



Tick Size Pilot Program CHX Market Maker Transaction Data Technical Specification

Version 1.0

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Revision History

Date	Version	Description
9/24/2015	1.0	Initial Release

1. Tick Size Pilot Market Maker Reporting File Format Specification

This specification is being published to collect certain transaction data from Market Makers who are required to submit data pursuant to Appendix B.IV and C under the Plan to Implement a Tick Size Pilot Program ("Plan") and whose Designated Examining Authority ("DEA") is CHX ("Tick Size Market Makers"). CHX plans to file a proposed rule change in coordination with FINRA, requiring Market Makers in Tick Size Pilot securities to comply with the Data Collection requirements contained in Item IV of Appendix B and Item C of the Plan by complying with the market maker transaction reporting requirements included in this Market Maker Transaction Data Technical Specification. CHX will use the detail transaction data provided by Tick Size Market Makers to compile the data required pursuant to Item IV of Appendix B and Item C of the Plan.

Market Maker Transaction Files submitted to CHX shall be uniquely identified and submitted based on the CHX MM Identifier. The CHX MM Identifier is a CHX assigned unique four-character identifier that identifies a Market Maker Account. Each Market Maker shall submit their files containing trade data on a daily basis to CHX as defined herein.

The following Market Maker Transaction Data Reporting Specification provides firms with information needed to prepare, format and submit files to CHX, as well as receive the response files from CHX.

1.1. File Submission Location

Files should be submitted to CHX using the secure SFTP Protocol as a complete file for each submission. Firms must be authorized by CHX prior to submitting files.

Firms with an existing File Transfer FTP User Id may add the Tick Size Market Maker permission in order to submit files. Firms without existing permissions will have to request a new User Id from CHX.

Firms will be required to drop their files on hostname: sftp.chx.com depending on their connectivity options -- via the Internet as outlined below.

- a. Connection can be made via SFTP (port 22).
- b. Connection can be made via https (port 443).

IP Address: 67.208.64.237

Server Name: sftp.chx.com

Directory for dropping off files: tick/'CHX MM ID'

Directory for picking up response files: tick/'CHX MM Id'

NOTE: CHX MM Id is the 4 character Market Maker ID as assigned by CHX.

1.2. *File Submission Timing*

Firms will be required to submit their files no later than 12:00 p.m. (Noon) Central Time the fourth business day following the trade date.

Files may be submitted during the following times Monday - Friday: Start of day 7:00 a.m. Central Time to the End of day 4:00 p.m. Central Time.

Firms may attempt to submit the files on non-business days or outside of these hours; however, due to system maintenance which occurs off-hours and on weekends it is possible firms will not have success with a submission.

1.3. *File Formatting Rules*

Multiple records will be combined into a single file, and must be assembled in the prescribed sequence: <header>< data records><trailer>. The header record is required to be the first record, and the trailer record is required to be the last record. The rest of the records may be included in any order.

The following rules apply to the formatting of the files:

- Each file must contain a header record as the first record.
- Each file must contain a trailer record as the last record.
- Failure to pass validation on the header or trailer values will result in rejection of the entire file.
- Data records within the file may be in any sequence.

1.4. *File Preparation*

Each file submitted to CHX must have a unique filename and must contain the CHX Trading Account Identifier, Year-Month-Day and File Type. The Year-Month-Day and File Type must match the Year-Month-Day and File Type contained in the Header.

File Type values:

Market Maker Transaction Data - MMT

File naming convention:

<CHX MM Identifier>_<YYYY-MM-DD>_<File Type>.txt

For example, where CHX MM Identifier would be 'ABCD':

ABCD_2015-06-01_MMT.txt

Note: File name format is case sensitive and must conform to the example above.

1.5. *File Delimited Format*

The Tick Size Pilot Files must be submitted in pipe delimited text format (decimal 124; ASCII |).

