ASX Trade MDF Specification

Version 1.1.0 July 2025

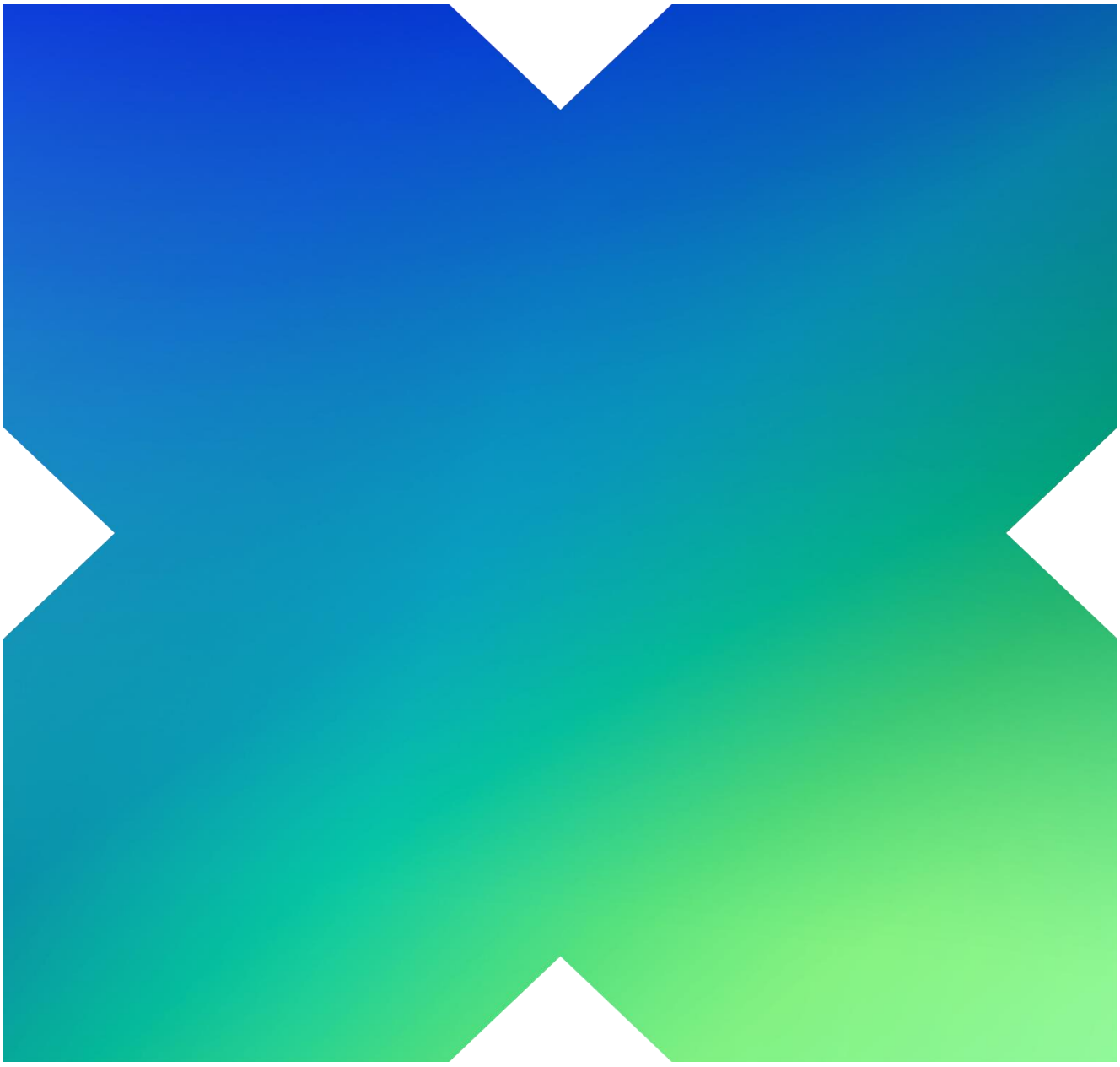

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Table of Contents

1 Introduction

The purpose of this document is to describe the ASX Market Data Feed (MDF) protocol.

1.1 Support

For any queries relating to MDF please contact ASX Customer Technical Support (CTS) team by
Email: cts@asx.com.au or
Phone: 1800 663 053 (+61 2 9227 0372 from outside Australia).

