



Cboe Titanium U.S. Equities TOP Specification

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Cboe Titanium U.S. Equities TOP Specification

Introduction

Cboe members may use the TOP protocol to receive real-time top of book quotations direct from Cboe. Market data received through TOP is more timely than obtaining the same data via the consolidated feed. The TOP protocol offers approximately 66% reduction in the number of events and 84% reduction in the number of bytes of application data sent, compared to the Cboe TCP PITCH protocol.

The quotations received via TOP provide an aggregated size and do not indicate the size or number of individual orders at the best bid or ask. Hidden orders are not represented in TOP. The TOP protocol also provides last trade price and size and cumulative volume data.

This specification will be the standard TOP specification used for Cboe BYX Exchange, BZX Exchange, EDGA Exchange, and EDGX Exchange platforms within the NY5 data center.

Complete depth of book market data can be received via the Cboe PITCH protocol.

TOP cannot be used to enter orders. For order entry, refer to the appropriate Cboe FIX or BOE Specification.

Typography

Example messages are shown in a **constant width** typeface. Some invisible ASCII characters are shown using special characters:

- Space (0x20); shown as an underscore _
- New line (0x0A); shown as «

Data Types

The data types used are similar to the data types used in Cboe PITCH.

- Numeric fields are a string of ASCII digits, right justified and zero filled on the left. For example, for a six place numeric field, 000123 represents 123.
- Alpha and Alphanumeric fields are left justified and space padded on the right. For example, for a six place alpha field for symbol ZVZZT is represented as ZVZZT_.
- Prices are decimal with either extended form (8 whole number digits followed by 6 decimal places), long form (6 whole number digits followed by 4 decimal digits), or short form (3 whole number digits followed by 2 decimal digits). The whole number portion is zero filled on the left; the decimal portion is zero filled on the right. The decimal point is implied by position and does not explicitly appear in the field. For an extended form price, 00000012340000 represents 12.34. For a long form price, 0000123400 represents 12.34. For a short form price, 01234 represents 12.34.
- Boolean fields contain either Y or N.
- Timestamp fields are 8 whole number milliseconds past midnight, Eastern Time, right justified and zero filled on the left, with no decimal point. For example, 32483556 represents 9:01:23.556 am. Negative offsets are possible and will have a minus sign '-' in the left most location. Negative values represent time before midnight Eastern Time.

Protocol

Message Format

The TOP data feed is comprised of a series of fixed-length, line-oriented, unsequenced messages. The length of each message is dependent upon the message type. Each message consists of non-control ASCII bytes.

Sessions

The client connects to an assigned host and port using a TCP/IP socket.

Connectivity

Attribute	Description	Input
IP Address	Address to connect to.	Supplied by Cboe.
TCP Port	Port to connect to.	Supplied by Cboe.
Password	Sent upon initial successful connection.	Supplied by Cboe.

For information on connectivity options to Cboe, see [Cboe Titanium U.S. Equities/Options Connectivity Manual](#).

Logon

Upon connection, the member must send a **Logon** message. The message indicates whether the member would like a spin of the current top of book for all symbols. The server will respond with either a **Logon Accepted** or **Logon Rejected** message. If a spin was requested, a **Spin** message is sent for each symbol, followed by a **Spin Done** message. If updates occur during the spin, you will receive **Seconds**, **Milliseconds**, **Long/Short Bid Update**, **Long/Short Ask Update**, **Long/Short Two-Sided Update**, and **Long/Short Trade** messages before receiving the **Spin Done** message. Seconds and Milliseconds messages are used to interleave timestamp information between messages, preventing duplicate timestamp information from being embedded in multiple messages.

Heartbeat

The client must send **Client Heartbeat** messages once per second. If a client heartbeat isn't received for five seconds, the connection is terminated. The server will send **Server Heartbeat** messages once per second if no other messages have been sent in the last second.

