

# **Taipei Exchange**

## **Main Board Stock IP Feed Specification**

**(Market Information Transmission Operation Manual)**

**Version: V.12.12**

**Produced by the Taipei Exchange**

## Information Transmission Manual Update Log

Version	Date	Updated Contents
V.06	2002/07/01	<ol style="list-style-type: none"> <li>1. In complying with the disclosure of the best five stock transactions and high-speed transaction transmission needs, other than adding the “HEADER” field to all formats, the original format 1 to format 8 have been simplified to format 1 to format 6.</li> <li>2. The shared format for original equivalent trading and fixed-price trading has been changed to equivalent trading formats 1 to 6, and fixed-price trading formats 7 to 10.</li> <li>3. The measure is scheduled take effect in early 2003.</li> </ol>
V.06.01	2003/06/02	<ol style="list-style-type: none"> <li>1. In complying with new changes in the new system of the consistent use of a single code: <ol style="list-style-type: none"> <li>(1)According to the new Rules for Assignment of Securities Ticker Symbols, the securities industry category comparison table has been modified.</li> <li>(2)Due to some securities have a meaning that cannot be directly identified by ticker symbols (such as orders based on the original number of underlying stock for call warrants/put warrants proportionally/non-proportionally), the field “Security Group” has been added to format 1 to identify the securities.</li> </ol> </li> <li>2. Changes have been made in complying with medium and small sized enterprise securities: <ol style="list-style-type: none"> <li>(1)The field “Stock notes” has been added for medium and small enterprise securities recognition (the name is temporary; the standard is subject to the formal TPEX announcement).</li> <li>(2)The 14th item “Medium and Small Sized Enterprise Security Indices” has been added in format 3. There is no index for stock so far, and its value is set at 0. The title is subject to the formal TPEX announcement.</li> </ol> </li> <li>3. Other changes: <ol style="list-style-type: none"> <li>(1)The exercise ratio field in format 1 has been enlarged.</li> <li>(2)The field description of the statistics time “999999” in formats 2 and 3 have been revised.</li> </ol> </li> </ol>
V.07	2003/12/10	<ol style="list-style-type: none"> <li>1. Format 11 has been newly added, transmitting the information regarding the single stock closing price of equivalent trading.</li> </ol>
V.07.01	2005/05/04	<ol style="list-style-type: none"> <li>1. The Rules for Assignment of Securities Ticker Symbols for call (put) warrants have been revised.</li> </ol>

Version	Date	Updated Contents
		<p>2. The Rules for Assignment of Exchangeable Debts have been newly added.</p> <p>3. Industry codes “61 Cement Kiln Construction” and “62 Plasticized Textiles” have been deleted.</p> <p>4. Description of “Irregular Securities Codes” has been revised, adding the flexibility to adjust the disposal of judgment.</p>
V.07.02	2005/06/15	<p>1. The description of “category” in format 5 has been revised, adding emergency announcements.</p> <p>2. In complying with the stability of instantaneous price measures, “fluctuation notes”, “matching schedule”, and “real-time trading”.</p>
V.08	2005/12/19	1. Format 13 has been newly added, transmitting real-time display information on odd-lot trading.
V.08.01	2007/01/16	<p>1. In complying with the adjusted reclassification of the industry category of (TPEX) Main board companies.</p> <p>The transmission indices and field orders have been adjusted.</p>
V.09	Amended on 2008/07/15 Enforced on 2008/10	<p>1 In complying with foreign enterprises that are listed in Taiwan, the definition item field of format 1 has been revised, adding “securities category”.</p> <p>2. Format 14 of TPEX-listed stocks - full-name information on stock call (put) warrants has been newly added.</p> <p>3. Format 15 of (TPEX) Main board stock - information on stopped trading stocks for the day has been newly added.</p> <p>4. Format 16 of (TPEX) Main board stock - information on the trading transmission system “Heartbeat” has been newly added.</p>
V.09.01	Amended on 2008/12	In complying with the products of index warrants, fields of the length of messages, format versions, performance prices, and exercise ratios of trading transmission format 1 have been revised.
V.09.02	Amended on 2009/08	In complying with the newly added products of call warrants, Appendix B of the stock coding rules has been revised.
V.09.03	Amended on 2009/11	Appendix B of the stock coding rules has been revised, beneficiary certificates, depositary receipts (TDR), and Exchange-Traded Funds (ETF) have been added.
V.09.04	Amended on 2010/03	<p>1 、 Amended format 1: Basic information on (TPEX) Main board stock, notes regarding fields of other information, and trading information lines have been added.</p> <p>2 、 Format 12 has been newly added: Newly Compiled TPEX Indices</p> <p>Format 17 has been newly added: information on real-time market equivalent trading for second IP (TPEX) Main board stocks</p> <p>Format 18 has been newly added: information on the single stock opening (closing) price of equivalent trading for second IP (TPEX) Main board stocks</p> <p>Appendix E has been newly added: newly compiled TPEX indices table</p> <p>Appendix F has been newly added: Table of Online Transmission Formats</p>
	Amended on 2010/05	1 、 In complying with the newly added “foreign object call (put) warrants” and “expansion of certification coding”, the field

