

**TRADELOGIQ
MARKETS INC.**

Omega ATS and Lynx ATS
Level 1 ITCH 5.0 Specification

v. 1.01

Revision History

Date	Revision	Description of Change
March 3, 2020	1.00	Base Line
January 30, 2022	1.01	<p>Added values 'B' and 'R' to Event Code of System Event Message to indicate Market-Wide Circuit Breaker halt and resumption.</p> <p>CUSIP will no longer be published in Stock Directory and Extended Stock Directory messages. The format/ layout of the Stock Directory messages will remain unchanged, the field will be blank and reserved for future use.</p>



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1 Overview

Tradelogiq ITCH 5.0 is the outbound protocol for our direct market data feed offered by Tradelogiq which applies to both Omega ATS' and Lynx ATS' multicast feeds. There are deviations from the standard ITCH format and Tradelogiq encourages users to go through the document to ensure their feed processors are set up correctly.

The protocol features the following data elements:

- Quote data: Tradelogiq will provide Quote data using the standard ITCH format
- Execution messages: These reflect regular executions; trade amend and trade cancellation
- Administrative messages: Session level messages, symbol state changes and symbol directory messages are included:
- Symbol status messages are used to inform market participants when a security is halted or released for trading.
- Symbol Directory messages provide security data such as the mapping of the Symbol to the Instrument ID as well as information on each security.
- Session messages such as start of day, end of day and emergency market halt/resume.

2 Architecture

The ITCH 5.0 feed is made up of a series of sequenced messages that make up the ITCH 5.0 protocol. These are typically delivered using a higher level protocol that takes care of sequencing and delivery guarantees.

Tradelogiq utilizes the SoupTCP protocol or the QTP protocol as the higher level delivery protocol for ITCH 5.0. Please refer to the documents below for details. ITCH is an outbound market data feed only. The ITCH protocol does not support order entry.

- Tradelogiq SoupBinTCP Specification (SoupBinTCP Protocol)
- Tradelogiq QTP64 Multicast Specification (MoldUDP64 Protocol)

2.1 Data Types

Numeric fields are all big-endian (network byte order) binary encoded integers. Unless otherwise noted, they are unsigned.

Prices are integer fields 6 whole numbers and 4 decimal digits.

Timestamp is an integer and represents nanoseconds since midnight. (The same format as Itch L2)

Alphanumeric fields are left justified, ASCII fields and padded on the right with spaces.

2.2 Session Level Messages

Please, refer to high level protocol specification.

2.3 Level 1 Market Data Messages

The following represent all information subscriber should expect to receive on daily basis.

2.3.1 Quote Message for level 1 market data

Below Message is used to relay Quotation Report. Tradelogiq’s BBO will broadcast real-time updates every time Tradelogiq’s top of book changes.

Quote Message				
Name	Offset	Length	Data type	Description
Message Type	0	1	Alphanumeric	W – Quotation Report
Reserved	1	1	Alpha	Reserved
Stock Symbol	2	10	Alphanumeric & ‘.’	Stock Identifier for which BBO quotation message is being generated
TimeStamp	12	8	Integer	Nanoseconds since midnight. (000 for nanosecond value)
Best Bid Price	20	8	Price	Denotes best bid price on Tradelogiq’s books either OMEGA or LYNX
Best Bid Size	28	4	Integer	Denotes the total number of shares available for display on Tradelogiq’s order books at the best bid price
Best Ask Price	32	8	Price	Denotes best ask price on Tradelogiq’s order books either OMEGA or LYNX
Best Ask Size	40	4	Integer	Denotes the total number of shares available for display on Tradelogiq’s order books at the best ask price

2.3.2 Trade Message

Following messages is used to relay all transactions available from or reported by Tradelogiq's two trading books for the current business day.

Trade Report				
Name	Offset	Length	Data type	Description
Message Type	0	1	Alphanumeric	T = Trade Report
Conditions	1	5	Alpha	W – Bypass X – Internal Cross E – Odd Lot Note: Field may be blank
Stock Symbol	6	10	Alphanumeric & ' ' .	Stock Identifier
TimeStamp	16	8	Integer	Nanoseconds since midnight. (000 for nanosecond value)
Trade ID	24	4	Integer	Indicates the internal number of the given trade transaction
Trade Price	28	8	Integer	The price associated with the trade transaction being reported.
Trade Size	36	4	Integer	Number of shares on the trade transaction
Buy Broker	40	2	Integer	Buy Side Broker Number or 1 for Anonymous
Sell Broker	42	2	Integer	Sell Side Broker Number or 1 for Anonymous

2.3.3 Trade Bust/Cancellation Message

If trade is cancelled/busted during the day Trade Bust Message will be sent

Trade Bust				
Name	Offset	Length	Data type	Description
Message Type	0	1	Alphanumeric	N = Trade Cancel
Reserved	1	1	Alpha	Reserved
Stock Symbol	2	10	Alphanumeric & ' ' .	Stock Symbol
TimeStamp	12	8	Integer	Nanoseconds since midnight. (000 for nanosecond value)
Trade ID	20	4	Integer	Indicates the internal number of the given trade transaction

2.3.4 Trade Amend/Correction Message

Trade amendments during the day will send below message.

