

BX BEST BID AND OFFER  
INTERFACE SPECIFICATION



# NASDAQ OMX BX Best Bid and Offer

For BX Trading Venue and BX Listing Market

NASDAQ OMX Global Data Products  
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## BX Best Bid and Offer (BX BBO)

### 1 Overview

#### 1.1 Product Description

BX Best Bid and Offer (BX BBO) is a direct data feed product offered by NASDAQ OMX to support the BX Trading Market and BX Listing Market upon launch. BX BBO provides the exchange's best bid and offer position for securities listed on the NASDAQ, New York Stock Exchange (NYSE), American Stock Exchange (Amex) and other U.S. regional exchanges including BX-listed securities upon launch of the BX listing market.

Market data distributors may use the BX BBO data feed to feed dynamically updating stock tickers, portfolio trackers, trade alert programs, time and quote graphs, and other display systems. For market data administration purposes, BX BBO is part of the BX Basic entitlement.

For pricing and ordering information:

1. Refer to [Market Data section](#) of the NASDAQ OMX Trader website.
2. Contact the [NASDAQ OMX Global Data Products Account Team](#) at +1 301 978 5307 or +45 33 93 33 66.

#### 1.2 Upcoming Product Enhancements

NASDAQ OMX has recently filed with the U.S. Securities and Exchange Commission (SEC) to establish listing standards for the BX exchange. NASDAQ OMX will begin accepting listing applications for the new BX listing market in 2010, pending SEC approval.

***Please note items within this document that have been grayed out, although supported technologically, will not be implemented until the launch of the BX Listing Market.***

### 2 Network Protocol Options

For direct data feed subscribers, NASDAQ OMX will offer the BX BBO data feed in the following protocol options:

- [SoupTCP](#)
- [MoldUDP](#)

In order to match the BX Basic entitlement structure, BX BBO will initially support three outbound channels for both protocol options. The BX BBO data set will be channelized based on the listing market of a security. BX BBO will support an additional outbound channel upon the launch of the BX listing market.

Data Channel	Securities coverage
1	NASDAQ-listed issues
2	NYSE-listed issues
3	Amex- and U.S. regional stock exchange-listed issues
4	BX-listed issues

### 3 Architecture

BX BBO will be made up of a series of sequenced messages. Each message is variable in length based on the message type and is composed of non-control ASCII bytes. The messages that make up the BX BBO protocol are typically delivered using a higher level protocol that takes care of sequencing and delivery guarantees.

### 4 Data Types

All numeric fields are represented in ASCII digits and are right-justified. Padding spaces appear on the left as necessary.

Prices are given in decimal format with 6 whole number places followed by 4 decimal digits. The whole number portion is padded on the left with spaces; the decimal portion is padded on the right with zeros. The decimal point is implied by position; it does not appear inside the price field.

Timestamp reflects the BX system time at which the outbound message was generated. BX states time as the number of milliseconds past midnight. The time zone is U.S. Eastern Time. All alpha fields are left-justified. Padding spaces appear on the right as necessary.

### 5 Message Formats

#### 5.1 System Event Message

The System Event message is used to signal key market or data feed control events. BX BBO will support the System Event messages.

SYSTEM EVENT MESSAGE				
Name	Offset	Length	Value	Notes
Time Stamp	0	8	Numeric	Time stamp
Message Type	8	1	Alphanumeric	S = System Event
Event Code	9	1	Alphanumeric	Denotes the type of event for which the message is being generated. See list below for allowable values.

On a daily basis, BX BBO will support the following event codes:

SYSTEM EVENT CODES – DAILY	
Code	Explanation
O	<i>Start of Transmissions:</i> Denotes that BX BBO has started its daily transmission schedule
S	<i>Start of System Hours:</i> This message indicates that BX is open and ready to start accepting orders.
Q	<i>Start of Market Hours:</i> This message is intended to indicate that Market Hours orders are available for execution.
M	<i>End of Market Hours:</i> This message is intended to indicate that Market Hours orders are no longer available for execution.
E	<i>End of System Hours:</i> It indicates that BX is now closed and will not accept any new orders today.
C	<i>End of Transmissions:</i> Denotes that BX BBO has completed its daily transmission schedule.