Logon Related Messages

Logon Message Fields (Client)

Table 1. Logon Message Fields (Client)

Field Name	Offset	Length	Type/(Value)	Description
Message Type	0	1	L	Logon message
Username	1	6	Alphanumeric	Username, assigned by Cboe
Password	7	10	Alphanumeric	Password, assigned by Cboe
Spin Flag	17	1	Boolean	If Y, spin current top of book
\n	18	1	\n	End of message

Logon Accepted Message Fields (Server)

Table 1. Logon Accepted Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
Message Type	0	1	C	Logon Accepted message
\n	1	1	\n	End of message

Logon Rejected Message Fields (Server)

Table 1. Logon Rejected Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
Message Type	0	1	J	Logon Rejected message
Reject Reason	1	1	Alpha	A = Authentication or authorization problem (currently the only reason sent)
\n	2	1	\n	End of message

Example

Successful login:

LABC__pass_____Y«
C«

Rejected login:

LABC__pass_____Y«
JA«

Spin Related Messages

Spin Message (Server)

If a spin was requested in the **Logon** message, **Spin** messages will be sent for any symbol which has had a visible order placed for it that day. If the connection is established prior to market open, no orders will have been placed and zero **Spin** messages will be sent. If a symbol has had orders that day but currently has no orders, a **Spin** message will be sent with zero price and quantity for each side. If a symbol has a one-sided quote, zero price and quantity will be sent for the side which has no orders.

The timestamp reflected in the **Spin** message is the time at which the update to the top of book occurred, not the time when the **Spin** message was sent to the member.

Expanded Spin Message Fields (Server)

The following expanded version of the **Spin** message (server) accommodates larger symbol sizes possible through the ISRA plan.

Table 1. Expanded Spin Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
Message Type	0	1	s	Spin message
Timestamp	1	8	Timestamp	Time of top of book update; milliseconds since midnight, Eastern time
Symbol	9	8	Alpha	Symbol
Bid Price	17	10	Price	Bid price; 0 if no bids
Bid Quantity	27	6	Numeric	Bid quantity; 0 if no bids
Ask Price	33	10	Price	Ask price; 0 if no offers
Ask Quantity	43	6	Numeric	Ask quantity; 0 if no offers
Last Trade Time	49	8	Timestamp	Time of last trade; milliseconds since midnight, Eastern time
Last Trade Price	57	10	Price	Last trade price; 0 if no trades
Last Trade Size	67	6	Numeric	Last trade size; 0 if no trades
Cumulative Volume	73	9	Numeric	Cumulative volume executed today; 0 if no trades
Halt Status	82	1	Alpha	H = Halted T = Trading
Reg SHO Action	83	1	Alpha	0 = No price test in effect 1 = Reg SHO price test restriction in effect
Reserved1	84	1	Alpha	Reserved
Reserved2	85	1	Alpha	Reserved
\n	86	1	\n	End of message

Extended Spin Message Fields (Server)

The following extended version of the **Spin** Message (server) accommodates larger prices. This would only be sent if the price exceeds the maximum allowed for a long form price data type.

Table 1. Extended Spin Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	S	Spin message
<i>Timestamp</i>	1	8	Timestamp	Time of top of book update; milliseconds since midnight, Eastern time
<i>Symbol</i>	9	8	Alpha	Symbol
<i>Bid Price</i>	17	14	Price	Bid price; 0 if no bids
<i>Bid Quantity</i>	31	6	Numeric	Bid quantity; 0 if no bids
<i>Ask Price</i>	37	14	Price	Ask price; 0 if no offers
<i>Ask Quantity</i>	51	6	Numeric	Ask quantity; 0 if no offers
<i>Last Trade Time</i>	57	8	Timestamp	Time of last trade; milliseconds since midnight, Eastern time
<i>Last Trade Price</i>	65	14	Price	Last trade price; 0 if no trades
<i>Last Trade Size</i>	79	6	Numeric	Last trade size; 0 if no trades
<i>Cumulative Volume</i>	85	9	Numeric	Cumulative volume executed today; 0 if no trades
<i>Halt Status</i>	94	1	Alpha	H = Halted T = Trading
<i>Reg SHO Action</i>	95	1	Alpha	0 = No price test in effect 1 = Reg SHO price test restriction in effect
<i>Reserved1</i>	96	1	Alpha	Reserved
<i>Reserved2</i>	97	1	Alpha	Reserved
<i>\n</i>	98	1	\n	End of message

Spin Done Message Fields (Server)

Once all **Spin** messages have been sent, a **Spin Done** message is sent. A **Spin Done** message is not sent if a spin wasn't requested during logon.

