



Nasdaq PSX Best Bid and Offer (PSX BBO)

Version 2.1

1 Overview

1.1 Product Description

PSX Best Bid and Offer (PSX BBO) is a direct data feed product offered by Nasdaq to support the PSX Trading Market upon launch. PSX BBO provides the exchange's best bid and offer position for Nasdaq, New York Stock Exchange (NYSE), Other Regional Exchanges.

Market data distributors may use the PSX 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, PSX BBO is part of the PSX Basic entitlement.

For pricing and ordering information, please contact [Nasdaq Investment Intelligence](#) at +1 301 978 5307 or +45 33 93 33 66.

2 Network Protocol Options

For direct data feed subscribers, Nasdaq will offer the PSX BBO data feed in the following protocol options:

- SoupBinTCP
- MoldUDP64
- [SoupTCP](#)
- [MoldUDP](#)

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

Data Channel	Securities coverage
1	Nasdaq Listed Issues
2	NYSE Listed Issues
3	Other Regional Issues

3 Architecture

PSX BBO will be 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 PSX BBO protocol are typically delivered using a higher level protocol that takes care of sequencing and delivery guarantees.

4 Data Types

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

All alphanumeric fields are ASCII fields which are left justified and padded on the right with spaces.

Prices are integer fields, supplied with an associated precision. When converted to a decimal format, prices are in a fixed point format, where the precision defines the number of decimal places. For example, a field flagged as Price (4) has an implied 4 decimal digits.

Timestamps reflects the Nasdaq system time at which the outbound message was generated. Nasdaq states time as the number of nanoseconds past midnight. The time zone is U.S. Eastern Time.

5 Message Formats

Note: For consistency, Nasdaq has coded the PSX Best Bid and Offer to use the same data formats as the Nasdaq Best Bid and Offer (QBBO) 2.0 and BX Best Bid and Offer (BX BBO) 2.0 data feed offerings. Functionality that is not currently supported for the PSX market has been *grayed out*.

5.1 System Event Message

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

SYSTEM EVENT MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"S"	System Event
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Time Stamp	3	6	Timestamp	Time stamp
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, PSX BBO will support the following event codes:

SYSTEM EVENT CODES – DAILY	
Code	Explanation
0	<i>Start of Transmissions:</i> Denotes that PSX BBO has started its daily transmission schedule

S	<i>Start of System Hours:</i> This message indicates that PSX 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 PSX is now closed and will not accept any new orders today.
C	<i>End of Transmissions:</i> Denotes that PSX BBO has completed its daily transmission schedule.

5.2 Administrative Messages

5.2.1 Stock Directory

At the start of each trading day, Nasdaq PSX 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 issues.

STOCK DIRECTORY				
Name	Offset	Length	Value	Notes
Message Type	0	1	"R"	Stock Directory Message
Tracking Number	1	2	Integer	Nasdaq Internal Tracking Number
Timestamp	3	6	Numeric	Time at which the directory message was generated. Refer to Data Types for field processing notes.
Stock	9	8	Alpha	Denotes the security symbol for the issue in the Nasdaq execution system.
Market Category	17	1	Alpha	Indicates Listing market or listing market tier for the issue "Q" = Nasdaq Global Select Market SM "G" = Nasdaq Global Market SM "S" = Nasdaq Capital Market® "N" = New York Stock Exchange (NYSE) "A" = NYSE American "P" = NYSE Arca "Z" = BATS BZX Exchange "V" = Investors' Exchange, LLC <space> = Not Available

