High level differences between TSX QUANTUMFEED feeds and TSX and TSXV TL2 feeds

PROTOCOL
>**TSX and TSXV Level 2 feeds** use the **STAMP** protocol, which is a variable length, tag-based protocol.

>**TSX QUANTUMFEED Level 1 and Level 2 feeds** use the new **TMX eXtreme Message Transfer (XMT)** protocol, which is a binary fixed-length protocol

BUSINESS MESSAGES

TSX TL2 Business Messages	TSX QuantunFeed Level 2 Version 2.0 Business Messages
Trading Tier Status Message	Symbol Status Message
Symbol Status Message	Order Book Message
Order Book Message	Order Book Terms Message
MBX Message	Order Booked
Order/Cancel Confirmation Message	Order Booked Terms
Trade Report	Order Cancelled
Stock Status Notification	Order Cancelled Terms
Market State Update	Order Price-Time Assign
General message	Order-Price Time Assign Terms
Moc Imbalance Notification	Trade Report
	Trade Report Terms
	Trade Cancel
	Trade Cancel Terms
	Trade Correction
	Trade Correction Terms
	Stock Status Notification
	Market State Update
	MOC Imbalance Notification
	Assign Cop
	Assign Cop No orders
	Assign Limit Price

TSX TL1 Business Messages	TSX QuantunFeed Level 1 Version 1.0 Business Messages
Equity Trade Message	Symbol Status Message
MOC Imbalance Message	Equity Quote
MOC Price Movement Message	Equity Trade Message
Equity Quote Message	Equity Trade Cancelled Message
Equity Halt Message	MOC Imbalance Message
Resume Trading of Halted Equity Message	Stock Status Message
Fixed Income Quote Message	
Equity Trade Cancellation Messages	
S&P/TSX Official Index Level Messages	
S&P/TSX Interim Index Level Messages	
Bulletins Messages	
Equity Summary Messages	
Equity Dividend Messages	
Equity 52 Week High/Low Messages	
Equity Volume, Value, Transactions (VVT) Messages	
Beginning of Equity Summary Message	
Beginning of Index Summary Message	
End of Sales Message	
End of Transmission Message	
Circuit Assurance Message	
Re-Set Sequence Number Message	

QuantumFeed Level 2 ver.2.0 (and TL2 Tags/Values not used)

Start of Day Business Messages

Symbol Status	
Field Name	**Note**
Message Header	
Symbol	Alphanumeric
BoardLot	Binary
Currency	Alphanumeric
CUSIP	Alphanumeric
Face Value	Binary
Last Sale	Binary
StockGroup	Binary
BusinessAction	Not Required
BusinessClass	Not Required
Exchange ID	Removed
TradingSystemTimeStamp	Removed
AcceptAnonymous	Removed
BuyParticipation	Removed
MGF-Setting	Removed
MGF-Volume	Removed
SellParticipation	Removed
SpecialistName	Removed
SpecialistPhoneNumber	Removed
StockHaltDate	Removed
StockState	Removed
SymbolFullName	Removed
LastMessage	Removed
MocEligible	Removed
NumberofMessages	Removed
OpeningTime	Removed
ProductType	Removed
TotalNumberOfMessages	Removed

Order Book	
Field Name	**Note**
Message Header	
Symbol	Alphanumeric
BrokerNumber	Numeric
Order Side	Alphanumeric
Order Id	Binary
Price	Binary
Volume	Binary
PriorityTimeStamp	Binary
BusinessAction	Not Required
BusinessClass	Not Required
TradingSystemTimeStamp	Removed
NonResident	Removed
SettlementTerms	Removed
LastMessage	Removed
Exchange ID	Removed
NumberOfMessages	Removed
TotalNumberOfMessages	Removed
PrivateKeyIdentifier	Removed