Table 1. Spin Done Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	D	Spin Done message
<i>\n</i>	1	1	\n	End of message

Example

Spin of TESTA (two sided quote), TESTB (one sided quote, offer only), and ZVZZT (no current quote):

```
s34348112TESTA__00001234000002000000123500001000343470000000123400000100000120100T0__«
s34399808TESTB__000000000000000000000971200000900343461100000971100000200000030300T0__«
S34344716TESTC__012345678000000000200012345679000000001000343470001234567850000000100000120000T0_
s34250522ZVZZT__00000000000000000000000000000000000000000000000000000000000000000000T0__«
D«
```

Heartbeat Messages

Server Heartbeat Message Fields (Server)

A **Server Heartbeat** message is sent once per second if no update messages have been sent.

Table 1. Server Heartbeat Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	H	Server Heartbeat message
<i>\n</i>	1	1	\n	End of message

Client Heartbeat Message Fields (Client)

A **Client Heartbeat** message should be sent once per second by the client. If a **Client Heartbeat** is not received for five seconds, the connection will be terminated.

Table 1. Client Heartbeat Message Fields (Client)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	R	Server Heartbeat message
<i>\n</i>	1	1	\n	End of message

Time Update Messages

Seconds Message Fields (Server)

Sent for every second for which at least one message is being generated.

Table 1. Seconds Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	-	1	T	Seconds message
<i>Seconds</i>	1	5	Numeric	Number of seconds since midnight; e.g., 32400 = 9:00am
\n	6	1	\n	End of message

Milliseconds Message Fields (Server)

Sent for every millisecond for which at least one message is being generated.

Table 1. Milliseconds Message Fields (Server)

Field Name	Offset	Length	Value	Description
<i>Message Type</i>	-	1	M	Milliseconds message
<i>Milliseconds</i>	1	3	Numeric	Number of milliseconds since last Second message
\n	4	1	\n	End of message

Time Reference Message Fields (Effective 11/02/26 on BZX and EDGX)

The **Time Reference** message is used to provide a midnight reference point for recipients of the feed. It is sent whenever the system starts up and when the system crosses a midnight boundary. All subsequent **Timestamp** values will use the last **Midnight Reference** until another **Time Reference** message is received. The **Time Reference** message includes the **Trade Date**, so most other sequenced messages will not include that information.

The **Time Reference** message will be sent when the system first detects a message that crosses a midnight boundary. In the event a message from another internal data source has not yet passed midnight and needs to be sent, a negative **Timestamp** will be used to reflect that the time for that message is prior to midnight.

The **Timestamp** field will contain the offset from the **Trade Date** of the **Time Reference** message.

Time Reference messages will be included in a spin response.

Table 1. Time Reference

Field Name	Offset	Length	Data Type	Description
<i>Message Type</i>	0	1	T	Time Reference message
Timestamp	1	8	Timestamp	Timestamp
<i>Midnight Reference</i>	9	10	Numeric	Midnight Eastern Time reference time for subsequent Timestamp values, expressed as number of whole seconds since the Epoch (Midnight January 1, 1970 UTC).

Field Name	Offset	Length	Data Type	Description
<i>Time</i>	19	10	Numeric	Number of whole seconds elapsed since the start of the current Eastern Time calendar day, derived by converting the current Eastern wall clock time (HH:MM:SS) to seconds. On Daylight Saving Time transition days, <i>Time</i> reflects wall clock seconds and does not adjust for the UTC offset change. On a DST spring-forward day, the maximum value will be 82,799 (23 hours). On a DST fall-back day, values between 3,600 and 7,199 will appear twice. Recipients requiring unambiguous absolute timestamps should use <i>Midnight Reference</i> in the Time Reference message.
<i>Trade Date</i>	29	8	Numeric	Current Trade Date as represented by YYYYMMDD
<i>\n</i>	37	1	\n	End of message

Top of Book Update Messages

There are extended, expanded, long and short forms of bid and ask updates. Short form messages are sent if the symbol is less than five characters, the price is less than or equal to 999.99, and the size can be expressed in five characters. Expanded form messages are sent if the symbol is greater than six characters and accommodate larger symbol sizes possible through the ISRA plan. Extended form messages are sent if the price exceeds the maximum allowed for a long form price data type.