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In the event of an emergency market condition (EMC), BX BBO will also support the following event codes:

<b>SYSTEM EVENT CODES – AS NEEDED</b>	
<b>Code</b>	<b>Explanation</b>
A	<i>Emergency Market Condition – Halt:</i> This message is sent to inform BX market participants that the EMC is in effect. No trading is allowed during the EMC.
R	<i>Emergency Market Condition – Quote Only Period:</i> This message is sent to inform BX market participants that the EMC quotation only period is in effect.
B	<i>Emergency Market Condition – Resumption:</i> This message is sent to inform BX market participants that EMC is no longer in effect.

## 5.2 Administrative Messages

### 5.2.1 Stock Directory

At the start of each trading day, NASDAQ OMX BX disseminates stock directory messages for all active symbols in its market center system.

Market data vendors should process this message to populate the Financial Status Indicator (required display field) and the Market Category (recommended display field) for NASDAQ-listed and BX-listed issues.

STOCK DIRECTORY MESSAGE				
Name	Offset	Length	Value	Notes
Time Stamp	0	8	Numeric	Time Stamp.
Message Type	8	1	Alphanumeric	R = Stock Directory
Issue Symbol	9	6	Alphanumeric	Denotes the security symbol for the issue for which the directory message is being generated. For details on symbology, please refer to Appendix B.

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Market Category	15	1	Alphanumeric	<p>Denotes the listing market for the issue. The allowable values are:</p> <table border="1"> <thead> <tr> <th>Code</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>T</td> <td>Non-NASDAQ-Listed Issue (NYSE-, Amex-, and regional exchange-listed security)</td> </tr> <tr> <td>Q</td> <td>NASDAQ Global Select Market</td> </tr> <tr> <td>G</td> <td>NASDAQ Global Market</td> </tr> <tr> <td>S</td> <td>NASDAQ Capital Market</td> </tr> <tr> <td>B</td> <td>BX Listing Market</td> </tr> <tr> <td>&lt;Space&gt;</td> <td>Not available</td> </tr> </tbody> </table>	Code	Value	T	Non-NASDAQ-Listed Issue (NYSE-, Amex-, and regional exchange-listed security)	Q	NASDAQ Global Select Market	G	NASDAQ Global Market	S	NASDAQ Capital Market	B	BX Listing Market	<Space>	Not available				
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S	NASDAQ Capital Market																					
B	BX Listing Market																					
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Financial Status Indicator	16	1	Alphanumeric	<p>For NASDAQ-listed and BX-listed issues, this field indicates when a firm is not in compliance with NASDAQ or BX continued listing requirements.</p> <p>The allowable values are:</p> <table border="1"> <thead> <tr> <th>Code</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>D</td> <td>Deficient</td> </tr> <tr> <td>E</td> <td>Delinquent</td> </tr> <tr> <td>Q</td> <td>Bankrupt</td> </tr> <tr> <td>G</td> <td>Deficient and Bankrupt</td> </tr> <tr> <td>H</td> <td>Deficient and Delinquent</td> </tr> <tr> <td>J</td> <td>Delinquent and Bankrupt</td> </tr> <tr> <td>K</td> <td>Deficient, Delinquent, and Bankrupt</td> </tr> <tr> <td>&lt;space&gt;</td> <td> <p>Company is in compliance, if NASDAQ-listed or BX-listed issue</p> <p>OR</p> <p>Issue is not listed on NASDAQ or the BX Listing Market</p> </td> </tr> </tbody> </table>	Code	Value	D	Deficient	E	Delinquent	Q	Bankrupt	G	Deficient and Bankrupt	H	Deficient and Delinquent	J	Delinquent and Bankrupt	K	Deficient, Delinquent, and Bankrupt	<space>	<p>Company is in compliance, if NASDAQ-listed or BX-listed issue</p> <p>OR</p> <p>Issue is not listed on NASDAQ or the BX Listing Market</p>
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### 5.2.2 Stock Trading Action

NASDAQ OMX BX uses this administrative message to indicate the current trading status of a security to the trading community.

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Prior to the start of system hours, NASDAQ OMX BX will send out a Trading Action spin. In the spin, NASDAQ OMX BX will send out a Stock Trading Action message with the "T" (Trading Resumption) for all NASDAQ- and other exchange-listed securities that are eligible for trading at the start of the system hours. If a security is absent from the pre-opening Trading Action spin, firms should assume that the security is being treated as halted in the NASDAQ OMX BX platform at the start of the system hours. Please note that securities may be halted in the NASDAQ OMX BX system for regulatory or operational reasons.

