



Dual Counter Market Maker (DCMM) File Interface Specification

Version: 1.~~2~~4

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Date: ~~August~~ September 2024

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A DCMM Activity Form Submission

A.1 DCMM Activity Form filename convention

The filename convention of the interface file is as follows:

DCMMAF_NNNNN_YYYYMMDD.ZIP (to be submitted to ECP)

Contains:

DCMMAF_NNNNN_YYYYMMDD.CSV

Where:

NNNNN: Broker Firm ID (right-aligned padded with zero (0), must be the DCMM Firm ID)

YYYYMMDD: Trade Date (must be the same as the field in the file)

The contained csv file must be encoded in UTF-8 without BOM.

There is only one DCMM Activity Form per broker firm per trading day.

EP should submit the daily report in time (as per stated in A.2). Late submission or re-submission may be allowed subjects to approval by HKEX.

Example:

| File Format | Convention | Example |
|-------------|---------------------------|---------------------------|
| CSV file | DCMMAF_Firm ID_Trade Date | DCMMAF_01234_20230717.CSV |

A.2 DCMM Activity Form submission hour and response file distribution time

| No. | Time | Party | Activity |
|-----|--|-------|--|
| 1 | By Submission window is <u>between</u> 10:15am on T Day and 10:14am on T+1 Day <u>inclusively</u> | DCMM | Submission of DCMM Activity Form of T day (DCMMAF_NNNNN_YYYYMMDD.ZIP). |
| 2 | By 3:00pm on T+1 Day | HKEX | Distribution of Result File after processing DCMM Activity Form (DCMMAF_Result_NNNNN_YYYYMMDD_YYYYMMDD.ZIP). |

A.3 File collection and distribution channel

DCMMs/EPs can submit DCMM Activity Form on every Hong Kong Securities Market trading day[‡] within submission hour (refer to section A.2) through ECP.

Submission through ECP

| | |
|---------------------------------|---|
| Submission Path (SFTP) | /submission/DCMMAF |
| Submission Page (Web Interface) | <p>To submit files: Login ECP Web Interface and click “Submission” hyperlink in the navigation bar. Click “DCMM Activity Form” hyperlink for submission.</p> <p>On submission received: A SHA-256 checksum of the file submitted will be displayed on screen upon submission.</p> <p>On submission rejected: Rejection Code and Rejection Reason will be displayed on screen upon submission (Refer to Appendix E.3) Submission result could also be enquired from the Activity Enquiry page.</p> |

If more than one submissions for the same trading day throughout the day, only the last submitted copy will be prevailed.

[‡] ~~If scheduled Hong Kong Securities Market trading day is suspended due to severe weather conditions, DCMMs/EPs can still submit the DCMM Activity Report according to the schedule specified in section A of this specification.~~

Collection through ECP

| | |
|---------------------------------|---|
| Collection Path (SFTP) | /download/DCMMAFRF |
| Collection Page (Web Interface) | Download corner of ECP Web Interface – “DCMM Activity Form Result File” |

B DCMM Activity Form file specification

The DCMM Activity Form file is in csv format, delimited by comma, without any blank lines. The csv file does not have column header row, all field values shall not contain comma character “,”.

| # | Field | Format | Remark |
|---|---|--------------|--|
| 1 | Item No. | Numeric | <ul style="list-style-type: none"> • Unique within the file • Starting from 1 • Consecutively increasing by 1 (i.e. 1, 2, 3, 4, ...) |
| 2 | Trading Date | Numeric | <ul style="list-style-type: none"> • In YYYYMMDD format • Same as the trade date in file name • Same throughout the file |
| 3 | Trade Time | Alphanumeric | <ul style="list-style-type: none"> • In HHMMSS format |
| 4 | Broker Firm ID (=Exchange Participant ID) | Numeric | <ul style="list-style-type: none"> • Maximum 5 digits • Leading zero is optional • Same throughout the file |
| 5 | Broker Number | Numeric | <ul style="list-style-type: none"> • Maximum 5 digits • Leading zero is optional |
| 6 | Stock code | Numeric | <ul style="list-style-type: none"> • Maximum 5 digits • Leading zero is optional |
| 7 | Buy/Sell | Character | <ul style="list-style-type: none"> • Either 'B' or 'S' • Case insensitive • Short selling trades should use 'S' – Sell <p>Values:</p> <ul style="list-style-type: none"> • 'B' – Buy • 'S' – Sell |
| 8 | Trade Type | Character | <p><Exchange Trade Type> provided in the Execution Report of the matched trade in OTP-C.</p> <ul style="list-style-type: none"> • Either 'A','M','S','E','O','Q','P','R','V' or 'U' • Case insensitive <p>Values:</p> <ul style="list-style-type: none"> • 'A' - Automatched • 'U' - Auction-matched • 'M' - Manual Trade |