Bid/Ask Update Messages

Replace the previous Top of Book bid/offer for a symbol.

Extended Bid Update Message Fields (Server)

Table 1. Extended Bid Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	N	Extended Bid Update message
<i>Symbol</i>	1	8	Alpha	Symbol
<i>Bid Price</i>	9	14	Price	Bid price; 0 if no bids
<i>Bid Quantity</i>	23	6	Numeric	Bid size; 0 if no bids
<i>\n</i>	29	1	\n	End of message

Expanded Bid Update Message Fields (Server)

Table 1. Expanded Bid Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	E	Expanded Bid Update message
<i>Symbol</i>	1	8	Alpha	Symbol
<i>Bid Price</i>	9	10	Price	Bid price; 0 if no bids
<i>Bid Quantity</i>	19	6	Numeric	Bid size; 0 if no bids
<i>\n</i>	25	1	\n	End of message

Long Bid Update Message Fields (Server)

Table 1. Long Bid Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	B	Long Bid Update message
<i>Symbol</i>	1	6	Alpha	Symbol
<i>Bid Price</i>	7	10	Price	Bid price; 0 if no bids
<i>Bid Quantity</i>	17	6	Numeric	Bid size; 0 if no bids
<i>\n</i>	23	1	\n	End of message

Short Bid Update Message Fields (Server)

Table 1. Short Bid Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	b	Short Bid Update message
<i>Symbol</i>	1	4	Alpha	Symbol
<i>Bid Price</i>	5	5	Price	Bid price; 0 if no bids
<i>Bid Quantity</i>	10	5	Numeric	Bid size; 0 if no bids
<i>\n</i>	15	1	\n	End of message

Extended Ask Update Message Fields (Server)

Table 1. Extended Ask Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	n	Extended Ask Update message
<i>Symbol</i>	1	8	Alpha	Symbol
<i>Ask Price</i>	9	14	Price	Ask price; 0 if no offers
<i>Ask Quantity</i>	23	6	Numeric	Ask size; 0 if no offers
<i>\n</i>	29	1	\n	End of message

Expanded Ask Update Message Fields (Server)

Table 1. Expanded Ask Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	e	Expanded Ask Update message
<i>Symbol</i>	1	8	Alpha	Symbol
<i>Ask Price</i>	9	10	Price	Ask price; 0 if no offers
<i>Ask Quantity</i>	19	6	Numeric	Ask size; 0 if no offers
<i>\n</i>	25	1	\n	End of message

Long Ask Update Message Fields (Server)

Table 1. Long Ask Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	A	Long Ask Update message
<i>Symbol</i>	1	6	Alpha	Symbol
<i>Ask Price</i>	7	10	Price	Ask price; 0 if no offers
<i>Ask Quantity</i>	17	6	Numeric	Ask size; 0 if no offers
<i>\n</i>	23	1	\n	End of message

Short Ask Update Message Fields (Server)

Table 1. Short Ask Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	a	Short Ask Update message

Field Name	Offset	Length	Type/(Value)	Description
<i>Symbol</i>	1	4	Alpha	Symbol
<i>Ask Price</i>	5	5	Price	Ask price; 0 if no offers
<i>Ask Quantity</i>	10	5	Numeric	Ask size; 0 if no offers
<i>\n</i>	15	1	\n	End of message

Two-Sided Update Messages

Replaces both the previous bid and offer for a symbol.

Expanded Two-Sided Update Message Fields (Server)

Table 1. Expanded Two-Sided Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	F	Long Two-Sided Update message
<i>Symbol</i>	1	8	Alpha	Symbol
<i>Bid Price</i>	9	10	Price	Bid price; 0 if no bids
<i>Bid Quantity</i>	19	6	Numeric	Bid size; 0 if no bids
<i>Ask Price</i>	25	10	Price	Ask price; 0 if no offers
<i>Ask Quantity</i>	35	6	Numeric	Ask size; 0 if no offers
<i>\n</i>	41	1	\n	End of message

Long Two-Sided Update Message Fields (Server)