Financial Status Indicator	18	1	Alpha	<p>For Nasdaq-listed issues, this field indicates when a firm is not in compliance with Nasdaq continued listing requirements.</p> <p>“D” = Deficient “E” = Delinquent “Q” = Bankrupt “S” = Suspended “G” = Deficient and Bankrupt “H” = Deficient and Delinquent “J” = Delinquent and Bankrupt “K” = Deficient, Delinquent and Bankrupt “C” = Creations and/or Redemptions Suspended for Exchange Traded Product “N” = Normal (Default): Issuer Is NOT Deficient, Delinquent, or Bankrupt</p> <p><Space> = Company is in compliance, if Nasdaq-listed issue</p>
Round Lot Size	19	4	Integer	Indicates the number of shares that represent a round lot for the issue
Round Lots Only	23	1	Alpha	<p>Indicates if Nasdaq system limits order entry for issue</p> <p>“Y” = only round lots are accepted in this stock “N” = odd/mixed lots are allowed</p>
Issue Classification	24	1	Alpha	Identifies the security class for the issue as assigned by Nasdaq. See Appendix for allowable values.
Issue Sub-type	25	2	Alpha	Identifies the security sub-type for the issue as assigned by Nasdaq. See Appendix for allowable values.
Authenticity	27	1	Alpha	<p>Denotes if an issue or quoting participant record is set-up in NASDAQ systems in a live/production, test, or demo state. Please note that firms should only show live issues and quoting participants on public quotation displays.</p> <p>“P” = Live/Production “T” = Test</p>
Short Sale Threshold Indicator	28	1	Alpha	<p>Indicates if a security is subject to mandatory close-out of short sales under SEC Rule 203(b)(3).</p> <p>“Y” = Issue is restricted under SEC Rule 203(b)(3) “N” = Issue is not restricted “<Space>” = Threshold Indicator not available</p>

IPO Flag	29	1	Alpha	<p>Indicates if the NASDAQ security is set up for IPO release. This field is intended to help NASDAQ market participant firms comply with FINRA Rule 5131(b).</p> <p><i>Nasdaq-Listed Instruments</i> “Y” = NASDAQ listed instrument is set up as a new IPO security “N” = NASDAQ listed instrument is not set up as a new IPO security</p> <p><i>Non-Nasdaq Listed Instruments</i> “<Space>” = Not available</p>
LULD Reference Price Tier	30	1	Alpha	<p>Indicates which Limit Up / Limit Down price band calculation parameter is to be used for the instrument. Refer to LULD Rule for details.</p> <p>“1” = Tier 1 NMS Stocks and select ETPs “2” = Tier 2 NMS Stocks “<Space>” = Not Available</p>
ETP Flag	31	1	Alpha	<p>Indicates whether the security is an exchange traded product (ETP):</p> <p>“Y” = Instrument is an ETP “N” = Instrument is not an ETP “<Space>” = Not Available</p>
ETP Leverage Factor	32	4	integer	<p>Tracks the integral relationship of the ETP to the underlying index. Example: If the underlying Index increases by a value of 1 and the ETP’s Leverage factor is 3, indicates the ETF will increase/decrease (see Inverse) by 3.</p> <p>Leverage Factor is rounded to the nearest integer below, e.g. leverage factor 1 would represent leverage factors of 1 to 1.99.</p> <p>This field is used for LULD Tier I price band calculation purposes.</p>
Inverse Indicator	36	1	Alpha	<p>Indicates the directional relationship between the ETP and underlying index.</p> <p>“Y” = ETP is an Inverse ETP “N” = ETP is not an Inverse ETP</p> <p>Example: An ETP Leverage Factor of 3 and an Inverse value of ‘Y’ indicates the ETP will decrease by a value of 3.</p>

5.2.2 Stock Trading Action

Nasdaq uses this administrative message to indicate the current trading status of a security to the trading community.

Prior to the start of system hours, Nasdaq will send out a Trading Action spin. In the spin, Nasdaq 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 PSX 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 PSX platform at the start of the system hours. Please note that securities may be halted in the PSX system for regulatory or operational reasons.