- The delimiter marks the end of the current field and the beginning of the next field.
- Each field is identified by its relative position within each record.
- The sequence of the fields within each record must be exactly as stated in the record layouts that follow.
- Fields may be zero length.
- Fields may not have leading zeros.
- Fields may only contain ASCII characters in the range of decimal 32 to decimal 126, inclusive, and excluding decimal 124 (the pipe character itself).

Additionally, each line must be terminated using the same method; either a carriage return (decimal 13; ASCII CR) or a carriage return followed by a linefeed (decimal 13,10; ASCII CR,LF).

1.6. *File Requirements*

This section discusses certain file requirements for your reference.

- A Market Maker is only required to include records for a designated Pilot Security on the days where it is an active, registered market maker on one or more national securities exchanges or is a registered display Market Maker on the ADF.

- CHX will return a Response file in all cases for each file a Market Maker submits even when there are no rejects. In this case the file will contain only a Header and Trailer.
- A Response file from CHX may contain rejected records for an individual file.
- A Market Maker will be required to resubmit corrected records returned in the Response file as rejects from CHX. The corrected records must be part of a new, complete file for the day. Delta files are not supported.
- In the event multiple complete files are received for a single day, CHX will use the last file received based on the file receive timestamp by CHX.
- Test securities must be excluded from the file.
- Issue symbols must be in the Tick Size Pilot Security List.

1.7. File Descriptions

1.7.1. Tick Size Submission File

1.7.1.1. File Header Record Layout

All fields within the Header are required.

Field Name	Description/Allowable Values
Record Type Code	Populate with #TH# to identify the record as the header.
File Submission	The date and time that the file is being reported in YYYY-MM-DD HH:MM:SS format.
CHX MM Identifier	CHX assigned Identifier for the Market Maker
File Type	Identifies file as containing Market Maker Transaction Data (MMT)
Year-Month-Day	The year-month-day that the file is being submitted for in YYYY-MM-DD format.
File Retransmission Date/Time	The date and time that the file is being retransmitted in YYYY-MM-DD HH:MM:SS format. Filled in only if this file is being resubmitted; otherwise this field will be blank.

1.7.1.2. File Trailer Record Layout

All fields within the Footer are required.

Field Name	Description/Allowable Values
Record Type Code	Populate with #TT# to identify the record as the trailer.
Record Count	The number of data records contained in the file. Do not include the header or trailer records in the record count. If the record count does not match the actual number of data records in the file, the file will be rejected in its entirety.

1.7.2. Market Maker Transaction Data Record Layout

Field	Validation	Max Size
Record Type Code	Populate with #TR# to identify the record as a "data event" (trade record).	4
CHX MM Identifier	Alphanumeric	4

Trade Date	YYYY-MM-DD	10
Symbol	Alphanumeric	14
Trading Center	Alphanumeric	6
Exchange Provided Execution Identifier	Alphanumeric	40
Exchange Provided Order Identifier	Alphanumeric	40
Execution Time	HHMMSSMMMmmm	12
Shares Executed	Numeric	19
Execution Price	Numeric	7.6
Buy/Sell/Short Sell	Alphanumeric	2
Cancellation	Numeric	1
Original Trade Date for Report Being Cancelled	YYYY-MM-DD	10
Original Execution Time for Report Being Cancelled	HHMMSSMMMmmm	12

1.7.2.1. Market Maker Transaction Data Text Definitions

Field	Definition
Record Type Code	Populate with #TR# to identify the record as a “data event” (trade record).
CHX MM Identifier	The CHX assigned Identifier for the market maker.
Trade Date	The execution date attributed to this record
Symbol	Pilot Stock Symbol
Trading Center	<p>The Trading Center where the trade was executed. For exchange Trading Centers, the following values must be used:</p> <p>A NYSE MKT B NASDAQ OMX BX C National Stock Exchange F Non–Us Exchange I International Securities Exchange J EDGA Exchange K EDGX Exchange M Chicago Stock Exchange N New York Stock Exchange P NYSE Arca Q The NASDAQ Stock Market W CBOE Stock Exchange X NASDAQ OMX PHLX Y BATS BYX Exchange Z BATS BZX Exchange</p> <p>For over-the-counter Trading Centers, please provide the CHX MM Identifier of the CHX member executing the trade.</p>

