



GLIMPSE Market Data Specification for Equities

Version 1.0

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1. Introduction

This document explains access to the equities market data services of Osaka Digital Exchange (ODX) PTS via the GLIMPSE protocol. It describes the service's configuration and specifies the application messages. For further information and inquiries regarding market data services or for questions concerning connectivity please contact ODX PTS Technical Support via email to: sysope@odx.co.jp.

2. Overview

The message protocol of GLIMPSE provides the current state of the ODX PTS execution system. It utilizes the same messages as the ODX PTS ITCH protocol.

The point-to-point transport layer for GLIMPSE messages is [SoupBinTCP](#).

3. Data Types

Integer fields are unsigned big-endian (network byte order) binary encoded numbers.

Alpha fields are left-justified and padded on the right with spaces.

Price fields are 4 byte Integer fields. When converted to fixed point number format they have 9 whole number digits and 1 decimal place. The maximum representable value is 214,748,364.6 (7FFFFFFE hex).

Quantity fields are 4 byte Integer fields with a maximum representable value of 2,147,483,647 (7FFFFFFF hex).

4. Service Usage

A client establishes a connection to the GLIMPSE host with a requested sequence number of 1 in the login request packet. The service will respond with a snapshot, sending out messages containing the current state of the ODX PTS execution system. The final message in the snapshot provides the next sequence number of the real-time ITCH market data feed at the time the snapshot was taken.

5. Outbound Sequenced Messages

Outbound messages are generated by the GLIMPSE host and received by the client's application.

5.1 Timestamp – Seconds Message

The timestamp is separated into two parts to improve bandwidth efficiency: the 'seconds' part comes as a standalone **Timestamp – Seconds Message** and reflects the number of seconds past midnight that the message was generated, and the 'nanoseconds' part comes as a field within individual messages as the number of nanoseconds since the most recent **Timestamp – Seconds Message**.

A **Timestamp – Seconds Message** will be sent for every second in which there is at least one other message type sent.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is T = Timestamp – Seconds Message.
Timestamp – Seconds	1	4	Integer	Number of seconds since midnight.

5.2 System Event Message

System Event Messages signal data feed, system and market events.

The snapshot includes only the Start of Messages and End of Messages system events that occurred up to the time the snapshot was taken.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is S = System Event Message.
Timestamp – Nanoseconds	1	4	Integer	Number of nanoseconds since last Timestamp – Seconds Message.
Group	5	4	Alpha	Orderbook group identifier. Blank if system wide event. Values: DAY = Daytime market
System Event	9	1	Alpha	Refer to the System Events table below.

Table 1: System Events

Event	Description
O	Start of Messages – Always the first message sent in any trading day excepting Timestamp – Seconds Messages.
C	End of Messages – Always the last message sent in any trading day.

5.3 Price Tick Size Message

Price Tick Size Messages define a set of price tick size tables.

Price Tick Size Messages are sent before the Orderbook Directory Messages.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is L = Price Tick Size Message.
Timestamp – Nanoseconds	1	4	Integer	Number of nanoseconds since last Timestamp – Seconds Message.
Price Tick Size Table Id	5	4	Integer	Price tick size table identifier.
Price Tick Size	9	4	Integer	Price tick size.
Price Start	13	4	Integer	Start of price range for this price tick size.

5.4 Orderbook Directory Message

Orderbook Directory Messages provide information about orderbooks available in the ODX PTS execution system.

Note that reference prices are provided via Order Added Messages.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is R = Orderbook Directory Message.
Timestamp – Nanoseconds	1	4	Integer	Number of nanoseconds since last Timestamp – Seconds Message.
Orderbook Id	5	4	Integer	4 digit Quick code.
Orderbook Code	9	12	Alpha	International Securities Identification Number (ISIN).

Name	Offset	Length	Type	Comments
Group	21	4	Alpha	Orderbook group identifier. Values: DAY = Daytime market
Round Lot Size	25	4	Integer	Number of shares that represent a round lot.
Price Tick Size Table Id	29	4	Integer	Price tick size table identifier.
Price Decimals	33	4	Integer	Number of decimal places in price fields. Value is 1.
Upper Price Limit	37	4	Integer	Maximum tradable price.
Lower Price Limit	41	4	Integer	Minimum tradable price.