After the start of system hours, BX will use the Trading Action message to relay changes in trading status for an individual security. Messages will be sent when a stock is halted / paused, is released for quotation, or is released for trading.

STOCK TRADING ACTION MESSAGE														
Name	Offset	Length	Value	Notes										
Time Stamp	0	8	Numeric	Time Stamp.										
Message Type	8	1	Alphanumeric	H = Trading Action										
Issue Symbol	9	6	Alphanumeric	Denotes the security symbol for the issue for which the stock trading action message is being generated. For details on symbology, please refer to Appendix B.										
Security Class	15	1	Alphabetic	Indicates the primary listing market for the issue. Allowable values are: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Code</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Q</td> <td>NASDAQ Listed Issue</td> </tr> <tr> <td>T</td> <td>Non-NASDAQ-Listed Issue (NYSE, Amex, or regional exchange)</td> </tr> <tr> <td>B</td> <td>BX Listing Market</td> </tr> </tbody> </table>	Code	Value	Q	NASDAQ Listed Issue	T	Non-NASDAQ-Listed Issue (NYSE, Amex, or regional exchange)	B	BX Listing Market		
Code	Value													
Q	NASDAQ Listed Issue													
T	Non-NASDAQ-Listed Issue (NYSE, Amex, or regional exchange)													
B	BX Listing Market													
Current Trading State	16	1	Alphabetic	Reflects the current trading state for the issue. The allowable values are:  Indicates the current trading state for the stock. Allowable values: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Code</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>Halted or paused on across all U.S. equity markets</td> </tr> <tr> <td>V</td> <td>Halted or paused on primary market; Halt/pause observed by BX market</td> </tr> <tr> <td>Q</td> <td>Quotation only period for cross-market halt or pause</td> </tr> <tr> <td>T</td> <td>Trading on BX</td> </tr> </tbody> </table>	Code	Value	H	Halted or paused on across all U.S. equity markets	V	Halted or paused on primary market; Halt/pause observed by BX market	Q	Quotation only period for cross-market halt or pause	T	Trading on BX
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Reason	17	4	Alphanumeric	Reflects the Market Ops or MarketWatch code for the trading state change. Refer to Appendix C for current code list.
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### 5.3 Quotation Message

BX BBO will broadcast a real-time update every time that the exchange's best bid and offer quote is updated during the trading day.

BX BBO QUOTATION MESSAGE												
Name	Offset	Length	Value	Notes								
Time Stamp	0	8	Numeric	Time stamp								
Message Type	8	1	Alphanumeric	Q = BX BBO Quotation Message								
Stock	9	6	Alphanumeric	Denotes the BX market center system issue identifier for which the BX BBO quotation message is being generated.								
Security Class	15	1	Alphabetic	Indicates the primary listing market for the stock. The allowable values are as follows: <table border="1" data-bbox="948 865 1386 1117" style="margin-left: 20px;"> <thead> <tr> <th>Code</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Q</td> <td>NASDAQ Listed Issue</td> </tr> <tr> <td>T</td> <td>Non-NASDAQ-Listed Issue (NYSE, Amex, or regional exchange)</td> </tr> <tr> <td>B</td> <td>BX Listing Market</td> </tr> </tbody> </table>	Code	Value	Q	NASDAQ Listed Issue	T	Non-NASDAQ-Listed Issue (NYSE, Amex, or regional exchange)	B	BX Listing Market
Code	Value											
Q	NASDAQ Listed Issue											
T	Non-NASDAQ-Listed Issue (NYSE, Amex, or regional exchange)											
B	BX Listing Market											
BX Best Bid Price	16	10	Numeric	Denotes the BX best bid price – the highest price for market buy order(s) in the BX system. Price format is \$\$\$\$\$\$dddd.								
BX Best Bid Size	26	9	Numeric	Denotes the aggregated number of shares available for display within the BX market center system at the BX best bid Price.								
BX Best Offer Price	16	10	Numeric	Denotes the BX exchange's best offer price – the lowest price for market sell order(s) in the BX system. Price format is \$\$\$\$\$\$dddd.								
BX Best Offer Size	26	9	Numeric	Denotes the aggregated number of shares available for display within the BX market center system at the BX Best Offer Price.								

## 6 Contact Information

Questions about the BX Basic entitlement and BX BBO specification document may be directed to [NASDAQ OMX Global Data Products](#) at +1 301 978 5307.

Questions about BX BBO transmissions may also be directed to [NASDAQ OMX Operations Center](#).