1.2. Version History

This document has been revised according to the table below:

Version	Date	Comment
1.0.0	June 2025	Initial Version
1.1.0	July 2025	2.4.7 Aggressor (offset 43) variable of the Trade Ticker Message is updated

1.3. MDF Overview

MDF is an ITCH-like direct data feed product that distributes complementary market data not contained in the regular ITCH feed. To help interpret the message flow, the MDF feed contains similar Reference Data messages as ITCH. MDF uses the same MoldUDP64 transport protocol as ITCH.

MDF features the following data elements:

- Time Messages - Timestamps
- Reference Data messages
- Event and State Change Messages
- Price Messages
- Market Announcements

1.3.1. Architecture

The MDF feed is made up of a series of sequenced messages. Each message is variable in length based on the message type. The messages that make up the MDF protocol are typically delivered using a higher-level protocol that takes care of sequencing and delivery guarantees. For MDF this is typically MoldUDP but a SoupBin endpoint is also delivered.

MoldUDP64 is a light-weight networking protocol built on top of UDP that provides a mechanism for listeners to detect and re-request missed packets.

Each message is explicitly sequence numbered. If a packet loss is detected by the client, it can re-request that packet from the MoldUDP64 Rewind gateway, and it will be resent as a UDP unicast to the requesting client.

1.3.2. Data Types

All Integer fields are composed of binary encoded numbers.

Type	Size	Notes
Numeric	1,2,4 or 8 bytes	Unsigned big-endian binary encoded numbers. NOTE: The transport layer, SoupBinTCP or MoldUDP64, uses big-endian for its numeric values.

Alpha	variable	Composed of non-control ISO8859-1(Latin-1) encoded bytes. Left justified and padded on the right with spaces.
Price	8 bytes	Prices are signed integer fields. Number of decimals is always set to 4.
Date	4 bytes	Four byte integer value derived from the Numeric data type. The decoded value represents a Date in YYYYMMDD-format.
Timestamp	8 bytes	UNIX Time (number of nanoseconds since 1970-01-01 00:00:00 UTC).

2 Message Formats

The MDF feed is composed of a series of messages that describe prices sent from the Trading system and market announcements. It also contains messages for basic reference data of the order books as well as state changes.

2.1 Time Messages

For bandwidth efficiency reasons, timestamps are separated into two pieces:

Timestamp portion	Message Type	Notes
Seconds	Standalone message	Unix time (number of seconds since 1970-01-01 00:00:00 UTC) NOTE: A Timestamp – Second message will be disseminated for every second for which there is at least one payload message.
Nanoseconds	Field within individual messages	Reflects the number of nanoseconds since the most recent Timestamp-Seconds message that the payload message was generated.

2.1.1 Seconds Message

This message is sent every second for which at least one MDF message is being generated. The message contains the number of seconds since the start of 1970-01-01 00:00:00 UTC, also called Unix Time.

Table Timestamp - Seconds Message:

Name	Offset	Length	Value	Notes
Message Type	0	1	"T"	T - Seconds Message
Second	1	4	Numeric	Unix time (number of seconds since 1970-01-01 00:00:00 UTC)

2.2 Reference Data Messages

2.2.1 Order Book Directory

At the start of each trading day, Order book directory messages are disseminated for all active securities, including halted securities, in the system.

Note:
Intra-day transmissions of this message may occur when new order books are added to the system. Updates to existing order books may also be represented by intra-day Order book Directory messages.

Name	Offset	Length	Value	Notes
Message Type	0	1	"R"	R - Order book Directory Message
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	Denotes the primary identifier of an order book. NOTE: Expired Order book IDs may be reused for new instruments.
PartitionId	9	1	Numeric	Is always zero.

Symbol	10	32	Alpha	Orderbook symbol
Long Name	42	32	Alpha	Human-readable long name of orderbook
ISIN	74	12	Alpha	ISIN code identifying security.
Asset name	86	32	Alpha	Is currently always set to “N/A”.
Financial Product	118	1	Numeric	Values: 0 = Not applicable 1 = Option, 2 = Forward, 3 = Future, 4 = FRA, 5 = Cash, 6 = Payment, 7 = Exchange Rate, 8 = Interest Rate Swap, 9 = REPO, 10 = Synthetic Box Leg/Reference, 11 = Standard Combination, 12 = Guarantee 13 = OTC General 14 = Equity Warrant 15 = Security Lending
Trading Currency	119	3	Alpha	Trading currency.
Number of decimals in Price	122	2	Numeric	This value defines the number of decimals used in price for this order book. NOTE: A value of 256 means that the instrument is traded in fractions (each fraction is 1/256).
Number of decimals in Nominal Value	124	2	Numeric	This value defines the number of decimals in Nominal Value.
Round Lot Size	126	4	Numeric	Indicates the quantity that represent a round lot for the issue
Nominal Value	130	8	Numeric	Nominal value.
Number of Legs	138	1	Numeric	Number of legs. NOTE: Only applicable for combination instruments.
Commodity Code (Underlying Order Book ID)	139	4	Numeric	ID of the Underlying instrument.
Strike Price	143	8	Price	NOTE: Only applicable for derivative instruments.
Expiration Date	151	4	Date	Date of expiration. NOTE: Only applicable for derivative instruments. For instruments that do not have an Expiration date the value will be set to 0.
Number of decimals in Strike Price	155	2	Numeric	This value defines the number of decimals used in Strike Price for this order book. NOTE: Only applicable for derivative instruments.
Option Type	157	1	Numeric	Values: 1 = Call, 2 = Put NOTE: A value of 0 indicates that Put or Call is un- defined for the order book.
Market ID	158	4	Numeric	Market ID.