Order Book -Terms	
Field Name	**Note'**
Message Header	
Symbol	Alphanumeric
BrokerNumber	Numeric
Order Side	Alphanumeric
Order Id	Binary
Price	Binary
Volume	Binary
PriorityTimeStamp	Binary
NonResident	Alphanumeric
SettlementTerms	Alphanumeric
Settlement Date	Binary
BusinessAction	Not Required
BusinessClass	Not Required
TradingSystemTimeStamp	Removed
LastMessage	Removed
Exchange ID	Removed
NumberOfMessages	Removed
TotalNumberOfMessages	Removed
PrivateKeyIdentifier	Removed

Intra Day Business Messages

Assign Cop

Field Name	Note
Message Header	
Symbol	Alphanumeric
Calculated Opening Price	Binary
Order Side	Alphanumeric
BrokerNumber -1	Binary
Order Id -1	Binary
---15 records per message--	--------------------
TradingSystemTimeStamp	Binary
BusinessAction	Not Required
BusinessClass	Not Required
Exchange ID	Removed
MBX_PartNumber	Not Required
MBX_TotalParts	Not Required
1*OrderKey	Not Required
1*price	Not Required

Note: there are 15 Broker/Order Ids per

Assign Limit

Field Name	Note
Message Header	
Symbol	Alphanumeric
Calculated Opening Price	Binary
Order Side	Alphanumeric
BrokerNumber -1	Binary
Order Id -1	Binary
Price - 1	
---15 records per message--	--------------------
TradingSystemTimeStamp	Binary
BusinessAction	Not Required
BusinessClass	Not Required
Exchange ID	Removed
MBX_PartNumber	Not Required
MBX_TotalParts	Not Required
1*OrderKey	Not Required
1*price	Not Required

Note: there are 15 Broker/Order Ids per

Stock Status

Field Name	Note
Message Header	
Symbol	Alphanumeric
Comment	Alphanumeric
Stock State	Alphanumeric
TradingSystemTimeStamp	Binary
BusinessClass	Not required
AcceptAnonymous	Removed
BlindOffsetAccepted	Removed
CalculatedClosingPrice	Removed
Currency	Removed
Exchange ID	Removed
MGF-Volume	Removed
MocEligibility	Removed
MocVwap	Removed
OpeningTime	Removed
SpecialistName	Removed
SpecialistPhoneNumber	Removed

Assign Cop No Orders

Field Name	Note
Message Header	
Symbol	Alphanumeric
Calculated Opening Price	Binary
TradingSystemTimeStamp	Binary
BusinessAction	Not Required
BusinessClass	Not Required
Exchange ID	Removed
MBX_PartNumber	Not Required
MBX_TotalParts	Not Required
1*OrderKey	Not Required
1*price	Not Required

MOC Imbalance

Field Name	Note
Message Header	
Symbol	Alphanumeric
Imbalance Side	Alphanumeric
Imbalance Volume	Binary
TradingSystemtimeStamp	Binary
BusinessClass	Not Required
ExchangeID	Removed

Market State Update

Field Name	Note
Message Header	
Market State	Alphanumeric
Stock Group	Binary
TradingSystemTimeStamp	Binary
Exchange ID	Removed
BusinessClass	Not Required

Intra Day Business Messages -Orders

Order Booked		Order Cancelled	
Field Name	**Note**	**Field Name**	**Note**
Message Header		Message Header	
Symbol	Alphanumeric	Symbol	Alphanumeric
Broker Number	Binary	Broker Number	Binary
Order Side	Alphanumeric	Order Side	Alphanumeric
Order Id	Binary	Order Id	Binary
Price	Binary	TradingSystemTimeStamp	Removed
Volume	Binary	BusinessAction	Not Required
PriorityTimeStamp	Binary	BusinessClass	Not Required
BusinessAction	Not Required	Price	Removed
BusinessClass	Not Required	Volume	Removed
ConfirmationType	Removed	PriorityTimeStamp	Removed
TradingSystemTimeStamp	Removed	ConfirmationType	Removed
ByPass	Removed	ByPass	Removed
CFOdOrderNumber	Removed	CFOdOrderNumber	Removed
NonResident	Removed	NonResident	Removed
SettlementTerms	Removed	SettlementTerms	Removed
Exchange ID	Removed	Exchange ID	Removed
PriorityVolume	Removed	PriorityVolume	Removed