After the start of system hours, Nasdaq 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
- Released for quotation
- Released for trading

STOCK TRADING ACTION MESSAGE				
Name	Offset	Length	Value	Notes
Message Type	0	1	"H"	Trading Action
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Time Stamp	3	6	Timestamp	Timestamp

Stock	9	8	Alphanumeric	Nasdaq-assigned indicator for issue for which the stock trading action message is being generated. For details on Nasdaq symbology, please refer to Appendix B.														
Security Class	17	1	Alphanumeric	Indicates the primary listing market for the issue. Allowable values are: <table border="1"> <thead> <tr> <th>Code</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Q</td> <td>Nasdaq-Listed Issue</td> </tr> <tr> <td>N</td> <td>NYSE</td> </tr> <tr> <td>A</td> <td>NYSE American</td> </tr> <tr> <td>P</td> <td>NYSE Arca</td> </tr> <tr> <td>Z</td> <td>BATS</td> </tr> <tr> <td>V</td> <td>IEXG</td> </tr> </tbody> </table>	Code	Value	Q	Nasdaq-Listed Issue	N	NYSE	A	NYSE American	P	NYSE Arca	Z	BATS	V	IEXG
Code	Value																	
Q	Nasdaq-Listed Issue																	
N	NYSE																	
A	NYSE American																	
P	NYSE Arca																	
Z	BATS																	
V	IEXG																	
Current Trading State	18	1	Alphanumeric	Reflects the current trading state for the issue. The allowable values are: <table border="1"> <thead> <tr> <th>Code</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>H</td> <td>Halted/Paused on Nasdaq and all UTP participants</td> </tr> <tr> <td>Q</td> <td>Quotation only period for cross-SRO halt or pause</td> </tr> <tr> <td>P</td> <td>Paused across all U.S. equity markets / SROs (Nasdaq-listed securities only)</td> </tr> <tr> <td>T</td> <td>Trading on PSX</td> </tr> </tbody> </table>	Code	Value	H	Halted/Paused on Nasdaq and all UTP participants	Q	Quotation only period for cross-SRO halt or pause	P	Paused across all U.S. equity markets / SROs (Nasdaq-listed securities only)	T	Trading on PSX				
Code	Value																	
H	Halted/Paused on Nasdaq and all UTP participants																	
Q	Quotation only period for cross-SRO halt or pause																	
P	Paused across all U.S. equity markets / SROs (Nasdaq-listed securities only)																	
T	Trading on PSX																	
Reason	19	4	Alphanumeric	Reflects the Market Ops or MarketWatch code for the trading state change. Refer to Appendix C for current code list.														

5.2.3 Reg SHO Short Sale Price Test Restricted Indicator

In November 2010, the Securities and Exchange Commission (SEC) implemented changes to Rule 201 of the Regulation SHO (Reg SHO). For details, please refer to [SEC Release Number 34-61595](#). In association with the Reg SHO rule change, Nasdaq

introduced the following Reg SHO Short Sale Price Test Restricted Indicator message format.

For Nasdaq-listed issues, Nasdaq supports a full pre-opening spin of Reg SHO Short Sale Price Test Restricted Indicator messages indicating the Rule 201 status for all active issues. Nasdaq also sends the Reg SHO Short Sale Price Test Restricted Indicator message in the event of an intraday status change.

For other exchange-listed issues, Nasdaq relays the Reg SHO Short Sale Price Test Restricted Indicator message when it receives an update from the primary listing exchange.

Nasdaq processes orders based on the most Reg SHO Restriction status value.

REG SHO RESTRICTION				
Name	Offset	Length	Value	Notes
Message Type	0	1	"V"	Reg SHO Short Sale Price Test Restricted Indicator
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Timestamp	Time at which the market participant position message was generated
Stock	9	8	Alphanumeric	Stock symbol right padded with spaces.
Reg SHO Action	17	1	Alphanumeric	Denotes the Reg SHO Short Sale Price Test Restriction status for the issue at the time of the message dissemination. Allowable values are: "0" = No price test in place "1" = Reg SHO Short Sale Price Test Restriction in effect due to an intra- day price drop in security "2" = Reg SHO Short Sale Price Test Restriction remains in effect

5.2.4 Market-Wide Circuit Breaker (MWCB) Messaging

5.2.4.1 MWCB Decline Level Message

Informs data recipients what the daily MWCB breach points are set to for the current trading day.