Exchange ID	162	4	Numeric	Exchange code.
Number of decimals in	166	2	Numeric	Currently not in use.
Sector Code	168	4	Alpha	Sector Code (Set to N/A in SR15)
Number of Tradable Equities	172	8	Numeric	The number of shares/equities held by all shareholders
Number of Out-standing Equities	180	8	Numeric	The number of shares/equities available for trading at the exchange, also called floating shares. The number of tradable equities can be less than the number of outstanding equities, if there are restricted shares that cannot be traded.
Last Traded Date	188	4	Date	This is the last date the asset can be traded
Contract Multiplier	192	8	Numeric	The number of Underlying Assets one unit of the derivatives contract is based on. This is also frequently referred to as Contract size.
Multiplier	204	8	Numeric	Specifies the ratio or multiply factor used to convert from contracts to shares. Also referred to as the Price quotation factor
Decimals In Multiplier	208	2	Numeric	The number of decimals used for Multiplier or Contract Multiplier
Min Order Quantity	210	8	Numeric	For ASX this will be set to 1
Max Order Quantity	218	8	Numeric	For ASX this is the Max value for the field
Number of Settlement Days	226	4	Numeric	The number of settlement days applicable for trades in this order book
Primary	230	1	Numeric	Primary Order Book. Values: 1=Yes, 2=No
Test Order Book	231	1	Numeric	Test Order Book Values: 1=Yes, 2=No
Alias Name	232	32	Alpha	Alias name of orderbook. The Square Bracket Value from the LongName
Settlement Date	264	4	Numeric	The settlement date.
Tradable	268	1	Numeric	1 = Yes, 0 = No
Externally Price Sourced	269	1	Numeric	Indicates if the Item is externally priced Specifies whether the data source for distributed prices is sent into the system with an external transaction. Possible values: 1= Yes, 2 = No
Deliverable	270	1	Numeric	Defines if a series can be delivered or not (cash settlement): 1 = Yes, 2 = No
Price Unit	271	1	Numeric	Possible values: 1 = Yield, 2 = Price, 3 = Points, 4 Yield difference, 5 IMM Index, 6 = Basis points, 7 = Inverted yield, 8 = Percentage of Nominal, 9 = Dirty Price

Issuer	272	32	Alpha	Issuer of underlying.
Foreign Ownership Restriction	304	1	Numeric	Foreign ownership restriction. Incorporated outside country. Possible values: 1 = Yes, 2 = No.
Last Trading Time	305	6	Alpha	Needed as some instruments cease trading earlier than the actual close on their final day used in conjunction with Last Traded Date. Set to null if no Last Trading time
Option Style	311	1	Numeric	The Execution Style. 0 = Not Applicable, 1 = American, 2 = European, 3 = Asian.
Minimum Value for Initial Trade Report	312	8	Numeric	The required minimum trade value for initial trade reports.
CFI Code	320	6	Alpha	Place Holder not populated in SR15. Currently it is set to blank. This is a 6 Letter Code, CIF Code in line with the ISO Standard for Classification of Financial Instruments.
Upper-level series	326	32	Alpha	The Upper-Level series. Only populated for instruments that have an Underlying.
Upper Series Level Order- book ID	358	4	Numeric	The Order Book ID of the Upper-Level series. Only populated for instruments that have an Underlying. Zero otherwise.

2.2.2 Exchange Directory

At the start of each trading day, Exchange directory messages are disseminated for all active Exchanges in the system.

Name	Offset	Length	Value	Notes
Message Type	0	1	"e"	e - Exchange Directory Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Exchange ID	5	4	Numeric	Exchange code. Note: Exchange ID 255 disseminated is the default 'system' exchange and contains no underlying tradable instruments.
Exchange Name	9	32	Alpha	Exchange Name.

