousBook ClearingPrice	40	4	Binary	The price closest to last sale where imbalance is zero. Future enhanc ement. Defaulted to 0.
ClosingOnly ClearingPrice	44	4	Binary	The indicative price against closing only orderS Future enhanc ement. Defaulted to 0.

FIELD NAME	OFFSET	SIZE (BYTES)	FORMAT	DESCRIPTION
SSRFilingPrice	48	4	Binary	Unused. Defaulted to 0.

13.1   IMBALANCE CALCULATION

Global OTC conducts three single-price auctions during the day: the Opening Auction, the Market Order Auction and the Closing Auction. As a part of the auction process, the indicative match price, indicative match volume and the auction imbalance are continually calculated and disseminated.

 These auctions are conducted for eligible Global OTC securities only.

Table 6 Imbalance Calculation

MESSAGE TYPE	DESCRIPTION
Early Opening Auction	**Interest Included** 1. Limit Orders designated for the Early Trading Session. 2. During the last minute before the Early Opening Auction time, the non-displayed quantity of Reserve Orders designated for the Early Open Auction is included in the Matched Volume and Total Imbalance Volume. **Order Cancellation** Orders that participate in the Opening Auction cannot be canceled during the conclusion of the auction, or between 7:59 a.m. ET and 8:00 a.m. ET. **Calculation** ■ The Early Opening Auction occurs at the Indicative Match Price. ■ If two or more prices can maximize executable volume, the Early Opening Auction occurs at whichever price is closest to the previous Official Closing Price in an effort to maintain continuity. Unexecuted orders become eligible for the Opening Session immediately upon conclusion of the Early Opening Auction. **Reference Price** - The price at which the maximum volume of shares are executable.
Core Opening Auction	**Eligible Symbols** ■ The Market Order Auction is run for eligible Global OTC traded stocks only. **Interest Included** ■ Limit, Market, MOO and LOO Orders (eligible for either the Opening Session and/or National hours Trading Session) ■ During the last 5 seconds before the Core Opening Auction time, the non-displayed quantity of Reserve Orders is included in the Matched Volume and Total Imbalance Volume. **Order Cancellation** Orders can be cancelled any time during the auction, except for MOO and LOO orders which can be cancelled only up to 1 minute before the conclusion of the auction. **Calculation** ■ The match price is the price that maximizes the volume that can be executed.

MESSAGE TYPE	DESCRIPTION
	■ If more than one indicative match price is valid, the Market Order Auction will use the match price closest to the closing price of the previous trading day (based on normal market hours) **Reference Price** - The price at which the maximum volume of shares are executable.
Closing Auction	**Eligible Symbols** ■ The Closing Auction is run for eligible Global OTC traded stocks only. **Interest Included** 1. Limit, Market, MOC and LOC orders 2. During the last minute before the Closing Auction time, the non-displayed quantity of Reserve Orders is included in the Matched Volume and Total Imbalance Volume. **Calculation** ■ Orders will be executed in the Closing Auction at the Indicative Match Price as of 4:00 p.m. ET. ■ The indicative match price will be the price at which the maximum number of shares in the total imbalance can execute. **Reference Price** - The price at which the maximum volume of shares are executable.

13.2   IMBALANCE PUBLICATION TIMES

Imbalance updates are published in real time during the following time periods

MESSAGE	HOURS
Opening Imbalances	7:30 a.m. ET - 8:00 a.m. ET
Market Imbalances	8:00a.m. ET - 9:30 a.m. ET
Closing Imbalances	3:00 p.m. ET - 4:00 p.m. ET

14. PRODUCT ID

VENUE	PRODUCT ID	DESCRIPTION
Global OTC	170	Global OTC Integrated Feed