| # | Field | Format | Remark |
|----|----------------------------|-----------|---|
| | | | <ul style="list-style-type: none"> • 'S' - Manual – Non Standard Price Trade • 'Q' - Special Lot Trade • 'P' - Odd Lot Trade • 'R' - Previous Day's Trade • 'V' - Overseas Trade • 'E' - Special Lot – Semi Automatic Matching • 'O' - Odd Lot – Semi Automatic Matching |
| 9 | Price | Decimal | <ul style="list-style-type: none"> • Maximum 3 decimal places • Without comma |
| 10 | Quantity | Numeric | <ul style="list-style-type: none"> • Integer • Without comma |
| 11 | Transaction Value | Decimal | <ul style="list-style-type: none"> • Maximum 3 decimal places • Without comma |
| 12 | Stamp Duty Amount (in HKD) | Decimal | <ul style="list-style-type: none"> • Maximum 2 decimal places • Without comma • <u>Equal to "Transaction Value (in Local Currency) * stamp duty rate* FX rate"</u> |
| 13 | Trade Reference Group | Numeric | <ul style="list-style-type: none"> • Trade Match ID provided in the Execution Report of the matched trade in OTP-C. This is an identifier assigned by the trading system, which is used to uniquely identify a trade. |
| 14 | DCMM Activity Indicator | Character | <ul style="list-style-type: none"> • Either 'A', 'H', 'M' or 'N' • Case insensitive <p>Values:</p> <ul style="list-style-type: none"> • 'A' – arbitrage • 'H' – hedge • 'M' – market making • 'N' – non-eligible DCMM transaction for stamp duty exemption <p><i>Transactions for DCMM Activity must be carried out in Automatched, either as "A" & "U" type. All other types listed below must be tagged with "N" in the Field #14 DCMM Activity Indicator.</i></p> |

Provide checksum in the last line of file, with following format:

| # | Field | Format | Remark |
|---|-------------------------|---------|--|
| 1 | Total Transaction Value | Decimal | The Total Transaction Value is the summation of Transaction Values of all record in the activity form. |
| 2 | Total Stamp Duty Value | Decimal | The Total Stamp Duty Value is the summation of Stamp Duty Values of all record above in the activity form. |

B.1 Sample of DCMM Activity Form file

Filename: DCMMAF_01234_20230717.CSV

| | | | | | | | | | | | | | |
|-----------|----------|--------|------|------|------|---|---|-------|-----|---------|-------|---------------|---|
| 1 | 20230717 | 092002 | 1234 | 8530 | 6666 | B | U | 49.9 | 500 | 24950 | 32.44 | 6666000000696 | M |
| 2 | 20230717 | 092002 | 1234 | 8531 | 7777 | S | U | 49.9 | 500 | 24950 | 32.44 | 7777000000687 | M |
| 3 | 20230717 | 112417 | 1234 | 8532 | 8888 | B | A | 56.4 | 400 | 22560 | 29.33 | 8888000004575 | A |
| 4 | 20230717 | 112241 | 1234 | 8535 | 5555 | S | A | 6.452 | 123 | 793.596 | 1.04 | 5555000004471 | H |
| 5 | 20230717 | 112241 | 1234 | 8538 | 4444 | S | A | 50 | 100 | 5000 | 6.5 | 4444000002262 | N |
| 78253.596 | 101.75 | | | | | | | | | | | | |

C DCMM Activity Form Result File

The DCMM Activity Form Response File returns validation result of DCMM Activity Form. It contains records that fail the validation.