Table 1. Long Two-Sided Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	U	Long Two-Sided Update message
<i>Symbol</i>	1	6	Alpha	Symbol
<i>Bid Price</i>	7	10	Price	Bid price; 0 if no bids
<i>Bid Quantity</i>	17	6	Numeric	Bid size; 0 if no bids
<i>Ask Price</i>	23	10	Price	Ask price; 0 if no offers
<i>Ask Quantity</i>	33	6	Numeric	Ask size; 0 if no offers
<i>\n</i>	39	1	\n	End of message

Short Two-Sided Update Message Fields (Server)

Table 1. Short Two-Sided Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	u	Short Two-Sided Update message
<i>Symbol</i>	1	4	Alpha	Symbol
<i>Bid Price</i>	5	5	Price	Bid price; 0 if no bids
<i>Bid Quantity</i>	10	5	Numeric	Bid size; 0 if no bids
<i>Ask Price</i>	15	5	Price	Ask price; 0 if no offers
<i>Ask Quantity</i>	20	5	Numeric	Ask size; 0 if no offers

Field Name	Offset	Length	Type/(Value)	Description
\n	25	1	\n	End of message

Extended Two-Sided Update Message Fields (Server)

Table 1. Extended Two-Sided Update Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	d	Long Two-Sided Update message
<i>Symbol</i>	1	8	Alpha	Symbol
<i>Bid Price</i>	9	14	Price	Bid price; 0 if no bids
<i>Bid Quantity</i>	23	6	Numeric	Bid size; 0 if no bids
<i>Ask Price</i>	29	14	Price	Ask price; 0 if no offers
<i>Ask Quantity</i>	43	6	Numeric	Ask size; 0 if no offers
\n	49	1	\n	End of message

Example

Long/Short Bid Update and **Long/Short Ask Update** messages interleaved with Seconds and Milliseconds messages (**Client Heartbeat** messages are not shown):

```
T34348«
M110«
aQID_0394500200«
bRIMM1312200100«
bRIMM1312200400«
M118«
BZVZZT_0000123400001100«
M801«
BZVZZT_0000123500000100«
UQQQQ__00004870002402000000487100000200«
T34349«
M009«
aSPY_1417005500«
bIWM_0727700500«
BQQQQ__0000487000240000«
uQID_039441200000394500300«
```

Trade Messages

When an execution occurs, a message is sent which includes the cumulative volume and last price and size. Multiple executions which occur concurrently will be compressed into a single update for bandwidth savings. TOP does not send a trade message for every individual fill.

As with book updates, short, long, expanded, and extended form execution messages will be sent. The expanded version of the **Trade** message accommodates larger symbol sizes possible through the ISRA plan. The extended version of the **Trade** message accommodates prices that exceed the maximum allowed for a long form price data type.

In the event of a trade break or correction, it is possible that the cumulative volume will decrease from the previous update.

Extended Trade Message Fields (Server)

Table 1. Extended Trade Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	r	Extended Trade message
<i>Symbol</i>	1	8	Alpha	Symbol
<i>Last Price</i>	9	14	Price	Last trade price
<i>Last Quantity</i>	23	6	Numeric	Last trade quantity
<i>Cumulative Volume</i>	29	9	Numeric	Cumulative number of shares traded today
<i>\n</i>	38	1	\n	End of message

Expanded Trade Message Fields (Server)

Table 1. Expanded Trade Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	f	Expanded Trade message
<i>Symbol</i>	1	8	Alpha	Symbol
<i>Last Price</i>	9	10	Price	Last trade price
<i>Last Quantity</i>	19	6	Numeric	Last trade quantity
<i>Cumulative Volume</i>	25	9	Numeric	Cumulative number of shares traded today
<i>\n</i>	34	1	\n	End of message

Long Trade Message Fields (Server)

Table 1. Long Trade Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
<i>Message Type</i>	0	1	V	Long Trade message
<i>Symbol</i>	1	6	Alpha	Symbol
<i>Last Price</i>	7	10	Price	Last trade price
<i>Last Quantity</i>	17	6	Numeric	Last trade quantity
<i>Cumulative Volume</i>	23	9	Numeric	Cumulative number of shares traded today
<i>\n</i>	32	1	\n	End of message

Short Trade Message Fields (Server)

Table 1. Short Trade Message Fields (Server)