2.2.3 Market Directory

At the start of each trading day, Market directory messages are disseminated for all active Markets in the system.

Name	Offset	Length	Value	Notes
Message Type	0	1	"m"	m - Market Directory Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Market ID	5	4	Numeric	Market code.
Market Name	9	32	Alpha	Market Name.
Market Type	41	1	Numeric	Valid Values: 1 = Stock, 2 = Fixed Income, 3 = Currency, 4 = Power/Energy, 5 = Commodity, 6 = Payment, 7 = Index, 8 = General

Index Market	42	4	Numeric	Indicates if the market is an Index Market. Possible Values: 1 = Yes, 2 = No

2.2.4 Combination Order Book Leg Directory

This message provides a mapping between a combination order book and one of the combination leg order books.

A Combination instrument (standard or Tailor-Made) is a synthetic instrument consisting of two or more real instruments. In MME, combination instruments are set up as regular order books in which orders can be placed.

The Combination instrument and each of the leg instruments are represented by Order book Directory messages in MDF. The Combination Order book Leg message represents a mapping between a combination order book and one of its leg order books. For each combination order book, one Combination Order book Leg message will be generated per leg that the combination consists of.

Note:
Intra-day transmissions of this message may occur when new combination order books are added to the system. This is typically the case for tailor-made combinations. Updates to existing combination order books may also be represented by intra-day Order book Directory messages.

Name	Offset	Length	Value	Notes
Message Type	0	1	"M"	M - Combination Order book Directory Message
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Combination Order book ID	5	4	Numeric	Denotes the primary identifier of an order book. NOTE: Expired Order book IDs may be reused for new instruments.
Leg Order book ID	9	4	Numeric	Order book ID of Leg instrument
Leg Side	13	1	Alpha	Values: B = Buy Leg C = Sell Leg
Leg Ratio	14	4	Numeric	

2.2.5. Tick Size Table Entry

This message contains information on a tick size for a price range. Together, all Tick Size messages with the same Order book ID form a complete Tick Size Table. Each Order book has a set of Tick Size Table Entries to define its tick size table.

Name	Offset	Length	Value	Notes
Message Type	0	1	"L"	L - Tick Size Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	The order book this entry belongs to.
Tick Size	9	8	Numeric	Tick Size for the give price range
Price From	17	8	Price	Start of price range for this entry.
Price To	25	8	Price	End of price range for this entry. Zero (0) means infinity.

2.2.6. Corporate Action Entry Message

This message is used to display the entries of assigned Corporate Action Codes to Order Books. Corporate action codes are used to inform participants about circumstances that have impact on

the trading in a specific order book. The only business logic tied to a Corporate Action Entry is that orders may be cancelled when the start date occur.

Name	Offset	Length	Value	Notes
Message Type	0	1	"C"	C -Corporate Action Entry Message
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Corporate Action ID	5	4	Numeric	Identifier of a Corporate Action. (Not applicable for SR15. Set to 0)
Order Book ID	9	4	Numeric	The order book for which the Corporate Action applies.
Corporate Action Code	13	4	Alpha	The name of the 'CA' Code.
Corporate Action Type	17	1	Alpha	The type of the 'CA' Code. Values: B = Basis of Quotation, S=Status Note
Start Date	18	4	Date	The first date the CA is active. (Not applicable for SR15. Set to 0)
End Date	22	4	Date	The last date the CA is active. (Not applicable for SR15. Set to 0)
Record Date	26	4	Date	The record date for the CA. Informational field only. (Not applicable for SR15. Set to 0)
Status	30	1	Numeric	Values: 1 = CA Active, 2 = CA Inactive
Action	31	1	Numeric	Values: 1 = New, 2 = Updated, 3 = Canceled (Not applicable for SR15. Set to 0)

2.2.7. Order Book Directory Extension Message

This message provides additional information that are valid only for Fixed Income instruments.

Note – The message is sent out for all instruments. For instruments where the fields are applicable, they will be populated. For other instruments the fields will be set to 0.

3.