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		descriptions of the stock coding rules in Appendix B and in format 14 have been revised.
V.09.05	Amended on 2010/07 Enforced on 2011/01	In complying with “the Frequency to Display the Statistics of Indices and Trading Orders is 15 Seconds” and “Trading and Orders Statistics Category”, statistics categories in Format 2 and Format 4 have been newly added, and Formats 2, 3, and 4 have been revised with a sending frequency of 15 seconds.
V.10	Amended on 2011/03 Enforced on 2011/08	<ol style="list-style-type: none"> <li>1. The field of the “corresponding order of stock codes” in formats 1, 6, 9, 10, 13, and 17 has been replaced with “Stock Codes.</li> <li>2. Format 6 of (TPEX) Main board companies has been adjusted. A matching calculation and data display mechanism for delayed closing prices has been added.</li> <li>3. To respond to the Suspension of Market Trading/ Resumption of Trading Program, format 19 of main board stocks “Information on Suspension/Resumption of Trading” has been added and Appendix F has been adjusted.</li> <li>4. “Rules for Assignment of Securities Ticker Symbols” in Appendix B has been adjusted. Callable Bear Contracts have been added.</li> </ol>
V.10.01	Amended on 2011/10	Appendix 5 has been added and revised; the new “TPEX Online Game Industry Index” has been newly added.
V.10.02	Amended on 2011/11 Enforced on 2012/01	<ol style="list-style-type: none"> <li>1. In complying with the display information on “Individual Stocks Unusually Recommended in Cable TV Financial Programs”, “Specifically Abnormal Securities”, and “The Face Value for Foreign Companies Applying for Listing on the TPEX is not Limited to \$10”, fields including 3.1.11 “Notes on Non-10 Face Value” of format 1 have been newly added. 3.1.12 “Notes regarding Unusually Recommended Individual Stocks” and 3.1.13 “Notes on Specific Abnormal Securities” have been added. After amending, the format versions have been adjusted to 06 and the data length has been adjusted to 76 bytes.</li> <li>2. Appendix B has been adjusted: Principles for the stock coding rules.</li> </ol>
V.10.03	Amended on 2013/01	Appendix B has been adjusted: stock coding rules (convertible bonds, exchangeable corporate bonds, exchangeable financial bonds).
V10.04	Amended on 2013/07 Enforced on 2014/01	“32: Cultural Innovation Industry” has been added in Industries of (TPEX) main board companies, format 3 transmission index items, and the field order has been adjusted. Appendix C has been revised: Stock Industry Category.
V10.05	Amended on 2014/01 Enforced on 2014/01	Formats 2, 3, 4, and 12 have been adjusted with a transmission frequency of 10 seconds.
V.10.06	Amended on 2014/02 Enforced on 2014/03	In complying with TPEX “High Dividend Yield Index”, the description of format 12 has been adjusted and Appendix E has been added and revised.
V.10.07	Amended on 2014/04 Enforced on 2014/06	In complying with TPEX “Labor Employment 88 Index”, the description of format 12 has been adjusted and Appendix E has been added and revised.
V.10.08	Amended on 2014/08 Enforced on 2014/09	In complying with the “Compensation Index” compiled by TPEX, the description of format 12 has been adjusted and Appendix E has been added and revised.