5.5 Trading State Message

A Trading State Message indicates the current trading status of an orderbook.

Trading State Messages are sent for all orderbooks which are eligible for trading at the time the snapshot was taken. If there is no Trading State Message for a particular orderbook, clients should assume that the orderbook was suspended at the time the snapshot was taken.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is H = Trading State Message.
Timestamp – Nanoseconds	1	4	Integer	Number of nanoseconds since last Timestamp – Seconds Message.
Orderbook Id	5	4	Integer	4 digit Quick code.
Group	9	4	Alpha	Orderbook group identifier. Values: DAY = Daytime market
Trading State	13	1	Alpha	Current trading status. Values: T = Trading V = Suspended

5.6 Short Selling Price Restriction State Message

A Short Selling Price Restriction State Message indicates the current short selling price restriction status of an orderbook.

Short Selling Price Restriction State Messages are sent for all orderbooks which have short selling price restriction in effect at the time the snapshot was taken. If there is no Short Selling Price Restriction State Message for a particular orderbook, clients should assume that the orderbook had no short selling price restriction at the time the snapshot was taken.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is Y = Short Selling Price Restriction State Message.

Name	Offset	Length	Type	Comments
Timestamp – Nanoseconds	1	4	Integer	Number of nanoseconds since last Timestamp – Seconds Message.
Orderbook Id	5	4	Integer	4 digit Quick code.
Group	9	4	Alpha	Orderbook group identifier. Values: DAY = Daytime market
Short Selling State	13	1	Alpha	Current short selling price restriction status. Values: 0 = No price restriction 1 = Price restriction in effect

5.7 Order Added Message

An Order Added Message indicates that an order exists in the ODX PTS execution system's displayable book. This message includes an Order Number which is unique per day per orderbook group.

There are two variations of the Order Added Message.

5.7.1 Order Added Message – No Attributes

An Order Added Message will be generated for normal orders present in the system.

Reference prices are provided via Order Added Messages with Order Number value of zero. Initial reference prices are sent after the Orderbook Directory Messages. A manual reference price update will generate an additional Order Added Message.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is A = Order Added Message.
Timestamp – Nanoseconds	1	4	Integer	Number of nanoseconds since last Timestamp – Seconds Message.
Order Number	5	8	Integer	Reference number of the accepted order. Zero indicates a reference price update.
Buy/Sell Indicator	13	1	Alpha	Side of the order. Values: B = Buy S = Sell Ignore if reference price update.
Quantity	14	4	Integer	Total number of shares added to the book. Ignore if reference price update.
Orderbook Id	18	4	Integer	4 digit Quick code.
Group	22	4	Alpha	Orderbook group identifier. Values: DAY = Daytime market
Price	26	4	Integer	Price of the order. For a reference price update, a value of 214,748,364.7 (7FFFFFFF hex) denotes no reference price available.

5.7.2 Order Added with Attributes

An Order Added with Attributes Message will be generated for orders with market specific attributes present in the system.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is F = Order Added with Attributes Message.
Timestamp – Nanoseconds	1	4	Integer	Number of nanoseconds since last Timestamp – Seconds Message.
Order Number	5	8	Integer	Reference number of the accepted order.
Buy/Sell Indicator	13	1	Alpha	Side of the order. Values: B = Buy S = Sell
Quantity	14	4	Integer	Total number of shares added to the book.
Orderbook Id	18	4	Integer	4 digit Quick code.
Group	22	4	Alpha	Orderbook group identifier. Values: DAY = Daytime market
Price	26	4	Integer	Price of the order.
Attribution	30	4	Alpha	Reserved. Always blank.
Order Type	34	1	Alpha	Type of the order. Values: Q = DLP order

5.8 End of Snapshot Message

The End of Snapshot Message provides the next sequence number of the real-time ITCH market data feed at the time the snapshot was taken.

The ITCH market data consumer should begin to process the real-time feed from the sequence number provided in this message.

Name	Offset	Length	Type	Comments
Message Type	0	1	Alpha	Value is G = End of Snapshot Message.
Sequence Number	1	8	Integer	ITCH market data feed sequence number.

Revision History

Date	Version	Description
2022-05-02	1.0	Initial revision.