MWCB Decline Level Message				
Name	Offset	Length	Value	Notes
Message Type	0	1	"V"	Market wide circuit breaker Decline Level Message.
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Timestamp	Time at which the MWCB Decline Level

				message was generated
Level 1	9	8	Price (8)	Denotes the MWCBC Level 1 Value.
Level 2	17	8	Price (8)	Denotes the MWCBC Level 2 Value.
Level 3	25	8	Price (8)	Denotes the MWCBC Level 3 Value.

5.2.4.2 MWCBC Status Message

Informs data recipients when a MWCBC has breached one of the established levels

MWCBC Breach Message				
Name	Offset	Length	Value	Notes
Message Type	0	1	"W"	Market-Wide Circuit Breaker Status message
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	9	Timestamp	Time at which the MWCBC Breaker Status message was generated
Breached Level	9	1	Alphanumeric	Denotes the MWCBC Level that was breached. "1" = Level 1 "2" = Level 2 "3" = Level 3

5.2.5 Operational Halt

The Exchange uses this message to indicate the current Operational Status of a security to the trading community. An Operational Halt means that there has been an interruption of service on the identified security impacting only the designated Market Center. These Halts differ from the "Stock Trading Action" message types since an Operational Halt is specific to the exchange for which it is declared, and does not interrupt the ability of the trading community to trade the identified instrument on any other market place.

Nasdaq uses this administrative message to indicate the current trading status of the three market centers operated by Nasdaq.

Operational Halt				
Name	Offset	Length	Value	Notes
Message Type	0	1	"h"	Operational Halt
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Integer	Time at which the Operational Halt message was generated. Refer to Data Types for field processing notes.
Stock	9	8	Alpha	Denotes the security symbol for the issue in the Nasdaq execution system

Market Code	17	1	Alpha	Code	Value
				Q	Nasdaq
				B	BX
				X	PSX
Operational Halt Action	18	1	Alpha	Code	Value
				H	Operationally Halted on the identified Market
				T	Operational Halt has been lifted and Trading resumed

5.3 Quotation Message

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

PSX BBO QUOTATION MESSAGE					
Name	Offset	Length	Value	Notes	
Message Type	0	1	"Q"	Quotation Message	
Tracking Number	1	2	Integer	Nasdaq internal tracking number	
Time Stamp	3	6	Timestamp	Timestamp	
Stock	9	8	Alphanumeric	Denotes the PSX market center system issue identifier for which the PSX BBO quotation message is being generated.	
Security Class	17	1	Alphanumeric	Indicates the primary listing market for the stock. The allowable values are as follows:	
				Code	Value

				Q	Nasdaq-Listed Issue
				N	NYSE
				A	NYSE American
				P	NYSE Arca
				Z	BATS
				V	Investors' Exchange LLC
PSX Best Bid Price	18	4	Price (4)	Denotes the PSX best bid price – the highest price for market buy order(s) in the PSX system.	
PSX Best Bid Size	22	4	Integer	Denotes the aggregated number of shares available for display within the PSX market center system at the PSX best bid Price.	
PSX Best Offer Price	26	4	Price (4)	Denotes the PSX exchange's best offer price – the lowest price for market sell order(s) in the PSX system.	
PSX Best Offer Size	30	4	Integer	Denotes the aggregated number of shares available for display within the PSX market center system at the PSX Best Offer Price.	

5.4 NextShares Quotation Message

This version of the Quotation message format will be used for Exchange Traded Managed Funds (NextShares). For this asset class, Nasdaq will support both Proxy Price and Net Asset Value (NAV) premium/discount amount for the best bid and offer.

Name	Offset	Length	Value	Notes
Message Type	0	1	"A"	NextShares Quotation Message
Tracking Number	1	2	Integer	Nasdaq internal tracking number
Timestamp	3	6	Timestamp	Time at which the message was generated
NextShares Symbol	9	8	Alphanumeric	Denotes the NextShares symbol in the Nasdaq execution system.
Security Class	17	1	Alphanumeric	Indicates the primary listing market for the stock. The allowable values are as follows:
			Q	Nasdaq-listed security