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V.10.09	Amended on 2014/12 Enforced on 2014/12	Formats 2, 3, 4, and 12 have been adjusted with a transmission frequency of 5 seconds.
V.11	Amended on 2015/03 Enforced on 2015/06	1. Data Formats 6, 11, 17, and 18 have been revised, adding disclosure of the calculation of trading volumes at the opening and closing periods of the trading day and 5 trading volumes. 2. Format 19 has been revised, adding the definition of “Circuit Breaker”.
V.11.01	Amended on 2015/06 Enforced on 2015/06	In complying with the TPEx Corporate Governance Index, the description of format 12 has been adjusted and Appendix E has been added and revised.
V.11.02	Amended on 2015/07 Enforced on 2015/10	1. Format 1 has been revised, widening the field length of the Chinese short names for stocks, adding field notes for day trading, notes of exemption from the unchanged short selling notes, securities exempted from unchanged short selling price constraint, call auction order matching intervals, upper limit price, lower limit price and maturity dates. 2. The field definitions of formats 6 and 17 “status notes” have been adjusted, adding notes on information on opening and closing.
V.11.03	Amended on 2016/03 Enforced on 2016/06	In complying with the “Securities Abbreviation Bytes Expansion Program”, the full description field of call (put) warrants of (TPEx) main board stocks has been updated.
V.11.04	Amended on 2016/06 Enforced on 2016/09	In complying with listed companies, industry categories of Agricultural Technology Industry (code: 33), Appendix C: Code Table for Stock Industry Categories has been revised.
V.11.05	Amended on 2017/01 Enforced on 2017/01	In complying with Exchange-Traded Funds (ETF) of Appendix B: stock coding rules.
V.11.06	Amended on 2017/02 Enforced on 2017/05/08	1. In complying with compiling other electronics categories and other category of indices, Format 3 of the transmission index items and field orders have been adjusted. 2. In order to expand TPEx to compile indices sending individual numbers, the content description of Format 12 has been adjusted.
V.11.07	Amended on 2017/06 Enforced on 2017/09/25	1. Format 12 has been revised: Newly Compiled TPEx Indices. 2. In complying with the newly added “TIP Taiwan BIO Index” (code IX0103), Appendix E: Newly Compiled TPEx Index Table has been updated.
V.11.08	Amended on 2017/12 Enforced on 2018/03/12	1. In complying with (TPEx) main board stocks, industry categories of “Electronic Commerce” has been added (code: 34), Appendix C: Stock Industry category code table has been revised. 2. Appendix B has been revised: Rules for Assignment of Securities Ticker Symbols.
V.11.09	Amended on 2018/05 Enforced on 2018/05/28	In complying with the newly added “TIP Taiwan SMCG Index” (code IX0108) and “TIP Taiwan IPO Index” (code IX0109), Appendix E: newly compiled TPEx index table has been updated.
V.11.10	Amended on 2018/10 Enforced on 2019/04/29	In complying with the “Opening of Securities Firms Issuing ETNs”, revising Appendix B: stock coding rules and ETNs have been revised.