Name	Offset	Length	Value	Notes
Message Type	0	1	"f"	f -Order book Directory Extension Message
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	Denotes the primary identifier of an order book.
Accrued interest round-	9	4	Numeric	Accrued interest rounding decimals
Accrued interest up/- down	13	1	Numeric	Accrued interest up/down. Possible values: 0=Blank 1 = Up, 2 = Down.
Calculation convention	14	1	Numeric	Calculation convention. Possible values: 0 = Blank, 1 = Compound, 2 = Compound Simple, 3 = Simple MM, 4 = Discount, 5 = US Treasury, 6 = Proceed
Clean price rounding	15	4	Numeric	Clean price rounding decimals
Clean price up/- down	19	4	Numeric	Clean price up/down. Possible values: 0=Blank, 1 = Up, 2 = Down
Coupon Frequency	23	4	Numeric	Number of coupons per year

Coupon Interest	27	8	Numeric	Coupon interest for the underlying. Only applicable for interest related under- lying's
Coupon From Date	35	4	Date	Dated date. Contains the date of the underlying from when the coupon interest is calculated. Format: YYYYMMDD.
Issue Date	39	4	Date	Contains the issue date of the underlying if it has a limited lifetime. Normally only applicable for bonds. Format: YYYYMMDD.
Maturity Date	43	4	Date	Contains the maturity date of the underlying if it has a limited lifetime. Normally only applicable to bonds. Format: YYYYMMDD.
Day Calculation Rule	47	1	Numeric	Day Calculation Rule. Possible values: 0=Blank, 1 = ACTACT, 2 = ACTAFB, 3 = EU30360, 4 = US30360, 5 = ACT365, 6 = ACT360
Day count convention	48	1	Numeric	Day count convention. Possible values: 0=Blank, 1 = ACTACT, 2 = ACTAFB, 3 = EU30360, 4 = US30360, 5 = ACT365, 6 = ACT360
Ex coupon period	49	4	Date	Ex coupon period
Dividend	53	8	Numeric	The dividend for the stock
Fixed Income Type	61	8	Numeric	Type of fixed income security. Possible values: 0 = Not Applicable, 1 = Bill, 2 = Bond, 3 = Index Linked Bonds, 4 = Bond Floating, 5 = Lottery Bond, 6 = Con- veritable Bond, 7 = Structured Bond, 8 = Fixing, 9 = Credit Certificates
Rate Determination Days	69	4	Numeric	Specifies number of rate determination days
Yield convention	73	4	Numeric	Yield convention. Number of months.
End of month count convention	77	4	Numeric	End of month count convention. Possible values: 0=Blank, 1 = SAME, 2 = LAST360, 3 = LAST
First Settlement Date	81	4	Date	First settlement date in YYYYMMDD format.
Coupon Div Date	85	4	Date	Coupon date for bond underlying or dividend date for stock underlying. Format: YYYYMMDD.
Date Books Close	89	4	Date	Books close date for bond underlying. This is the date before the coupon date on which the owner must be registered to receive the coupon payment. Format: YYYYMMDD.
Effective Expiration Date	93	4	Date	The effective expiration date is the actual expiration date of the series. Format: YYYYMMDD.
Proceed Date	97	4	Date	Proceed date for fixed income underlying, YYYYMMDD. If the last payment falls on a non-business day, the payment and the maturity is pushed forward to the next business day, the so-called Proceeds Date.
Set End Con- sideration	101	1	Numeric	End consideration. Possible values: 1 = Yes, 2 = No
Set Start Con- sideration	102	1	Numeric	Start consideration. Possible values: 1 = Yes, 2 = No

2.3 Event and State Change Messages

2.3.1 System Event Message

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

Name	Offset	Length	Value	Notes
Message Type	0	1	"S"	S – System Event Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Event Code	5	1	Alpha	The system supports the following event codes on a daily basis: "O" = Start of Messages. Outside of time stamp messages, the start of day message is the first message sent in any trading day. "C" = End of Messages. This is always the last message sent in any trading day. "E" - Done for day. No More Trades, Trade Reporting "Done for Day:" e.g. Clearing and settlements may use this to trigger their activity as there will be no more trades

2.3.2 Order Book State Message

The Order book state message relays information on state changes.

Name	Offset	Length	Value	Notes
Message Type	0	1	"O"	O – Order Book State Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	Orderbook identifier
State Name	9	20	Alpha	Name of the Order Book State
Display Name	29	20	Alpha	The display name of the state.

2.3.3 Business Date Message

The Business Date message relays information on the current business date.

Name	Offset	Length	Value	Notes
Message Type	0	1	"B"	B – Business Date Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Business Date	5	4	Date	Today's Business Date

2.3.4 End of Recovery Message

The End of Recovery message is received when a recovery is done and it has reached the end.

Name	Offset	Length	Value	Notes
Message Type	0	1	"g"	g – End of Recovery Message.

2.4 Price Messages

2.4.1 Equilibrium Price Message

This message is used when auctions occur. The message provides the changes in equilibrium price.

