



GLOBAL OTC INTEGRATED FEED CLIENT SPECIFICATION

Global OTC Integrated

Version

1.15c

Date

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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 messages (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](#)

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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/>

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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: <ul style="list-style-type: none"> ■ ‘B’ – Buy ■ ‘S’ – Sell |
| OrderIDGTCIndicator | 29 | 1 | Binary | Unused. Defaulted to 0. |
| TradeSession | 30 | 1 | Bit Field | Values: <ul style="list-style-type: none"> ■ 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: <ul style="list-style-type: none"> ■ 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: <ul style="list-style-type: none"> ■ ‘B’ – Buy ■ ‘S’ – Sell |
| OrderIDGTCIndicator | 29 | 1 | Binary | Unused. Defaulted to 0. |
| TradeSession | 30 | 1 | Bit Field | Values: <ul style="list-style-type: none"> ■ 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: <ul style="list-style-type: none"> ■ 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: <ul style="list-style-type: none"> ■ ‘B’ – Buy ■ ‘S’ – Sell |
| OrderIDGTCIndicator | 29 | 1 | Binary | <ul style="list-style-type: none"> ■ Unused. Defaulted to 0. |
| ReasonCode | 30 | 1 | Binary | Modify Reason: <ul style="list-style-type: none"> ■ 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: <ul style="list-style-type: none"> ■ ‘B’ – Buy ■ ‘S’ – Sell |
| OrderIGTCIndicator | 21 | 1 | Binary | ■ Unused. Defaulted to 0. |
| ReasonCode | 22 | 1 | Binary | Delete Reason: <ul style="list-style-type: none"> ■ 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: <ul style="list-style-type: none"> ■ ‘B’ – Buy ■ ‘S’ – Sell |
| OrderID GTC Indicator | 33 | 1 | Binary | Unused. Defaulted to 0. |
| TradeSession | 34 | 1 | Bit Field | Values: <ul style="list-style-type: none"> ■ 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: <ul style="list-style-type: none"> ■ 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: <ul style="list-style-type: none"> ■ ‘B’ – Buy ■ ‘S’ – Sell |
| OrderID GTC Indicator | 33 | 1 | Binary | Unused. Defaulted to 0. |
| TradeSession | 34 | 1 | Bit Field | Values: <ul style="list-style-type: none"> ■ 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: <ul style="list-style-type: none"> ■ 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: <ul style="list-style-type: none"> ■ ‘@’ - Regular Sale ■ ‘C’ – Cash ■ ‘N’ – Next Day Trade ■ ‘R’ – Seller |
| TradeCond2 | 33 | 1 | ASCII | Reason for Trade Through Exemption. Values: <ul style="list-style-type: none"> ■ ‘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: <ul style="list-style-type: none"> ■ ‘0x20’ – N/A ■ ‘L’ – Sold Last ■ ‘T’ – Extended Hours Trade ■ ‘U’ – Extended Hours Sold (Out of Sequence) |

| FIELD NAME | OFFSET | SIZE (BYTES) | FORMAT | DESCRIPTION |
|---------------------------------|--------|--------------|--------|--|
| | | | | <ul style="list-style-type: none"> ■ 'Z' – Sold |
| TradeCond4 | 35 | 1 | ASCII | SRO Required Detail. Valid values: <ul style="list-style-type: none"> ■ '@' – 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: <ul style="list-style-type: none"> ■ '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: <ul style="list-style-type: none"> ■ 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 | The 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: <ul style="list-style-type: none"> ■ '@' - Regular Sale ■ 'C' – Cash ■ 'N' – Next Day Trade ■ 'R' – Seller |
| TradeCond2 | 37 | 1 | ASCII | The Reason for Trade Through Exemptions. values: <ul style="list-style-type: none"> ■ '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: <ul style="list-style-type: none"> ■ '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: <ul style="list-style-type: none"> ■ '@' - 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 | <ul style="list-style-type: none"> ■ ‘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: <ul style="list-style-type: none"> ■ ‘B’ – Buy ■ ‘S’ – Sell ■ Space – No imbalance Future enhancement. Defaulted to 0. |
| ContinuousBook ClearingPrice | 40 | 4 | Binary | The price closest to last sale where imbalance is zero. Future enhancement. Defaulted to 0. |
| ClosingOnly ClearingPrice | 44 | 4 | Binary | The indicative price against closing only orders Future enhancement. 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 | <p>Interest Included</p> <ol style="list-style-type: none"> Limit Orders designated for the Early Trading Session. 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. <p>Order Cancellation</p> <p>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.</p> <p>Calculation</p> <ul style="list-style-type: none"> 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. <p>Unexecuted orders become eligible for the Opening Session immediately upon conclusion of the Early Opening Auction.</p> <p>Reference Price - The price at which the maximum volume of shares are executable.</p> |
| Core Opening Auction | <p>Eligible Symbols</p> <ul style="list-style-type: none"> The Market Order Auction is run for eligible Global OTC traded stocks only. <p>Interest Included</p> <ul style="list-style-type: none"> 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. <p>Order Cancellation</p> <p>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.</p> <p>Calculation</p> <ul style="list-style-type: none"> The match price is the price that maximizes the volume that can be executed. |

| MESSAGE TYPE | DESCRIPTION |
|------------------------|--|
| | <ul style="list-style-type: none"> 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) <p>Reference Price - The price at which the maximum volume of shares are executable.</p> |
| Closing Auction | <p>Eligible Symbols</p> <ul style="list-style-type: none"> The Closing Auction is run for eligible Global OTC traded stocks only. <p>Interest Included</p> <ol style="list-style-type: none"> Limit, Market, MOC and LOC orders 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. <p>Calculation</p> <ul style="list-style-type: none"> 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. <p>Reference Price - The price at which the maximum volume of shares are executable.</p> |

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 |