Nasdaq Best Bid -	18	4	Price (4)	Denotes the Nasdaq best bid
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Proxy Price				price for NextShares in proxy price format.
Nasdaq Best Bid Size	22	4	Integer	Denotes the aggregated number of shares available for display within the Nasdaq market center system at the Nasdaq best bid price.
Nasdaq Best Bid - NAV Premium/Discount Amount	26	4	Signed Price (4)	Denotes premium or discount amount to the NAV reflected in the Nasdaq best bid. Please note: This is a signed (+/-) field.
Nasdaq Best Offer - Proxy Price	30	4	Price (4)	Denotes the Nasdaq best offer for the EMTF in proxy price format .
Nasdaq Best Offer Size	34	4	Integer	Denotes the aggregated number of shares available for display within the Nasdaq market center system at the Nasdaq best offer price.
Nasdaq Best Offer - NAV Premium/Discount Amount	38	4	Signed Price (4)	Denotes the premium or discount amount to the NAV reflected in the Nasdaq best offer. Please note: this is a signed (+/-) field.

Contact Information

Questions about the PSX Basic entitlement and PSX BBO specification document may be directed to [Nasdaq Investment Intelligence](#) at +1 301 978 5307.

Questions about PSX BBO transmissions may also be directed to [Nasdaq Operations Center](#).

Appendix A

Stock Symbol Convention

For Nasdaq-listed issues, Nasdaq currently restricts its symbol length to a maximum of 8 characters. For common stock issuances, Nasdaq, PSX and BX will only assign root symbols of 1 to 4 characters in length with possible fifth and or sixth character denoting a suffix. In certain instances, a dot “.” delimiter may be applied to symbols after the root and between the suffix eg., XXXX.A. For subordinate securities, Nasdaq and BX will assign a 5 character symbol for which the last character relays information about the issue class or issue type. For the current list of fifth and or six character symbol suffixes, please refer to [Ticker Symbol Convention](#) page on the Nasdaq Trader website.

For NYSE-, NYSE American- and NYSE Arca-listed securities with subordinate issue types, please refer to [Ticker Symbol Convention](#) page on the Nasdaq Trader website.

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 CQS issues, Nasdaq, BX and PSX abide by any regulatory trading halts and trading pauses instituted by the primary or listing market as appropriate.

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

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 PSX also attempt to provide the reason for each trading action update. For bandwidth efficiency reasons, Nasdaq, BX and PSX use a 4-byte code for the reason on its outbound data feeds.

REASON CODES FOR TRADING HALT ACTIONS	
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
LUDP	Volatility Trading Pause
LUDS	Volatility Trading Pause – Straddle Condition
MWC1	Market Wide Circuit Breaker Halt – Level 1
MWC2	Market Wide Circuit Breaker Halt – Level 2
MWC3	Market Wide Circuit Breaker Halt – Level 3
MWC0	Market Wide Circuit Breaker Halt – Carry over from previous day
IPO1	IPO Issue Not Yet Trading
M1	Corporate Action
M2	Quotation Not Available
<space>	Reason Not Available

REASON CODES FOR QUOTATION/TRADING RESUMPTION ACTIONS	
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
MWCQ	Market Wide Circuit Breaker Resumption
R1	New Issue Available
R2	Issue Available
IPOQ	IPO Security Released for Quotation (Nasdaq Securities Only)
IPOE	IPO Security — Positioning Window Extension (Nasdaq Securities Only)
<space>	Reason Not Available

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

Appendix C - Issue Classification Values

Identifies the security class for the issue as assigned by Nasdaq

CODES FOR ISSUE CLASSIFICATION VALUES	
Code	Value
A	American Depositary Share
B	Bond
C	Common Stock
F	Depository Receipt
I	144A
L	Limited Partnership
N	Notes
O	Ordinary Share
P	Preferred Stock
Q	Other Securities
R	Right
S	Shares of Beneficial Interest
T	Convertible Debenture
U	Unit
V	Units/Benif Int
W	Warrant