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V.11.11	Amended on 2019/02 Enforced on 2019/03/27	In complying with the newly added TPEX 200 Index (code IX0118) and “TPEX 200 Total Return Index” (code IR0118), Appendix E: newly compiled TPEX index table has been updated.
V.11.12	Amended on 2019/09 Enforced on 2019/12/16	Format 21 “Basic Information on “TPEX Real-time Market Indices” has been added.
V.12.00	Amended on 2018/10 Enforced on 2020/03/23	In complying with the enforcement of “Full Market Continuous Trading” and “Price Field Expansion Program”: 1. The price fields of format 1, format 6, format 9, format 10, format 11, format 13, format 17 and format 18 are 9(5)V9(4). 2. Descriptions of market order price for format 6 and format 17 have been added. 3. Information on stock market snapshots in format 20 has been newly added.
V.12.01	Amended on 2019/02 Enforced on 2020/03/23	In complying with the newly compiled TPEX 200 Index, V.12.01 and V.11.11 have been simultaneously revised (these have different enforcement dates), and the content of the revision is the same as V.11.11.  In complying with the enforcement of “Full Market Continuous Trading” and “Price Field Expansion Program”: Information on stock market snapshots in format 20 has been adjusted. 3 fields: opening price, the highest transaction price, and the lowest transaction price of the trading day have been newly added.
V.12.02	Amended on 2019/09 Enforced on 2020/03/23	Format 21 “Basic Information on TPEX Market Real-time Indices” has been added. V.12.02 and V.11.12 have been simultaneously revised (these have different enforcement dates), content of the revision is the same as V.11.12.
V.12.03	Amended on 2020/03/18	Appendix E has been removed: newly compiled TPEX indices table. The information of all newly compiled TPEX indices can be retrieved from the Format 21 before the market opens.
V.12.04	Amended on 2020/05 Enforced on 2020/10/26	According to the Intraday odd lot trading 1. Format 22 “Basic Data of Intraday odd lot trading Stocks.” has been added. 2.Format 23 “Real-time Market Data of Intraday odd lot trading stock” has been added. Added appendix E: Table of Transmission Setting.
V.12.05	Amended on 2020/06 Enforced on 2020/11/09	Added appendix G: Trading Currency Code.
V.12.06	Amended on 2021/03 Enforced on 2021/6/28	In complying with the enforcement of “Pioneer Stock Board”, format 1, format 2 and format 4 have been adjusted.
V.12.07	Amended on 2021/12 Enforced on 2022/6/27	Formats added 1. Format 24: Snapshot Information on Continuous Trading for (TPEX) Main Board Call (Put) Warrants. 2. Format 25: Available balance for Securities Borrowing and Lending. Revised the formats name in the below.

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		1. Format 14: Full Information of Call (Put) Contracts on (TPEX) Main Board. 2. Format 17: Real-time Market Information on Continuous Trading for (TPEX) Main Board Call (Put) Warrants. 3. Format 18: Information on Continuous Trading of the Opening and Closing of the Market for (TPEX) Main Board Call (Put) Warrants.
V.12.08	Amended on 2022/3 Enforced on 2022/4/25	In complying with the “Principles for Assignment of Ticker Symbols in the Republic of China (Taiwan) Securities Markets” are revised, Appendix B of the stock coding rules has been revised and “Strategy ETN” has been added.
V.12.09	Amended on 2022/5 Enforced on 2022/6/6	In complying with the “Principles for Assignment of Ticker Symbols in the Republic of China (Taiwan) Securities Markets” are revised, Appendix B of the stock coding rules has been revised. 1. Stock type of “Certificates of Bond Conversion Entitlement” has been removed. 2. The coding rule of “General Preferred Stocks” has been revised. 3. “Exchangeable Preferred Stocks” has been added.
V.12.10	Amended on 2022/10 Enforced on 2022/12/12	In complying with the “Principles for Assignment of Ticker Symbols in the Republic of China (Taiwan) Securities Markets” are revised, Appendix B of the stock coding rules has been revised. 1. The coding rule of “Callable Bear Contract with domestic securities or index as underlying assets” has been revised.
V12.11	Amended on 2023/4 Enforced on 2023/7/3	1. In complying with the “Taipei Exchange Directions for Classifying and Adjusting the Industry Categories of TPEX Listed Companies” are revised, Appendix C: Stock Industry category code table has been revised. Appendix C: Stock Industry category code table Rename: 16. Tourism Industry to Tourism and Hospitality Add: 35. Green Energy and Environmental Services 36. Digital and Cloud Services 37. Sports and Leisure 38. Household Delete: 18. Wholesale & Retailing 34. E-commerce 2. Add transmission of Format 12 indices (including the data of Format 3 Weighted Index and industry category index) and Format 3 remains the same. 3. Format 21 : Format code of transferring set value to 12.
V12.12	Amended on 2023/9 Enforced on 2024/1/1	According to integrate the Pioneer Stock Board to Emerging Stock Board: 1. Format 1: 3.1.8 Market Remarks which the value is initialized to zero. The format length remains the same. 2. Format 2: Field 3.3 revises to Reserved Field. The value is 0. The format length remains the same.