Exchange Provided Execution Identifier	The execution identifier provided by the exchange to the market maker upon acceptance of the order.
Exchange Provided Order Identifier	The order identifier provided by the exchange to the market maker upon acceptance of the order.
Execution Time	The execution time of the trade. The granularity of the execution time (i.e., microseconds, milliseconds, etc.,) is based on the requirements of the Exchange or CHX rules where the trade is executed.
Shares Executed	The number of shares executed
Execution Price	The execution price of the trade
Buy/Sell/Short Sell	The buy, sell or short sell code from the perspective of the submitting Market Maker. Valid values are: B – Buy S – Sell SS – Short Sell
Cancellation	The Cancellation field should only be populated when a firm is cancelling a trade on T+4 or beyond. Valid values are: Blank – the trade does not represent a cancellation. 1 – The trade cancellation of a trade on T+4 or beyond. See 1.7.2.2 for further information on cancellations and corrections.
Original Trade Date for Report Being Cancelled	This field is required when the Cancellation field is populated with a 1. The date in this field must represent the trade date of the original execution that is being cancelled.
Original Execution Time for Report Being Cancelled	This field is required when the Cancellation field is populated with a 1. The time in this field must represent the execution time of the original trade for which this cancellation report is being submitted.

1.7.2.2. Notes on Cancellations and Corrections

Reporting Cancellations and Corrections up to and including T+3

If a market maker executes and fully cancels a trade report in the same day or up to and including T+3, neither the original execution nor the cancellation should be reported.

If a market maker executes and partially cancels a trade report in the same day or up to and including T+3, only the final valid state of the trade should be reported. For example:

- 10:00:00 a.m. – MM purchases 300 shares of ABCD.
- 10:00:05 a.m. – MM partially cancels 100 shares of the 10:00:00 a.m. trade.
- The MM should only report one trade for the purchase of 200 shares executed at 10:00:00 a.m. The Cancellation field for this report will be blank.

If a market maker executes and corrects a trade report on the same day or up to and including T+3, only the final valid corrected state of the trade should be reported. For example:

- On trade date 1/5/15 at 10:00:00 a.m. – MM purchases 300 shares of ABCD.
- On trade date 1/7/15 at 10:00:05 a.m. – MM corrects the 10:00:00 a.m. execution from 1/5/15 to indicate only 200 shares were executed.
- When the transactions are reported and submitted with all the other market maker's trades executed on 1/5/15, the MM should only report one trade for the purchase of 200 shares executed at 10:00:00 a.m. on 1/5/15. The Cancellation field for this report will be blank.

Reporting Cancellations and Corrections on T+4 or Beyond

The Cancellation field should only be populated when a firm is cancelling a trade on T+4 or beyond. For example:

- On trade date 1/5/15 at 10:00:00 a.m. MM purchases 300 shares of ABCD.
- This original execution will be reported and submitted with all of the other market maker's trades executed on 1/5/15 by 12 noon on 1/9/15. The Cancellation field for this report will be blank.
- On trade date 1/12/15 at 9:45:00 a.m. MM cancels the 300 share execution that was originally executed on 1/5/15 at 10:00:00 am.
- This cancellation will be reported with:
 - A Cancellation field value of 1.
 - An Original Trade Date for Report Being Cancelled value of 2015-01-05.
 - An Original Execution Time for Report Being Cancelled value of 10:00:00.
 - A Trade Date value of 2015-01-12.