Name	Offset	Length	Value	Notes
Message Type	0	1	"Z"	Z – Equilibrium Price Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	
Available Bid Quantity at Equilibrium Price	9	8	Numeric	Quantity at equilibrium price on the bid side.
Available Ask Quantity at Equilibrium Price	17	8	Numeric	Quantity at equilibrium price on the ask side.
Equilibrium Price	25	8	Price	Equilibrium Price.
Best Bid Price	33	8	Price	Best Bid Price.
Best Ask Price	41	8	Price	Best Ask Price.
Best Bid Quantity	49	8	Numeric	Best Bid Quantity.
Best Ask Quantity	57	8	Numeric	Best Ask Quantity.
Equilibrium Quantity	65	8	Numeric	The tradable quantity at equilibrium price.

Note: If Price is set to decimal -2147483648, this means that no price is available.

2.4.2 Market by Price (MBP) Incremental Message

The Market by Price Message is used to publish order book Prices per Price level.

Table Market by Price Message:

Name	Offset	Length	Value	Notes
Message Type	0	1	"b"	b – Market by Price Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	
Maximum Level	9	1	Numeric	The maximum price level (for example 10). The value may be changed during the day. Price levels > Maximum Level are not applicable and shall be deleted by a consumer of the Market by Price Message.
Number of Level items	10	1	Numeric	The number of times the item fields below are repeated. Number of Level items is >= 0. If, value is 0 then no Array of Items will be used.
Array of items	11+n*24	24 * Number of Level items	Numeric	Array of Price Update items. The item counter n for the Offset is counted from 0 up to Number of Level items -1 when Number of Level items > 0.

Table Price Update Item:

Name	Offset	Length	Value	Notes
Level Update Action	0	1	Alpha	Type of market update action. 'N' = New – New price level added, or the number of price levels reduced compared to the last update with the contents of the price levels have also changed (Ex: An order action removing all configured price levels and the next available price levels are less than the configured price levels) 'C' = Change – The number of price levels remain the same compared to the last update, however the contents (price, quantity, number of orders) of the price level changed 'D' = Delete From – Price level removed compared to the last update
Side	1	1	Alpha	Valid values 'B' = Bid 'A' = Ask
Level	2	1	Numeric	The numeric order of the price level, where "1" is the first price level.
Price	3	8	Price	Price for the Level. Value is set to decimal -9223372036854775808 and not used for a Price Delete Item (when update action is 'D' = Delete From).
Quantity	11	8	Numeric	Visible quantity for the Level. Value is 0 and not used for a Price Delete Item (when update action is 'D' = Delete From).
Number of Deletes	19	1	Numeric	Number of Levels deleted in this update. (The value is the same in all price update items). Value is > 0 and used for a Price Delete Item (when update action is 'D' = Delete From). Value is 0 and not used for a Price Update Item (when update action is 'N' or 'C').
Number of orders	20	8	Numeric	Number of orders at this level. (When update action is 'D' = Delete, the Number of orders are the total number of orders prior to the delete at this price level).

Note: If Price is set to decimal the minimum long value, this means that no price is available.

Note: Number of Deletes will provide the number of Levels deleted.

The following examples on different scenarios and how this field is populated.

Scenario 1 –

Enter Order at Price X

Cancel the Order

In the MPB message after the Cancel: No of Delete = 1 and No of Order = 1.

Scenario 2 –

Enter Order1 at Price X

Enter Order 2 at Price X

Send an opposite order that trades fully against both order 1 and order 2

In the MPB message after the Trade: No of Deletes = 1 and Number of Orders = 2.

Scenario 3 –

Enter Order1 at Price X

Enter Order 2 at Price X

Enter Order 3 at Price X

Send an opposite order that trades fully against both order 1 and order 2

In the MPB message after the Trade: No of Deletes = 1 and Number of Orders = 3

Scenario 4 –

Enter Order1 at Price X

Enter Order 2 at Price Y

Send an opposite order that trades fully against both order 1 and order 2

In the MPB message after the Trade: No of Deletes = 2 and Number of Orders = 1 at the price level where the order deletion commenced.

2.4.3 Trade Statistics Message

The Trade Statistics Message is used to publish Trade Statistics per Orderbook ID.

The values in this message are for the current Trading Day.