Appendix D - Issue Sub-Type Values

CODES FOR ISSUE CLASSIFICATION VALUES	
Code	Value
A	Preferred Trust Securities
AI	Alpha Index ETNs
B	Index Based Derivative
C	Common Shares
CB	Commodity Based Trust Shares
CF	Commodity Futures Trust Shares
CL	Commodity-Linked Securities
CM	Commodity Index Trust Shares
CO	Collateralized Mortgage Obligation
CT	Currency Trust Shares
CU	Commodity-Currency-Linked Securities
CW	Currency Warrants
D	Global Depository Shares
E	ETF-Portfolio Depository Receipt
EG	Equity Gold Shares
EI	ETN-Equity Index-Linked Securities
EM	Exchange Traded Managed Funds *
EN	Exchange Traded Notes
EU	Equity Units
F	HOLDRS
FI	ETN-Fixed Income-Linked Securities
FL	ETN-Futures-Linked Securities
G	Global Shares
I	ETF-Index Fund Shares
IR	Interest Rate
IW	Index Warrant
IX	Index-Linked Exchangeable Notes
J	Corporate Backed Trust Security
L	Contingent Litigation Right
LL	Identifies securities of companies that are set up as a Limited Liability Company (LLC)
M	Equity-Based Derivative
MF	Managed Fund Shares
ML	ETN-Multi-Factor Index-Linked Securities
MT	Managed Trust Securities
N	NY Registry Shares
O	Open Ended Mutual Fund
P	Privately Held Security
PP	Poison Pill
PU	Partnership Units

Q	Closed-End Funds
R	Reg-S
RC	Commodity-Redeemable Commodity-Linked Securities
RF	ETN-Redeemable Futures-Linked Securities
RT	REIT
RU	Commodity-Redeemable Currency-Linked Securities
S	SEED
SC	Spot Rate Closing
SI	Spot Rate Intraday
T	Tracking Stock
TC	Trust Certificates
TU	Trust Units
U	Portal
V	Contingent Value Right
W	Trust Issued Receipts
WC	World Currency Option
X	Trust
Y	Other
Z	Not Applicable

Appendix E

Documentation Version Control Log

July 15, 2022: PSX BBO Version 2.1

Due to the launch of non-integer leverage factors, updated the Value/Description field of ETP Leverage Factor from section 5.2.1 page 6.

May 3, 2018: PSX BBO Version 2.1

Nasdaq made the decision to fall back to the previous version number to avoid customer confusion related to different sequencing between the version number of the product specifications and the version number of the actual product code.

March 3, 2018: PSX BBO Version 2.2

Released a new version of Nasdaq PSX BBO documentation to add a new Operational Halt message (Section 5.2.5) to indicate the current Operational Status of a security to the trading community.

September 12, 2017: PSX BBO Version 2.1

Nasdaq added a new Market Category code in the Stock Directory message for the Investors' Exchange, LLC to distinguish IEX-listed issues. New market category code is "V". Nasdaq also added a new Security Class field ("V") for Investors' Exchange, LLC in the Quotation messages and Stock Trading Action messages.

March 6, 2015: PSX BBO Version 2.1

Please keep in mind that there are currently no plans to facilitate trading of Exchange Traded Managed Funds on PSX. We are adding these items in gray (to denote inactive functionality) If NextShares begin trading on PSX, we will activate this functionality.

The PSX BBO Specification was updated include:

- Addition of NextShares Quotation Message
- New Issue Sub-Type Code "EM" for Exchange Traded Managed Funds
- Clarification Data Types section

Nasdaq and NFS are requesting that market data vendors display NextShares orders, quotations and trades in NAV-based format if at all possible. For display purposes, Nasdaq is including the NAV premium / discount amount data points on QBBO, NLS and NLS Plus for this purposes. Firms may also calculate the NAV premium / discount amount from proxy price field by deducting \$100 from the disseminated value.

If firms decide to display NextShares data in proxy price format, Nasdaq and NFS are asking firms to add an indicator to the display so consumers to understand that this value is not the actual execution price for the trade/quote.

