# TAQ OPENBOOK CLIENT SPECIFICATION

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|---|---|
| **NYSE AMERICAN TAQ OPENBOOK ULTRA** | **July 24, 2017** |
| **NYSE AMERICAN TAQ OPENBOOK AGGREGATED** | **July 24, 2017** |
| **NYSE TAQ OPENBOOK ULTRA** | **Q4 2017** |
| **NYSE TAQ OPENBOOK AGGREGATED** | **Q4 2017** |

| Version | Date |
|---|---|
| 1.2b | December 14, 2017 |

*** The name change from NYSE MKT to NYSE American will not be effective until filed with the SEC.**

# PREFACE

## DOCUMENT HISTORY

The following table provides a description of all changes to this document.

| VERSION NO. | DATE | CHANGE DESCRIPTION |
|---|---|---|
| **1.2** | 04/20/2017 | Document rebranded with the ICE template<br>TAQ OpenBook Ultra and Aggregated combined into one specification<br>Updated for NYSE American market<br>Clarified chronological order of records<br>New values in the Aggregated message, Status and Buy/Sell fields<br>Added new ListingMarket field to for trading all tapes<br>Aggregated message timestamp accuracy to nanoseconds<br>Change LinkID2 & 3 fields (now unused) to reserved status<br>Removed unused Reference Price field from Aggregated msg layout |
| **1.2a** | 07/10/2017 | Updated the timelines for the availability of TAQ OpenBook Ultra<br>Added the file path for the channels of TAQ OpenBook Ultra Ultra<br>Modify the format in the Quote Condition to ASCII and updated the description for TAQ OpenBook Ultra<br>Add the default value of 'Space' for the Reason Code field in TAQ OpenBook Ultra<br>Updated the Reason Code for TAQ OpenBook Ultra<br>Updated Date description field for TAQ OpenBook Aggregated<br>Modify the Time for TAQ OpenBook Aggregated |
| **1.2b** | 12/14/2017 | Updated Security Index byte length from 2 to 4 |

## RELATED DOCUMENTS

NYSE Symbology Specification

## SUPPORT CONTACT INFORMATION

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# 1. INTRODUCTION

An instance of the TAQ OpenBook Ultra file and of the TAQ OpenBook Aggregated file is produced at the end of every trading day for the NYSE exchange, and for the NYSE American exchange, a total of four files.

Each record in the file represents an update to the state of the order book for a particular symbol traded at the exchange. The order books for all symbols traded on the exchange are included. Test symbols are not included.

For OpenBook Ultra, and update record appears whenever there was a significant change to the order book. For Openbook Aggregated, update records are published once a second per symbol.

Records are in chronological order.

## 1.1 TIMELINES AND AVAILABILITY

New OpenBook Ultra and OpenBook Aggregated files are available at the approximate times below. Historical National Volume Summary files are available in the date ranges shown.

All times are in US Eastern time.

| PRODUCT | TYPICAL FILE TIME AVAILABILITY | HISTORY FILE AVAILABILITY |
|---|---|---|
| **NYSE TAQ OpenBook Ultra** | 11:00 PM | 6/2/2008 – present |
| **NYSE TAQ OpenBook Aggregated** | 08:00 PM | 1/24/2002 – present |
| **NYSE American TAQ OB Ultra** | 11:00 PM | 3/12/2014 – present |
| **NYSE American TAQ OB Aggregated** | 08:00 PM | 7/24/2017 – going forward |

## 1.2 FILE FORMATS

TAQ OpenBook Aggregated files are in a pipe-delimited ASCII format.

TAQ OpenBook Ultra data files are in a binary format.

All TAQ OpenBook files are compressed using gzip and have a .gz extension.

### 1.3 FILE NAME AND FTP LOCATION

On logging into the NYSE FTP Site, ftp2.nyxdata.com, the historical TAQ OpenBook files are accessible per your entitlements at the locations shown below.

| EXCHANGE | FILE PATH AND NAME |
| --- | --- |
| **NYSE OpenBook Ultra** | EQY_US_NYSE_BOOK/<br>EQY_US_NYSE_BOOK_yyyy/<br>EQY_US_NYSE_BOOK_yyyymm/<br>EQY_US_NYSE_BOOK**_yyyymmdd.gz** |
| **NYSE OpenBook Aggregated** | EQY_US_NYSE_BOOK_AGGR/<br>EQY_US_NYSE_BOOK_AGGR_yyyy/<br>EQY_US_NYSE_BOOK_AGGR_yyyymm/<br>EQY_US_NYSE_BOOK_AGGR**_yyyymmdd.gz** |
| **NYSE American OpenBook Ultra** | EQY_US_MKT_BOOK/<br>EQY_US_MKT_BOOK_yyyy/<br>EQY_US_MKT_BOOK_yyyymm/<br>EQY_US_MKT_BOOK**_yyyymmdd.gz**<br>**…**<br>**EQY_US_MKT_BOOK_1_yyyymmdd.gz**<br>**EQY_US_MKT_BOOK_2_yyyymmdd.gz**<br>**EQY_US_MKT_BOOK_3_yyyymmdd.gz**<br>**EQY_US_MKT_BOOK_4_yyyymmdd.gz** |
| **NYSE American OpenBook Aggregated** | EQY_US_MKT_BOOK_AGGR/<br>EQY_US_MKT_BOOK_AGGR_yyyy/<br>EQY_US_MKT_BOOK_AGGR_yyyymm/<br>EQY_US_MKT_BOOK_AGGR**_yyyymmdd.gz** |