Order Booked - Terms		Order Cancelled -Terms	
Field Name	**Note**	**Field Name**	**Note**
Message Header		Message Header	
Symbol	Alphanumeric	Symbol	Alphanumeric
Broker Number	Binary	Broker Number	Binary
Order Side	Alphanumeric	Order Side	Alphanumeric
Order Id	Binary	Order Id	Binary
Price	Binary	TradingSystemTimeStamp	Removed
Volume	Binary	BusinessAction	Not Required
Non Resident	Alphanumeric	BusinessClass	Not Required
Settlement Terms	Alphanumeric	Price	Removed
Settlement Date	Binary	Volume	Removed
PriorityTimeStamp	Binary	PriorityTimeStamp	Removed
BusinessAction	Not Required	ConfirmationType	Removed
BusinessClass	Not Required	ByPass	Removed
ConfirmationType	Removed	CFOdOrderNumber	Removed
TradingSystemTimeStamp	Removed	NonResident	Removed
ByPass	Removed	SettlementTerms	Removed
CFOdOrderNumber	Removed	Exchange ID	Removed
Exchange ID	Removed	PriorityVolume	Removed
PriorityVolume	Removed		

Intra Day Business Messages -Trade

Trade Report			Trade Cancelled			Trade Correction	
Field Name	**Note**		**Field Name**	**Note**		**Field Name**	**Note**
Message Header			Message Header			Message Header	
Symbol	Alphanumeric		Symbol	Alphanumeric		Symbol	Alphanumeric
Trade Number	Binary		Trade Number	Binary		Trade Number	Binary
Price	Binary		TradingSystemTimeStamp	Binary		Price	Binary
Volume	Binary		BusinessAction	Not Required		Volume	Binary
Buy Broker Number	Binary		BusinessClass	Not Required		Buy Broker Number	Binary
Buy Order Id	Binary		Price	Removed		Sell Broker Number	Binary
Buy Display Volume	Binary		Volume	Removed		Initiated By	Alphanumeric
Sell Broker Number	Binary		Buy Broker Number	Removed		Orig Trade Number	Binary
Sell Order Id	Binary		Buy Order Id	Removed		ByPass	Alphanumeric
Sell Display Volume	Binary		Buy Display Volume	Removed		Trade Time Stamp	Binary
ByPass	Alphanumeric		Sell Broker Number	Removed		Cross Type	Alphanumeric
Trade Time Stamp	Binary		Sell Order Id	Removed		TradingSystemTimeStamp	Binary
Cross Type	Alphanumeric		Sell Display Volume	Removed		BusinessAction	Not Required
TradingSystemTimeStamp	Binary		ByPass	Removed		BusinessClass	Not Required
BusinessAction	Not Required		Trade Time Stamp	Removed		BuyOrderNumber	Removed
BusinessClass	Not Required		Cross Type	Removed		Buy Display Volume	Removed
CFOdOrderNumber	Removed		CFOdOrderNumber	Removed		Sell OrderNumber	Removed
NonResident	Removed		NonResident	Removed		Sell Display Volume	Removed
OrigTradeNumber	Removed		OrigTradeNumber	Removed		CFOdOrderNumber	Removed
SettlementTerms	Removed		SettlementTerms	Removed		NonResident	Removed
TradeCorrection	Removed		TradeCorrection	Removed		SettlementTerms	Removed
Exchange ID	Removed		Exchange ID	Removed		TradeCorrection	Removed
ExtendedHours	Removed		ExtendedHours	Removed		Exchange ID	Removed
LastSale	Removed		LastSale	Removed		ExtendedHours	Removed
Moc	Removed		Moc	Removed		LastSale	Removed
BuyPriorityTimeStamp	Removed		BuyPriorityTimeStamp	Removed		Moc	Removed
SellPriorityTimeStamp	Removed		SellPriorityTimeStamp	Removed		BuyPriorityTimeStamp	Removed
						SellPriorityTimeStamp	Removed