December 5, 2014: PSX BBO Version 2.00

The PSX BBO Specification was updated to include missing Issue Sub-Type Codes (Appendix D):

- AI – Alpha Indexes ETNs
- CO – Collateralized Mortgage Obligation
- EU – Equity Units
- F – HOLDERS
- IR – Interest Rate
- IW – Index Warrant
- J – Corporate Backed Trust Security
- PP – Poison Pill
- Q – Closed -End Funds
- RT – REIT
- SC – Spot Rate Closing

SI – Spot Rate Intraday
WC – World Currency Option
X – Trust
Y – Other
Z – NA

October 1, 2013: PSX Best Bid and Offer (PX BBO) 2.00

Released a new version of PSX BBO documentation to support the following changes:
Conversion to binary

August 2, 2013: PSX Best Bid and Offer (PX BBO) 2.00

Released a new version of PX BBO documentation to support the following changes:

Inclusion of the Appendices for Issue Classification and Issue Sub-Type
Updated offsets in the Symbol Directory Message
Updated offsets and lengths for the MWCB Decline Level Message
Renamed the Compliance ID field to TrackingID

July 10, 2013: PSX Best Bid and Offer (PX BBO) 2.00

The PX BBO Specification was updated to reflect the following changes:

Added Enhanced Symbol Directory
Added Market-Wide Circuit Breaker (MWCB) Messaging

- o MWCB Decline Level Message
- o MWCB Status Message

Addition of an internal tracking number to multiple messages
Addition of 'C' to the Financial Status Indicator field in the Symbol Directory Message

March 11, 2013: PSX Best Bid and Offer (PX BBO) 1.1

Nasdaq added the following Trading Action Reason Code for LULD to reflect when the National Best Bid is below the lower price band and/or the National Best Offer is above than the upper price band and the NMS Stock is not in a Limit State.

LUDS - Volatility Trading Pause – Straddle Condition

January 9, 2013: PSX Best Bid and Offer (PX BBO) 1.1

Nasdaq added the following Trading Action Reason Code:

MWCO - Market Wide Circuit Breaker Halt – Carry over from previous day

January 8, 2013: PSX Best Bid and Offer (PX BBO) 1.1

Nasdaq removed the Trading Action State, "P", from the Stock Trading Message.

November 6, 2012: PSX Best Bid and Offer (PX BBO) 1.1

Released a new version of the PX BBO documentation to support the following changes:

Added the "P" value to the Trading State in the Stock Trading Message.
Modified the values for the Trading Action Reason Codes. Added the following codes:

- o LUDP - Volatility Trading Pause
- o MWC1 - Market Wide Circuit Breaker Halt – Level 1
- o MWC2 - Market Wide Circuit Breaker Halt – Level 2
- o MWC3 - Market Wide Circuit Breaker Halt – Level 3
- o MWCQ - Market Wide Circuit Breaker Resumption

Removed the Trading Action values related to the Volatility Guard Program. Removed Trading State, "V". Eliminated Trading Action Reason Codes, V1 and V2.

November 1, 2011: PSX Best Bid and Offer (PX BBO) 1.1

Nasdaq added a new Market Center code, "Z", for BATS-listed securities to the Market Category and Security Class fields.

July 14, 2010: PSX Best Bid and Offer (PX BBO) 1.1

Nasdaq added a new Regulation SHO Short Sale Price Test Restricted Indicator message format to be introduced in the fourth quarter of 2010.

July 2, 2010: PSX Best Bid and Offer (PX BBO) 1.1

Nasdaq added new Action Trading code(s) to the Stock Trading Action message for the Nasdaq Volatility Guard trading pause.

May 25, 2010 : PSX Best Bid and Offer (PX BBO) 1.1

Inclusion of two new Trading Action Reason code values (T5 and T7) for single security trading pause situations

March 26, 2010 : PSX Best Bid and Offer (PX BBO) 1.1

Inclusion of EMC (Emergency Market Conditions) System Event Codes

February 26, 2010 : PSX Best Bid and Offer (PX BBO) 1.1

Initial release of PSX documentation.

(Note: For cross market consistency, PSX is using the same version numbers as the Nasdaq and BX markets. There will be no PX BBO 1.0.)