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		3. Format 4: Filed 3.3 revises to Reserved Field 1. Field 3.5 revises to Reserved Field 2. The value is 0. The format length remains the same.

## Data Format Version Update Log

\Format Date\ Version	Format 1	Format 2	Format 3	Format 4	Format 5	Format 6	Format 7	Format 8	Format 9	Format 10	Format 11	Format 12
2002/7/1	1	1	1	1	1	1	1	1	1	1		
2003/6/2	2											
2003/12/10											1	
2005/12/19												
2008/07/15												
2008/12/26	3											
2010/03/05	4											1
2010/07/19		2		2								
2011/03/17	5					2			2	2		
2011/11/01	6											
2013/07/15			2									
2015/06/29						3					2	
2015/10/19	7											
2017/05/08			3									
2017/09/25												2
2020/03/23	8					4			3	3	3	
2021/06/28	9	3		3								
\Format Date\ Version	Format 13	Format 14	Format 15	Format 16	Format 17	Format 18	Format 19	Format 20	Format 21	Format 22	Format 23	Format 24
2002/7/1												
2003/6/2												
2003/12/10												
2005/12/19	1											
2008/07/15		1	1	1								
2008/12/26												
2010/03/05					1	1						
2010/07/19												
2011/03/17	2				2		1					
2011/11/01												
2013/07/15												
2015/06/29					3	2						
2016/06/27		2										
2019/12/16									1			
2020/03/23	3				4	3		1				
2020/10/26										1	1	
2022/06/27												1
\Format Date\ Version	Format 25											
2022/06/27	1											



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## 1. Introduction

In order to allow participants to get hold of real-time trading information of Main Board stocks and improve information transparency in order to promote its activity and fairness, Taipei Exchange (TPEX) has especially built an IP Feed Network Information Transmission System. TPEX will also continue optimizing the system, as well as adjusting transmission formats with the aim of providing a comprehensive service. In addition to adjusting data format changes, including publishing new products according to businesses, adjusting the trading system, and compiling new TPEX indices, TPEX has continuously been strengthening the system by improving the frequency of displaying trading information, increasing Heartbeat messages, and reinforcing the disclosure content to increase the quality and quantity of the service. Information which the “TPEX IP Feed Network” transmission system provides:

1. Basic Information on Trading of Individual Stocks.
2. Relevant Statistics Information on Continuous Trading for TPEX Stocks.
3. Real-time Information on Call (Put) Warrants of Continuous Trading.
4. Information on Call (Put) Warrants of Opening and Closing Price of Continuous Trading.
5. Full information on Call (Put) Warrants for (TPEX) Main Board Stocks.
6. Relevant Statistics Information on Fixed-price Trading for (TPEX) Main Board Stocks.
7. Information on Real-time Trading of After-Hour Odd-Lot.
8. Information on Real-time Trading of Intraday Odd-Lot for (TPEX) Main Board Stocks.
9. Information on Stop of Trading of the Day for (TPEX) Main Board Stocks.
10. Basic Information on TPEX Market Real-time Indices.
11. Relevant Information on TPEX Indices.
12. Market Announcements by the TPEX.
13. Snapshot Information on Continuous Trading for TPEX Stocks.
14. Available Balance for Securities Borrowing and Lending.

## **2. Connection Architecture**

### **2.1 Connection requirements**

2.1.1. Routers/switch routers equipped with IGMP feature shall be used to connect to the IP Data Transmission Network.

2.1.2. Requests for backup transmission lines are available depending on needs.

2.1.3. The TCP/IP shall be used as the protocol for all transmission circuits.

2.1.4. Depending on needs, one or two Routers/Switch Routers can be used to separately connect the dedicated line by the same information user room and the second information center Router/Switch Route to provide backup for each other.

### 3. Data Format

#### 3.1 Transmission Data Compression

Data are compressed with PACK BCD before transmission.

Description of PACK BCD

The last 4 bits of a byte from numbers “0” - “9” in ASCII code are transmitted. For example, the bit value of “1” in ASCII code is 00110001, so its PACK BCD bit value is 0001; and the bit value of “5” in ASCII code is 00110101, so its PACK BCD bit value is 0101.