## 2. TAQ OPENBOOK ULTRA FIELD LAYOUT

In the format column, a number in parentheses is the maximum length of the field.

| FIELD ORDER | FIELD | FORMAT | DESCRIPTION |
|---|---|---|---|
| 1 | **MsgSeqNum** | Binary (4) | The message sequence number |
| 2 | **MsgType** | Binary (2) | The type of this message<br>▪ 230 – Full Update Message<br>▪ 231 – Delta Update Message |
| 3 | **SendTime** | Binary(4) | The time that this message was published, in milliseconds since midnight. |
| 4 | **Symbol** | ASCII (11) | The symbol in NYSE symbology (Root Space Suffix) |
| 5 | **MsgSize** | Binary (2) | The size of this message in bytes, including this field.<br>MsgSize=sum(fixed fields) + number of price Points*sum (price point fields for 1 price point). |
| 6 | **SecurityIndex** | Binary (4) | A numerical unique ID for this symbol. |
| 7 | **SourceTime** | Binary (4) | The time this update was generated by the matching engine, in milliseconds since midnight |
| 8 | **SourceTimeMicroSecs** | Binary (2) | The number of microseconds after the millisecond boundary that this update was generated by the matching engine |
| 9 | **QuoteCondition** | ASCII(1) | The current quote condition for this symbol. Values:<br>▪ Space= no special quote condition exists<br>▪ W = Slow on both the Bid and Ask sides because this security is on the Set Slow list |
| 10 | **Trading Status** | ASCII (1) | Trading status of this security. Values:<br>▪ P - Pre-Opening<br>▪ E – Early session (NYSE American only)<br>▪ O – Opened (Core Session)<br>▪ L – Late Session (NYSE American only)<br>▪ X - Closed<br>▪ H = Halted |
| 11 | **SourceSeqNum** | Binary (4) | The sequence number assigned by the source system to this message.  Unique only for this symbol, so orders for two different stocks may share the same source sequence number. |
| 12 | **SourceSessionID** | Binary (1) | The source-session identifier is incremented with every new source session during the day. SourceSessionIDs |

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|---|---|---|---|
| | | | may restart at a lower number with every new session. |
| **13** | **PriceScaleCode** | Binary (1) | The denominator code for the price fields in this message. Represents the number of digits after the decimal place in the price.<br>Examples:<br>▪ For a price of 12, PriceScaleCode is 0.<br>▪ For a price of 12.3, PriceScaleCode is 1. |
| **14** | **PriceNumerator** | Binary (4) | The price (numerator) of this price point.<br>Note: The price is represented by the PriceScaleCode and the PriceNumerator. For example, a price of 12.3 has a "price numerator" of 123 and a scalecode of 1. |
| **15** | **Volume** | Binary (4) | The total interest in shares at this price point. |
| **16** | **ChgQty** | Binary (4) | The volume of the event taking place (that is, the size of the order, cancel or execution). |
| **17** | **NumOrders** | Binary (2) | The number of orders at the current price point. |
| **18** | **Side** | ASCII (1) | The side of this price point, Buy or sell. Valid Values:<br>▪ B = Buy<br>▪ S = Sell |
| **19** | **Filler** | ASCII (1) | Reserved. Ignore any content. |
| **20** | **ReasonCode** | ASCII (1) | The reason for this update<br>▪ O = New order/additional interest added<br>▪ C = Cancel<br>▪ E = Execution<br>▪ X = Multiple events<br>▪ Space = This message is not an update |
| **21** | **Filler** | ASCII (1) | Reserved. Ignore any content. |
| **22** | **LinkID1** | Binary (4) | The LinkID is only populated when an execution occurs. It uniquely identifies the execution. |
| **23** | **LinkID2** | Binary (4) | Reserved. Ignore any content. |
| **24** | **LinkID3** | Binary (4) | Reserved. Ignore any content. |

# 3. TAQ OPENBOOK AGGREGATED FIELD LAYOUT

In the format column, a number in parentheses is the maximum length of the field.

| FIELD ORDER | FIELD | FORMAT | DESCRIPTION |
|---|---|---|---|
| **1** | **Symbol** | Text (16) | Stock symbol in NYSE symbology (Root Space Suffix) |
| **2** | **Status** | Text (1) | Current trading status of the symbol<br>▪ P = Pre-Opening<br>▪ H = Stock Halted<br>▪ E = Early Session (NYSE American only)<br>▪ O = Open, or for NYSE American, Core Session<br>▪ L = Late Session (NYSE American only)<br>▪ X = Stock Closed |
| **3** | **Date** | YYYYMMDD | Trade date of this update |
| **4** | **Time** | HHMMSS.sssssssss | Time of this update, with nanoseconds accuracy |
| **5** | **Buy/Sell** | Text (1) | The side of this update, buy or sell<br>▪ B = Buy<br>▪ S = Sell |
| **6** | **Price Point** | Number (15) | The price point of this update, in dollars, with an optional decimal point and one or more decimal places. |
| **7** | **Shares** | Number (9) | The number of shares on this side of this price point |
| **8** | **Number of Orders** | Number (5) | The number of orders on this side of this price point |
| **9** | **Listing Market** | Text(1) | Exchange where the symbol is listed:<br>▪ N – NYSE<br>▪ P – NYSE Arca<br>▪ Q – NASDAQ<br>▪ A – NYSE American<br>▪ Z – BATS |