## Appendix A

### Stock Symbol Convention

For bandwidth efficiency reasons, NASDAQ OMX BX supports a 6-byte symbol field on its proprietary order, quotation and trade data feed products.

For most classes of securities, this field length is sufficient to support the exchange-assigned symbol. For NYSE- and Amex-listed securities with subordinate issue types, however, NASDAQ may modify the trading symbol to fit the allotted field size on the data feeds. For the current symbol convention matrix, please refer to the [Ticker Symbol Conversion for CQS Securities page](#) on the NASDAQ OMX Trader website.

For NASDAQ-listed issues, NASDAQ currently restricts its symbol length to a maximum of 5 characters. For common stock issuances, NASDAQ assigns a symbol of 1 to 4 characters in length. For subordinate securities, NASDAQ assigns a 5 character symbol for which the last character relays information about the issue class or issue type. For the current list of fifth character symbol suffixes, please refer to [Current List of Fifth Character Symbol Suffixes for NASDAQ-listed Issues](#) on the NASDAQ OMX Trader website.

NASDAQ OMX has not yet determined its symbology for the BX listing market. NASDAQ OMX is committed to keeping the maximum BX listing market symbols length to 6 characters. NASDAQ OMX will release more detailed plans for the BX issue symbols prior to the official market launch.

## Appendix B

### Trading Action Reason Codes

For NASDAQ-listed issues, NASDAQ acts as the primary market and has the authority to institute a trading halt or trading pause in an issue due to news dissemination or regulatory reasons.

For BX-listed issues, NASDAQ OMX BX acts as the primary market and has the authority to institute a trading halt in an issue due to news dissemination or regulatory reasons.

For CQS issues, NASDAQ abides by any regulatory trading halts and trading pauses instituted by the primary or listing market as appropriate.

For all issue types, NASDAQ and/or BX may also halt trading for operational reasons.

NASDAQ and/or BX will send out a trading action message to inform its market participants when the trading status of an issue changes. For informational purposes, NASDAQ and BX also attempt to provide the reason for each trading action update. For bandwidth efficiency reasons, NASDAQ and BX use a 4-byte code for the reason on its outbound data feeds.

<b>REASON CODES FOR TRADING HALT ACTIONS</b>	
Code	Value
T1	Halt News Pending
T2	Halt News Disseminated
T5	Single Security Trading Pause In Affect
T6	Regulatory Halt — Extraordinary Market Activity
T8	Halt ETF
T12	Trading Halted; For Information Requested by Listing Market
H4	Halt Non-Compliance
H9	Halt Filings Not Current
H10	Halt SEC Trading Suspension
H11	Halt Regulatory Concern
O1	Operations Halt; Contact Market Operations
IPO1	IPO Issue Not Yet Trading
M1	Corporate Action
M2	Quotation Not Available
<space>	Reason Not Available

<b>REASON CODES FOR QUOTATION/TRADING RESUMPTION ACTIONS</b>	
Code	Value
T3	News and Resumption Times
T7	Single Security Trading Pause / Quotation Only Period
R4	Qualifications Issues Reviewed/Resolved; Quotations/Trading to Resume
R9	Filing Requirements Satisfied/Resolved; Quotations/Trading To Resume
C3	Issuer News Not Forthcoming; Quotations/Trading To Resume
C4	Qualifications Halt ended; Maintenance Requirements Met; Resume
C9	Qualifications Halt Concluded; Filings Met; Quotes/Trades To Resume
C11	Trade Halt Concluded By Other Regulatory Auth.; Quotes/Trades Resume
R1	New Issue Available
R2	Issue Available
IPOQ	IPO Security Released for Quotation (NASDAQ and BX Securities Only)
IPOE	IPO Security — Positioning Window Extension (NASDAQ and BX Securities Only)
<space>	Reason Not Available

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For the current list of regulatory halts, please refer to the [Trading Halts page](#) on the NASDAQ OMX Trader website.

## Appendix C

### Documentation Version Control Log

**July 2, 2010: BX BBO Version 1.00**

NASDAQ OMX added a new Trading State code value of "V" to the Stock Trading Action message to denote a NASDAQ Volatility Guard trading pause.

**May 25, 2010: BX BBO Version 1.00**

NASDAQ added two new Trading Action Reason code values (T5 and T7) for single security trading pause situations.

**December 3, 2009: BX BBO Version 1.00**

Final release of the initial specification document, 1.0. Please refer to [Data News #2009-43](#).