Name	Offset	Length	Value	Notes
Message Type	0	1	"I"	I – Trade Statistics Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	
Open Price	9	8	Price	
High Price	17	8	Price	
Low Price	25	8	Price	
Last Price	33	8	Price	
Last Auction Price	41	8	Price	
Last Quantity	49	8	Numeric	
Turnover Quantity	57	8	Numeric	Calculated as sum of Traded Quantity. Includes Reported Trades Quantity.
Reported Trades Turnover Quantity	65	8	Numeric	Calculated as sum of Reported Trades Quantity.
Turnover Value	73	8	Numeric	Calculated as sum of Traded Price * Traded Quantity.
Number of trades	81	8	Numeric	The total number of trades.
Trend indicator	89	1	Alpha	'N' = Unset 'U' = Up 'D' = Dow ' ' = Unchanged

Note: If Price is set to decimal the minimum price value, this means that no price is available.

2.4.4 Reference Price Message

The Reference Price Message is used to publish Reference Prices per Price Types.

Name	Offset	Length	Value	Notes
Message Type	0	1	"Q"	Q – Price Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	
Price Type	9	1	Numeric	Type of price published. Valid values: 0 = Externally Injected 3 = Previous Last Paid Price 4 = Settlement Price 5 = Ever last price
Price	10	8	Price	
Timestamp	18	8	Timestamp	The time (in UTC) when the Price was updated (if available).
Price Date	26	4	Date	The date of the price. Implemented as the date of the updated time stamp in Local time.

Note: If Price is set to decimal the minimum price value, this means that no price is available.

2.4.5 Index Message

This message is used for sending index price information.

Name	Offset	Length	Value	Notes
Message Type	0	1	"J"	J – Index Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	
Last Price	9	8	Price	Current day Index last price.
Timestamp	17	8	Timestamp	Time of Index computation (in UTC).
Change Previous	25	4	Numeric	Change since previous
Change Yesterday	29	4	Numeric	Change since yesterday
Trend Indicator	33	1	Alpha	'N' = No Change, 'U' = Up, 'D' = Down, ' ' = No trend available
Point of movement	34	4	Numeric	Number of points of movement.

2.4.6 Open Interest Message

The Open Interest Message is used to publish Open Interest.

Name	Offset	Length	Value	Notes
Message Type	0	1	"h"	h– Open Interest Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	
Open Interest	9	8	Numeric	
TransactTime	17	8	Numeric	Currently set to -9223372036854775808 (minimum value of an 8 byte signed integer).

2.4.7 Trade Ticker Message

The Trade Ticker Message is used to publish Trade Ticker.

Name	Offset	Length	Value	Notes
Message Type	0	1	"i"	i – Trade Ticker Message.
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	
Deal ID	9	8	Numeric	
Deal Source	17	1	Numeric	Valid values: 0 Not set or not disseminated. 1 Matched by system automatically. 3 Matched outside exchange, different brokers, trade report. 5 Matched outside exchange, one broker, trade report, crossing. 7 Standard Combination order matched against another combination order or against a single order by the exchange electronically. 20 Trade matched in an auction. 36 TMC order matched against another combination order or against a single order by the exchange electronically. 43 Combination order matched against outright legs. 44 Booked transaction, resulting from Unintentional Crossing Prevention. 45 Booked transaction, resulting from Unintentional Crossing Prevention during an auction. 46 Centre Point Preference Matching. 47 Executions in Centre Point. 48 Booked transaction in Centre Point, resulting from Unintentional Crossing Prevention. 50 Centre Point Any Price Block Trade. 51 Preference Centre Point Any Price Block Trade 90 Post Close Auto 91 Post Close Booked Transaction
Price	18	8	Price	
Quantity	26	8	Numeric	
Deal Time	34	8	Numeric	Nano seconds since Epoch
Action	42	1	Numeric	Valid values: 1 = New 2 = Updated (Not used by ASX) 3 = Canceled
Aggressor	43	1	Alpha	Valid values: ‘’ = Unknown ‘B’ = Bid ‘A’ = Ask
Trade Report Type	44	2	Numeric	0 (zero) indicates not a trade report.
Printable	46	1	Numeric	0 = False, 1 = True

As of Date	47	4	Date	As of Date
BOQ List	51	6	Alpha	Corporate action codes. May be null filled.
Participant ID Buy	57	5	Alpha	Participant ID of participant on Buy side if public. Null otherwise.
Order ID Buy	62	8	Numeric	ID of order on buy side if public. Zero otherwise.
Participant ID Sell	70	5	Alpha	Participant ID of participant on Sell side if public. Null otherwise.
Order ID Sell	75	8	Numeric	ID of order on sell side if public. Zero otherwise.
Trade slip number	83	4	Numeric	TSN.
Exchange Order Type	87	4	Numeric	Exchange Order Type. Valid Values: 0 Undefined 8 Price Stabilisation 64 Centre Point
Trade Condition	91	1	Numeric	Trade Condition. Valid Values; 2 Internal Trade/Crossing 8 Buy Write (Equity/Derivative Combination) 10 Buy Write (Equity/Derivative Combination) which is an Internal Trade/Crossing

2.4.8 Price Limits Message

The message provides an update to the price limits or circuit breaker limits for an order book, either the static or dynamic limits.