C.1 DCMM Activity Form Result File layout

File format:

| Field No. | Field Name | Description |
|-----------|-------------|--------------------------------------|
| 1 | Item No. | The item number within the file |
| 2 | Result Code | The validation result code |
| 3 | Result Text | Corresponding validation result text |

Result code and text:

| Result Code | File / Record Level | Result Text |
|------------------|---------------------|---|
| F1001 | File | Submitted file is corrupted. |
| F1002 | File | Invalid (csv) file name. |
| F1003 | File | Invalid file layout. |
| F1004 | File | Trade date is older than 90 calendar days no longer within the valid reporting period. |
| F1005 | File | Total Transaction Value in checksum row does not match to the sum of Transaction Values of all records. |
| F1006 | File | Total Stamp Duty Amount in checksum row does not match to the sum of Stamp Duty Amount of all records. |
| F1007 | File | Item No. not in sequence. |
| F1020 | File | Outside submission window. |
| R1008 | Record | Data record error: Invalid trade date. |
| R1009 | Record | Data record error: Firm ID does not hold valid DCMM permit on the trade date. |
| R1010 | Record | Data record error: Broker Number does not hold valid DCMM permit on the trade date. |
| R1011 | Record | Data record error: Stock Code is not a dual-counter stock on the trade date. |
| R1012 | Record | Data record error: Specified Trade Reference Group cannot be found in HKEX record. |
| R1013 | Record | Data record error: Corresponding trade is a cancelled trade. |
| R1014 | Record | Data record error: Invalid data format (Field Name#). |
| R1015 | Record | Data record error: (Field Name#) data value does not match the HKEX |

| Result Code | File / Record Level | Result Text |
|-------------|---------------------|--|
| | | record. |
| R1016 | Record | Another data record of the same Trade Reference Group and Side does not pass the validation. |
| R1017 | Record | The sum of Quantity for records of the same Trade Reference Group and Side is different to HKEX record. |
| R1018 | Record | The sum of Transaction Value for records of the same Trade Reference Group and Side is different to HKEX record. |
| F0101 | File | All records are validated successfully. |
| F0102 | File | General system error. Contact HKEX. |

Field Name that fails the validation. If there are more than one failure fields, only the first field is returned.

D DCMM Trade Volume Summary Report

DCMM Trade Volume Summary Report is generated by HKEX, which acts as a reference report for each DCMM and DS to compare its own traded quantities of RMB counter and the corresponding HKD counter.

D.1 DCMM Trade Volume Summary Report filename convention

The filename convention of the interface file is as follows:

DCMMTVSR_M<NNNNN>SD_YYYYMMDD.ZIP for DCMM
DCMMTVSR_D<NNNNN>DS_YYYYMMDD.ZIP for DS

Contains

DCMMTVSR_M<NNNNN>SD_YYYYMMDD.CSV for DCMM
DCMMTVSR_D<NNNNN>DS_YYYYMMDD.CSV for DS

Where:

NNNNN: Broker Firm ID (right-aligned padded with zero (0)) for DCMM
DS Firm Code for DS
YYYYMMDD: Trade Date

There will only be 1 DCMM Trade Volume Summary Report per ~~broker firm~~ DCMM/DS per trading day.

D.2 DCMM Trade Volume Summary Report distribution time

| Time | Party | Activity |
|----------------------|-------|---|
| By 2:00pm on T+1 Day | HKEX | Distribution of DCMM Trade Volume Summary Report (DCMMTVSR_ <u>NNNNN</u> _ * YYYYMMDD.ZIP). |

D.3 File collection and distribution channel

DCMMs/EPsDSs can download DCMM Trade Volume Summary Report on T+1 of Hong Kong Securities Market through ECP.

Collection through ECP

| | |
|---------------------------------|---|
| Collection Path (SFTP) | /download/DCMMTVSR |
| Collection Page (Web Interface) | Download Corner of ECP Web Interface - "DCMM Trade Volume Summary Report" |

D.4 DCMM Trade Volume Summary Report File layout

The report file is in csv format, delimited by comma, without any blank lines.

File format:

| Field No. | Field Name | Description |
|------------|------------------------------|---|
| 1 | Trade Date | The trading date |
| 2 | Firm ID | The DCMM firm ID |
| <u>3</u> | <u>DS Broker ID(s)</u> | <u>"NA" for DCMM, or the DS Broker ID(s)</u> |
| <u>34</u> | RMB Counter Stock Code | The stock code in RMB counter |
| <u>45</u> | Total RMB Buy Traded Volume | The total traded volume in RMB counter on Buy side |
| <u>56</u> | Total RMB Sell Traded Volume | The total traded volume in RMB counter on Sell side |
| <u>67</u> | Total HKD Buy Traded Volume | The total traded volume in HKD -counter on Buy side |
| <u>78</u> | Total HKD Sell Traded Volume | The total traded volume in HKD counter on Sell side |
| <u>89</u> | Result Code | The trade volume checking result code |
| <u>910</u> | Result Text | The corresponding result text |