Field Name	Offset	Length	Type/(Value)	Description
Message Type	0	1	v	Short trade message
Symbol	1	4	Alpha	Symbol
Last Price	5	5	Price	Last trade price
Last Quantity	10	5	Numeric	Last trade quantity
Cumulative Volume	15	7	Numeric	Cumulative number of shares traded today
\n	22	1	\n	End of message

Example

Trade messages interleaved with quote updates:

T34348«
M110«
bRIMM1312200400«
bRIMM1312200100«
vRIMM13122003001200400«
M801«
VSPY___0001379800000100024250601«

Administrative Messages

Trading Status Message Fields

The **Trading Status** message is used to indicate the current trading status of a security. A **Trading Status** message will be sent whenever a security's trading status changes.

Trading Status of S will be implied at system startup. T will be sent as securities are available for trading. A will be distributed when orders can be accepted for queuing in preparation for the market open.

Sequenced **Trading Status** messages are sent upon system start up for all active securities with **Trading Status** = S (suspended). **Trading Status** messages will continue to be published upon symbol state changes, such as at the beginning of order acceptance.

Table 1. Trading Status Message Fields

Field Name	Offset	Length	Type/(Value)	Description
Message Type	0	1	t	Trading Status Message
Symbol	1	8	Alpha	Symbol
Halt Status	9	1	Alpha	A = Accepting Order for Queuing H = Halted Q = Quote-Only (Cboe Listings) S = Exchange Specific Suspension T = Trading
Reg SHO Action	10	1	Alphanumeric	0 = No price test in effect 1 = Reg SHO price test restriction in effect
Reserved1	11	1	Alpha	Reserved
Reserved2	12	1	Alpha	Reserved
\n	13	1	\n	End of message

References

For more information on Cboe Symbology, please refer to the [Cboe Titanium U.S. Symbology Reference](#).

Support

Please direct questions or comments regarding this specification to tradedesk@cboe.com.

Revision History

Document Version	Date	Description
1.0	06/16/08	Initial Version 1.0.
1.0.1	06/26/08	Corrected Typos in symbology table.
1.0.2	10/06/08	Revised wording to reflect transition to Bats Exchange.
1.0.3	12/03/08	Moved Symbology reference to a separate document.
1.0.4	08/26/09	Removed SRO quote reference.
1.1.0	01/12/10	Expanded form messages created to support larger symbol size.
1.1.1	04/06/10	Converted specification to new document format. Implemented support for 8 character symbols.
1.1.2	04/15/10	Updated FIX reference for BYX.
1.2.0	10/23/10	Added Trading Status message definition (Message Type = t). Added Trading Status fields to Expanded Spin Message (Message Type = s). Deprecated Short Spin Message (Message Type = S).
1.2.1	04/16/14	Reference added for availability of the TOP protocol to EDGA and EDGX platforms that will be implemented in the NY5 datacenter.
1.2.2	02/18/15	Update to Time Update Message (Milliseconds) to indicate messages are sent from Server and not by Client.
1.2.3	02/27/15	Updated Trading Status message with new Halt Status definitions.
1.3.0	02/19/16	Bats branding/logo changes.
1.3.1	10/17/17	Cboe branding/logo changes.
1.3.2	07/14/21	Updated Cboe Symbology Reference Hyperlink/Trade Desk email.
1.3.3	03/15/24	Added new Extended Spin (server) , Extended Bid Update (Server) , Extended Ask Update (Server) , and Extended Trade (Server) messages (effective 06/17/24).
1.3.4	05/09/24	Added new Extended Two-Sided Update (server) message (effective 06/17/24).
1.3.5	05/21/24	Updated Extended Two-Sided Update Message Type to "d" (effective 06/17/24).
1.3.6	09/06/24	Effective 11/13/24, Trading Status messages will be sent upon system start up rather than at the start of order acceptance.
1.3.7	10/09/24	Effective 11/13/24, clarified initial Trading Status messages will be sent upon system start up in addition to sending at the start of order acceptance.
1.3.8	01/15/25	Updated with Cboe Titanium branding.
1.3.9	06/30/26	Updated Timestamp data type to indicate that negative offsets are possible and will have a minus sign '-' in the left most location. Added Time Reference Message Fields , effective 11/02/26 on BZX and EDGX.