Trade Correction Message				
Name	Offset	Length	Data type	Description
Message Type	0	1	Alphanumeric	M=Amend
Reserved	1	1	Alpha	Reserved
Stock Symbol	2	10	Alphanumeric & ':	Stock Identifier
TimeStamp	12	8	Integer	Nanoseconds since midnight. (000 for nanosecond value)
Original Trade ID	20	4	Integer	Original internal number of the given trade transaction
Original Trade Price	24	8	Price	Original price associated with the trade transaction
Original Trade Size	32	4	Integer	Trade Size reported on the original trade transaction
Corrected Trade Price	36	8	Price	Price associated with the trade correction reported
Corrected Trade Size	44	4	Integer	Number of shares with the trade correction

2.3.5 System Event Message

The system event message is used to signal a market or a data feed handler event

Trade Bust				
Name	Offset	Length	Data type	Description
Message Type	0	1	Alphanumeric	S = System Event Message
Event Code	1	1	Alphanumeric	See Below For codes
Reserved	2	2	Alpha	
TimeStamp	4	8	Integer	Nanoseconds since midnight. (000 for nanosecond value)

Supported System Event codes on daily basis

Code	Description
O	Start of messages; The start of day message is the first message sent out in a trading day
S	Start of System Hours; This message indicate that Tradelogiq order books are Open and ready to start accepting order
Q	Start of Market Hours; This message is intended to indicate that Market Hours order are available for execution
M	End of Market Hours; This message is intended to indicate that Market Hours are no longer available for execution
E	End of System Hours; It indicates that Tradelogiq order books are now closed and will not accept new orders. It is still possible to receive broken trade messages and order delete messages after the End of System message

C	End of Messages. This is always the last message sent in any trading day.
B	Trading Halted due to Market-Wide Circuit Breaker
R	Trading Resumed following Market- Wide Circuit Breaker

2.3.6 Stock Directory Message

At start of each trading day, OSI disseminates stock directory messages for supported securities.

Stock Directory Message				
Name	Offset	Length	Data Type	Description
Message Type	0	1		R - Stock Directory Message
Market	1	1	Alphanumeric	Indicates the listing market of security: 't' = TSX 'v' = Venture 'c' = CNSX 'q' = Nasdaq Canada 'o' = Omega 'z' = Aequitas
Stock	2	10	Alphanumeric & '.'	Denotes the security symbol on Omega ATS and Lynx ATS
Timestamp	12	8	Integer	Nanoseconds since midnight. (000 for nanosecond value)
Board Lot Size	20	4	Integer	Indicates a board lot size
Instrument ID	24	2	Integer	Internal instrument identifier for Omega ATS and Lynx ATS
Shortable	26	1	Alpha	Indicates the short status of a security: 'E' = short exempt 'S' = shortable 'N' = not shortable
Dividend Indicator	27	1	Alpha	'A' = Annual 'S' = Semi Annual 'Q' = Quarterly 'M' = Monthly
Reserved	28	9	Alphanumeric	Reserved for future use
Currency	37	3	Alpha	Indicates currency for the symbol 'CAD' = Canadian Dollars 'USD' = US Dollars

2.3.7 Extended Stock Directory Message

Extended Stock Directory are for Special stock symbols eg warrants debentures rights

Extended Stock Directory Message				
Name	Offset	Length	Data Type	Description
Message Type	0	1	Alphanumeric	r - Stock Directory Message
Market	1	1	Alphanumeric	Indicates the listing market of security: 't' = TSX 'v' = Venture 'c' = CNSX 'q' = Nasdaq Canada 'o' = Omega 'z' = Aequitas
Stock	2	10	Alphanumeric & '.'	Denotes the security symbol on Omega ATS and Lynx ATS
Timestamp	12	8	Integer	Nanoseconds since midnight. (000 for nanosecond value)
Board Lot Size	20	4	Integer	Indicates a board lot size
Instrument ID	24	2	Integer	Internal instrument identifier for Omega ATS and Lynx ATS
Shortable	26	1	Alpha	Indicates the short status of a security: 'E' = short exempt 'S' = shortable 'N' = not shortable
Frequency	27	1	Alpha	'A' = Annual 'S' = Semi Annual 'Q' = Quarterly 'M' = Monthly
Reserved	28	9	Alphanumeric	Reserved for future use
Currency	37	3	Alpha	Indicates currency for the symbol 'CAD' = Canadian Dollars 'USD' = US Dollars
Security Type	40	1	Alpha	'd' = Debentures 'r' = Rights 'n' = Notes 'w' = Warrants
Expiry Date	41	8	Date	Date of expiry in the format YYYYMMDD
Description	49	20	Alphanumeric	Description of Security
Reserved	69	3	Alpha	Reserved

2.3.8 Stock Status Message

This message indicates the current trading status of a stock. At the start of day, the feed will send a stock status message for each of the symbols trading on Tradelogiq order books Omega and Lynx. If there are trading action for the symbol (eg: being halted, resume trading) this message will be sent.

Stock Status Message				
Name	Offset	Length	Data type	Description
Message Type	0	1	Alphanumeric	H - Stock Trading Action
Trading State	1	1	Alpha	'H' = Halted 'T' = Trading
Stock	2	10	Alphanumeric & '.'	Denotes the security symbol on Omega ATS and Lynx ATS
Timestamp	12	8	Integer	Nanoseconds since midnight. (000 for nanosecond value)
Reason	20	4	Alphanumeric	'R' = Regulatory Halt 'B' = Business Halt Note: Field may be blank