Result code and text:

| Result Code | Result Text |
|-------------|---|
| R1001 | HKD counter traded volume exceeds the opposite side of RMB counter. |
| R1002 | HKD counter traded volume is in line with the opposite side of RMB counter. |

D.5 Sample of DCMM Trade Volume Summary Report file

For DCMM,

Filename: DCMMTVSR_01234M01234SD_20230316.CSV

| Trade Date | Firm ID | DS Broker ID(s) | RMB Counter Stock Code | Total RMB Buy Traded Volume | Total RMB Sell Traded Volume | Total HKD Buy Traded Volume | Total HKD Sell Traded Volume | Result Code | Result Text |
|-----------------|-------------|------------------|------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|--------------|--|
| 20230316 | 1234 | NA | 84244 | 16000 | 8000 | 14000 | 6000 | R1001 | HKD counter traded volume exceeds the opposite side of RMB counter. |
| 20230316 | 1234 | NA | 84246 | 2000 | 2000 | 0 | 0 | R1002 | HKD counter traded volume is in line with the opposite side of RMB counter. |
| <u>20230316</u> | <u>1234</u> | <u>4123</u> | <u>84245</u> | <u>16000</u> | <u>8000</u> | <u>14000</u> | <u>6000</u> | <u>R1001</u> | <u>HKD counter traded volume exceeds the opposite side of RMB counter.</u> |
| <u>20230316</u> | <u>1234</u> | <u>4124 4125</u> | <u>84245</u> | <u>2000</u> | <u>2000</u> | <u>0</u> | <u>0</u> | <u>R1002</u> | <u>HKD counter traded volume is in line with the opposite side of RMB counter.</u> |

For DS,

Filename: DCMMTVSR_DASDFGDS_20230316.CSV

| Trade Date | Firm ID | DS Broker ID(s) | RMB Counter Stock Code | Total RMB Buy Traded Volume | Total RMB Sell Traded Volume | Total HKD Buy Traded Volume | Total HKD Sell Traded Volume | Result Code | Result Text |
|-----------------|-------------|-----------------|------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|--------------|--|
| <u>20230316</u> | <u>1234</u> | <u>4123</u> | <u>84245</u> | <u>16000</u> | <u>8000</u> | <u>14000</u> | <u>6000</u> | <u>R1001</u> | <u>HKD counter traded volume exceeds the opposite side of RMB counter.</u> |

Filename: DCMMTVSR_DQWERTDS_20230316.CSV

| Trade Date | Firm ID | DS Broker ID(s) | RMB Counter Stock Code | Total RMB Buy Traded Volume | Total RMB Sell Traded Volume | Total HKD Buy Traded Volume | Total HKD Sell Traded Volume | Result Code | Result Text |
|-----------------|-------------|------------------|------------------------|-----------------------------|------------------------------|-----------------------------|------------------------------|--------------|--|
| <u>20230316</u> | <u>1234</u> | <u>4124 4125</u> | <u>84245</u> | <u>2000</u> | <u>2000</u> | <u>0</u> | <u>0</u> | <u>R1002</u> | <u>HKD counter traded volume is in line with the opposite side of RMB counter.</u> |

E Appendix I

E.1 Acknowledgment File

E.1.1 Description

The Acknowledgment File is applicable to ECP (SFTP) Interface submission only. It contains a SHA-256 checksum of the submitted file to compromise the file integrity. It acknowledged the submitted file is received by HKEX and is accepted to further process.

For example, DCMM Activity Form file uploaded and accepted by the system will be removed from the submission folder of the SFTP user account, and an Acknowledgment File “<Original-filename>.<HHMMSS>.rcvd”, e.g. DCMMAF_XXX123_20210401.zip.093000.rcvd will be generated in the submission folder. When there appears an Acknowledgment File of duplicate file name, e.g. multiple files of same file name are received by HKEX at the same time and accepted, a file running sequence number will be assigned to the Acknowledgment File “<Original-filename>.<HHMMSS>.<FILESEQ>.rcvd”,

e.g. DCMMAF_XXX123_20210401.zip.093000.1.rcvd

If the file is submitted via ECP Web Interface, the checksum detail will be displayed at the submission page or can be enquired from the Activity Enquiry page.

