TRADELOGIQ MARKETS INC.

Level 1
Market Data Specification

ITCH 5.0 v. 1.0

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Document History

Version	Date	Changes	Author
1.00	Mar. 03, 2020	Based Line	MP

Contents

1 Overview

Tradelogiq ITCH 5.0 is the outbound protocol for our direct market data feed offered by Tradelogiq Markets Inc. 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 update every time Tradelogiq's book BBO is updated throughout the trading.

Quote Message				
Name	**Offset**	**Length**	**Data type**	**Description**
Message Type	0	1	Alphanumeric	W – Quotation Report
Reserved	1	1	Alpha	Reserved
StockSymbol	2	10	Alphanumeric & '.'	Stock Identifier for which QBBO 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 book either OMEGA ATS or LYNX ATS
Best Bid Size	28	4	Integer	Denotes the total number of shares available for display on Tradelogiq's book at the best bid price
Best Ask Price	32	8	Price	Denotes best ask price on Tradelogiq's book either OMEGA ATS or LYNX ATS
Best Ask Size	40	4	Integer	Denotes the total number of shares available for display on Tradelogiq's book 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
StockSymbol	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 Event code on daily basis

Code	Description
O	Start of messages; The start if day message is the first message sent out in a trading day
S	Start of System Hours; This message indicate that omega is 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 tha Omega is 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.

2.3.6 Stock Directory Message

At start if each trading day, Tradelogiq 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
CUSIP	28	9	Alphanumeric	9 character code for identifying North American securities for clearing and settlement
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
CUSIP	28	9	Alphanumeric	9 character code for identifying North American securities for clearing and settlement
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's markets. If there are trading actions 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