If a market maker corrects a trade executed on T+4 or beyond, they must submit a cancellation of the original trade and a new trade report. For example:

- On trade date 1/5/15 at 10:00:00 a.m. MM purchases 300 shares of ABCD.
- This original execution will be reported and submitted with all of the other market maker's trades executed on 1/5/15 by 12 noon on 1/9/15. The Cancellation field for this report will be blank.
- On trade date 1/12/15 at 9:45:00 a.m. MM corrects the 300 share execution that was originally executed on 1/5/15 at 10:00:00 am to indicate that only 200 shares were executed.
- This correction should be reported with two reports.

- First, a cancellation will be reported with the 1/12/15 file, with:
 - A Cancellation field value of 1.
 - An Original Trade Date for Report Being Cancelled value of 2015-01-05.
 - An Original Execution Time for Report Being Cancelled value of 10:00:00.
 - A Trade Date value of 2015-01-12.
 - A Shares Executed value of 300.
- Second, a trade report will be submitted with the 1/12/15 file. This trade will be reported with:
 - A Cancellation field value of blank.
 - A Trade Date value of 2015-01-05.
 - An Execution Time value of 10:00:00.
 - A Shares Executed value of 200.

1.7.3. CHX Response File Format

CHX will process the files submitted by firms in the order the files were received. A response file will be generated by CHX for each file received and processed. A response may contain only a Header and Trailer which reflects no rejects for a file.

In the event of Header or Trailer mismatches, the response file will contain a single reject record.

Each file generated by CHX will have a unique filename and must contain the CHX assigned MM Identifier, Year-Month-Day and File Type as submitted in the file

The file naming convention CHX will use is:

<CHX MM Identifier>_<YYYY-MM-DD>_<File Type>_Response.txt

For example:

ABCD_2016-06-01_MMT_Response.txt

1.7.3.1. CHX Response File Locations

Firms will be required to pick up their response file(s) on hostname: sftp.chx.com. A “tick/”CHX MM Id” directory will be made available where Firms can get their files.

NOTE: CHX MM Id is the 4 character Market Maker ID as assigned by CHX.

1.7.3.2. CHX Response File Timing

Response files will be generated by CHX and made available for Firms to pick up by 12:00 p.m. (Noon) Central Time on the following business day after file submission.

In the event a response file is sent with a non-zero number of detail records, CHX will have rejected the file and will not ingest or process any of the file's contents. It is incumbent on the Market Maker to correct the file's deficiencies and resubmit the file to CHX.

1.7.3.3. CHX Response Header Record Layout

Field Name	Description/Allowable Values
Record Type Code	Populate with #RH# to identify the record as the header.
File Response	The date/time of the file response, in YYYY-MM-DD HH:MM:SS format.
CHX MM Identifier	CHX assigned MM Identifier
File Type	Identifies file as containing Market Maker Transaction Data (MMT)
Year-Month-Day	The Year-Month that the file was submitted for in YYYY-MM-DD format.

1.7.3.4. CHX Response Trailer Record Layout

Field Name	Description/Allowable Values
Record Type Code	Populate with #RT# to identify the record as the trailer.
Record Count	The number of trade records contained in the response file. The header and trailer records are excluded from the count.

1.7.3.5. CHX Response Body Layout

Field Name	Description/Allowable Values
Record Type Code	Populated with #RR# to identify the record as a response to the "data event" (data record).
Line Number	Line number in the submitted file. Will be 1 for a problem with the header.
Reject Reason	The reason this line is being rejected.
Reject Description	Description of reject.
Line Text	The text of the line being rejected.

1.8. *Reject Descriptions*

A description of the reject reason will be provided back to the user for each record that fails validation. In the event there is a Header or Footer mismatch the entire file will reject. A maximum of 25 characters will be utilized for the reason describing the CHX reject.

A table of reject reason codes will be provided at a later point in time.

2. CHX Contacts

This section includes contact information that you may need.

- CHX Control Room Operations
 - ControlRoom@hx.com
 - (312)663-2606
- CHX Trading Operations
 - (312)663-2038
- CHX Trouble Desk
 - CTrblDesk2@hx.com
 - (312)663-2111