Intra Day Business Messages Trades

Trade Report -Terms	
Field Name	Note
Message Header	
Symbol	Alphanumeric
Trade Number	Binary
Price	Binary
Volume	Binary
Buy Broker Number	Binary
Buy Order Id	Binary
Buy Display Volume	Binary
Sell Broker Number	Binary
Sell Order Id	Binary
Sell Display Volume	Binary
ByPass	Alphanumeric
Trade Time Stamp	Binary
NonResident	Alphanumeric
Settlement Terms	Alphanumeric
Settlement Date	Binary
Cross Type	Alphanumeric
TradingSystemTimeStamp	Binary
BusinessAction	Not Required
BusinessClass	Not Required
CFOdOrderNumber	Removed
OrigTradeNumber	Removed
TradeCorrection	Removed
Exchange ID	Removed
ExtendedHours	Removed
LastSale	Removed
Moc	Removed
BuyPriorityTimeStamp	Removed
SellPriorityTimeStamp	Removed

Trade Cancelled- Terms	
Field Name	Note
Message Header	
Symbol	Alphanumeric
Trade Number	Binary
TradingSystemTimeStamp	Binary
BusinessAction	Not Required
BusinessClass	Not Required
Price	Removed
Volume	Removed
Buy Broker Number	Removed
Buy Order Id	Removed
Buy Display Volume	Removed
Sell Broker Number	Removed
Sell Order Id	Removed
Sell Display Volume	Removed
ByPass	Removed
Trade Time Stamp	Removed
Cross Type	Removed
CFOdOrderNumber	Removed
NonResident	Removed
OrigTradeNumber	Removed
SettlementTerms	Removed
TradeCorrection	Removed
Exchange ID	Removed
ExtendedHours	Removed
LastSale	Removed
Moc	Removed
BuyPriorityTimeStamp	Removed
SellPriorityTimeStamp	Removed

Trade Correction- Terms	
Field Name	Note
Message Header	
Symbol	Alphanumeric
Trade Number	Binary
Price	Binary
Volume	Binary
Buy Broker Number	Binary
Sell Broker Number	Binary
Initiated By	Alphanumeric
Orig Trade Number	Binary
ByPass	Alphanumeric
Trade Time Stamp	Binary
NonResident	Alphanumeric
Settlement Terms	Alphanumeric
Settlement Date	Binary
Cross Type	Alphanumeric
TradingSystemTimeStamp	Binary
BusinessAction	Not Required
BusinessClass	Not Required
BuyOrderNumber	Removed
Buy Display Volume	Removed
Sell OrderNumber	Removed
Sell Display Volume	Removed
CFOdOrderNumber	Removed
NonResident	Removed
SettlementTerms	Removed
TradeCorrection	Removed
Exchange ID	Removed
ExtendedHours	Removed
LastSale	Removed
Moc	Removed
BuyPriorityTimeStamp	Removed
SellPriorityTimeStamp	Removed

QuantumFeed Level 1 ver.1.0 (and TL1Tags/Values not used)

Equity Trade	
Field Name	**Note**
Message Header	
Symbol	Alphanumeric
Trade Number	Binary
Price	Binary
Volume	Binary
Buy Broker Number	Binary
Sell Broker Number	Binary
ByPass	Alphanumeric
Trade Time Stamp	Binary
Settlement Terms	Alphanumeric
Cross Type	Alphanumeric
Last Sale Price	Binary
Opening Trade	Alphanumeric
Net Change Sign +/-	Not included
Net Change (price)	Not Included

Equity Quote	
Field Name	**Note**
Message Header	
Symbol	Alphanumeric
Bid Price	Binary
Bid Size	Alphanumeric
Ask Price	Binary
Ask Size	Binary
Markers	Not Included

Equity Trade	
Field Name	**Note**
Message Header	
Symbol	Alphanumeric
Trade Number	Binary
Price	Binary
Volume	Binary
Buy Broker Number	Binary
Sell Broker Number	Binary
Last Sale Price	Binary
Markers	Not included

MOC Imbalance	
Field Name	**Note**
Message Header	
Symbol	Alphanumeric
Imbalance Side	Alphanumeric
Imbalance Volume	Binary
TradingSystemtimeStamp	Binary