E.1.2 File Layout

Summary

| | |
|-----------------------|---|
| File Extension | .rcvd |
| File Name | <p><Original-filename>.<HHMMSS>[.FILESEQ].rcvd</p> <p><i>where:</i></p> <p>[.FILESEQ] = File running sequence exists only when appears duplication of file name</p> <p>Example:</p> <p>When three files of same file name are uploaded at 09:30:00 and are accepted</p> <p>1st file: <Original-filename>.093000.rcvd</p> <p>2nd file: <Original-filename>.093000.1.rcvd</p> <p>3rd file: <Original-filename>.093000.2.rcvd</p> |
| File Type | Text file delimited by DOS newline characters (CR+LF). Record data fields are in fixed length. |

| | |
|--|--|
| | ASCII encoded. |
| Distribution Time | Within 5 minutes after submitting File. |
| Distribution Path (ECP (SFTP) Interface only) | At the submission folder of submitted file |
| Distribution Page (ECP Web Interface only) | Not Applicable |

Data Record

| Field No. | Data | Format | Synopsis |
|-----------|------------------|--------|-------------------------------------|
| 1 | SHA-256 checksum | X(66) | SHA-256 checksum of submission file |
| 2 | File name | X(255) | Submission file name |

E.2 Rejection File

E.2.1 Description

The Rejection File is applicable to ECP (SFTP) Interface submission only. It acknowledged the submission file is received by HKEX and is rejected. For a file with multiple errors, only the first error detected will be included and submitter should review the whole file again.

For example, DCMM Activity Form File. DCMM Activity Form files rejected by the system will be removed from the submission folder of the SFTP user account, and a Rejection File "<Original-filename>.<HHMMSS>.rej",

e.g. DCMMAF_02222_20210401.zip.093000.rej will be generated at the submission folder. When there appears a Rejection File of duplicate file name, e.g. multiple files of same file name are submitted to HKEX at the same time and are rejected, a file running sequence number will be assigned to the Rejection File "<Original-filename>.<HHMMSS>.<FILESEQ>.rej", e.g. DCMMAF_02222_20210401.zip.093000.1.rej.

A submitted file will be rejected for example:

- File name of submitted file is not specified correctly: e.g. DCMM Activity Form File DCMMAF_02222_20210401.zip is in wrong format (see section A.1 for correct file name format); or
- Date in the file name is invalid or past-/post-dated; or
- The file submission is made beyond submission hour.

Please refer to Appendix A.3 for full list of Rejection Code.

If the file is submitted via ECP Web Interface, the rejection code and reason will be displayed at submission page or can be enquired from the Activity Enquiry page.

No Result File will be given when the submitted file is rejected.

E.2.2 File Layout

Summary

| | |
|--|---|
| File Extension | .rej |
| File Name | <Original-filename>.<HHMMSS>[.FILESEQ].rej <i>where:</i> [.FILESEQ] = File running sequence exists only when appears duplication of file name Example: When three files of same file name are uploaded at 09:30:00 and are rejected 1 st file: <Original-filename>.093000.rej 2 nd file: <Original-filename>.093000.1.rej 3 rd file: <Original-filename>.093000.2.rej |
| File Type | Text file delimited by DOS newline characters (CR+LF). Record data fields are in fixed length. ASCII encoded. |
| Distribution Time | Within 5 minutes after submitting File. |
| Distribution Path (ECP (SFTP) Interface only) | At submission folder of submitted file |
| Distribution Page (ECP Web Interface only) | Not Applicable |

Data Record

| Field No. | Data | Format | Synopsis |
|-----------|------------------|--------|-----------------------|
| 1 | Rejection Code | X(5) | Refer to Appendix A.3 |
| 2 | Rejection Reason | X(255) | Refer to Appendix A.3 |

E.3 Rejection Codes used when submitted file is rejected

| Rejection Code | Synopsis |
|----------------|--|
| 2007 | Fail to decrypt uploaded file |
| 4003 | Rejected by virus scan |
| 4004 | Exceed file size limit |
| 4005 | Zero file size |
| 4006 | File name too long |
| 4007 | File name contains invalid characters |
| 4008 | File Submission without client consensus is not accepted |
| 4505 | Invalid file name |
| 4506 | Invalid file name extension |
| 4507 | Beyond submission hour |