Name	Offset	Length	Value	Notes
Message Type	0	1	"k"	k – Price limits Message
Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	The Order book the Price Limits update is for
Upper Limit	9	8	Price	The Upper Price Limit. Min Long Value means limit is removed/no limits
Lower Limit	17	8	Price	The Lower Price Limit. Min Long Value means limit is removed/no limits
Type	25	1	Numeric	1 = Price Limits, 2 = Circuit Breaker Limits
Category	26	1	Numeric	Valid Values 1 = Static Limits, 2 = Dynamic Limits
Reference Price	27	8	Price	The reference price used for the calculated static or dynamic Price lim- its

2.5 Market Announcements

2.5.1 Market Announcement Message

The Market Announcement Message is used to publish Market Announcements for Order Books, Markets Underlyings or Exchanges.

Name	Offset	Length	Value	Notes
Message Type	0	1	"N"	N – Market Announcement Message.

Timestamp – Nanoseconds	1	4	Numeric	Nanoseconds portion of the timestamp.
Order book ID	5	4	Numeric	If field is not used then the value 0 is used.
Exchange ID	9	4	Numeric	If field is not used then the value 0 is used.
Market ID	13	4	Numeric	If field is not used then the value 0 is used.
Message Information Type	17	1	Numeric	Kind of message sent in announcement. Valid values: 1 = Company Announcement 2 = Market Message 3 = Static Line 4 = Notice Received
Message Source	18	80	Alpha	A description of the source of the message, e.g. the market control.
Message Priority	98	1	Numeric	1 = Low Priority 2 = Medium Priority 3 = High Priority 4 = Critical Priority
Header	99	80	Alpha	Header of the message. Used to specify a short description of a message.
Items URL	179	1	Numeric	Characters in Document URL link.
Document URL	180	255	Alpha	The URL link to somewhere else on the Web where more information may be found, typically a document.
Number of Message Items	435	1	Numeric	The number of message items in the following array. Each message item is a row in the message. A maximum of 10 items may be used. If there are no items in the message the value 0 will be used.
Array of Message items	436 + n*80	80* Number of Message Items	Alpha	Array with rows in the message. Each row has a maximum of 80 characters. The item counter n for the Offset is counted from 0 up to Number of Message Items -1 when Number of Message Items > 0.
Commodity Code	436 + n * 80 + 1	4	Numeric	The commodity code of the underlying if sent on underlying level. Zero otherwise.

Note: If market announcement is sent for several Markets/Underlyings/Instruments in one message (rendering several destination items in BI81 broadcast), one message per level/destination will be sent.

3 Glimpse Overview

A separate connection for obtaining snapshots, called Glimpse for MDF, can optionally be provided to enable the user to reconnect intraday and be current with the live stream. Glimpse is thus only used in case snapshot is required for the MDF feed. Connecting to Glimpse intraday obtains a snapshot of a subset of messages configured for this stream. For the Market By Price (MBP) message the snapshot includes all Price Levels available at the time of the login. The snapshot of the stream is taken at the point in time when the user connects and logs in to Glimpse. The snapshot is tagged with a sequence number, the point at which one can listen to the live stream. The Glimpse snapshot is available in Soup connections only.

Note: Market Announcements, System Events, Open Interest and Equilibrium Price Messages are not included in the Glimpse snapshot.

Glimpse for MDF has the following special data element:

- Snapshot Message

4 Glimpse Message Formats

Glimpse for ITCH uses the same messages as MDF. For Glimpse specific messages, see below.

4.1 End of Snapshot Message

The end of snapshot message returns the current MDF sequence number to be used when connecting to the MDF feed.

To maintain a real-time order display, firms should begin to process real-time MDF messages beginning with the sequence number stated in this snapshot message + 1.

Name	Offset	Length	Value	Notes
Message Type	0	1	"G"	G – End of Snapshot Message.
Sequence Number	1	20	Alpha	MDF SoupBin TCP sequence number when the snapshot was taken. To be used when logging in to the MDF SoupBin TCP feed. NOTE: While Glimpse is a binary feed, the SoupBin TCP uses ASCII characters to represent the sequence number.

Note: Market Announcements, System Events and Equilibrium Price Messages is not included in the Glimpse snapshot.

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