Example of trading price displayed in Format 6:

Trading price displayed data format is 9(05)V9(04) (including 4 integers and 2 decimals)

Trading price=12345.6789

Original data format transmitted expressed in ASCII: ”1” ”2” ”3” ”4” ”5” ”6” ”7” ”8” ”9”

(It needs to transmit 9bytes) in hexagonal expressions:

0x31 0x32 0x33 0x34 0x35 0x36 0x37 0x38 0x39

(Totally 9bytes) (the recipient will decipher the codes into integers and decimals)

Compressed with PACK BCD=0x01 0x23 0x45 0x67 0x89 (PACK BCD expression)

(It needs to transmit only 5bytes): 0000 0001 0010 0011 0100 0101 0110 0111 1000 1001

(Totally 5bytes) (the recipient will decipher the codes into integers and decimals)

#### 3.2 Transmission Sequence

Please refer to Appendix A for details of the transmission sessions and intervals of different data formats.

#### 3.3 Data Formats

# Taipei Exchange Data Transmission Format

Format Code: Format 1

Page: \_1\_

Length (RL): Fixed length 114 bytes

Format title: Basic Information on Trading of Individual Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0114”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“01”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“09”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		101	11-111		
3.1	General Stock Data		55	11-65		
3.1.1	Stock Code	X(06)	6	11-16	ASCII	
3.1.2	Stock Abbreviation in Chinese	X(06)	16	17-32	ASCII	
3.1.3	Industry Category	X(02)	2	33-34	ASCII	
3.1.4	Stock Category	X(02)	2	35-36	ASCII	
3.1.5	Stock Entries	X(02)	2	37-38	ASCII	
3.1.6	Stock Anomaly Code	9(02)	1	39-39	PACK BCD	
3.1.7	Sector Remarks	X(01)	1	40-40	ASCII	
3.1.8	Market Remarks	X(01)	1	41-41	PACK BCD	‘0’
3.1.9	Today Reference Price	9(5)V9(4)	5	42-46	PACK BCD	
3.1.10	Rise Stop Price	9(5)V9(4)	5	47-51	PACK BCD	
3.1.11	Fall Stop Price	9(5)V9(4)	5	52-56	PACK BCD	
3.1.12	Non-\$10 face value indicator	X(01)	1	57-57	ASCII	
3.1.13	Abnormal recommendation indicator	X(01)	1	58-58	ASCII	
3.1.14	Abnormal securities indicator	X(01)	1	59-59	ASCII	
3.1.15	Day Trading Indicator	X(01)	1	60-60	ASCII	
3.1.16	Exemption of Unchanged Market Margin Sale Indicator	X(01)	1	61-61	ASCII	
3.1.17	Exemption of Unchanged Market Securities Lending Sale Indicator	X(01)	1	62-62	ASCII	
3.1.18	Matching Cycle Seconds	9(06)	3	63-65	PACK BCD	
3.2	Warrant (CBBC)Data		39	66-104		
3.2.1	Warrant(CBBC) ID	X(01)	1	66-66	ASCII	
3.2.2	Exercise (Strike) price	9(6)V9(4)	5	67-71	PACK BCD	

3.2.3	Previous Business Day Exercise Volume	9(10)	5	72-76	PACK BCD	
3.2.4	Previous Business Day Cancellation Volume	9(10)	5	77-81	PACK BCD	
3.2.5	Issuing Balance (Volume)	9(10)	5	82-86	PACK BCD	
3.2.6	Strike Ratio	9(06)V99	4	87-90	PACK BCD	
3.2.7	Upper Limit Price	9(6)V9(4)	5	91-95	PACK BCD	
3.2.8	Lower Limit Price	9(6)V9(4)	5	96-100	PACK BCD	
3.2.9	Maturity Date	9(8)	4	101-104	PACK BCD	
3.3	Other Information		6	105-110		
3.3.1	Trading Unit	9(05)	3	105-107	PACK BCD	
3.3.2	Trading Currency Code	X(03)	3	108-110	ASCII	
3.4	Note on market information line	9 (02)	1	111-111	PACK BCD	01/02
4	Checksum	X(01)	1	112-112	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	113-114	HEXACODE: 0D 0A	

#### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.

#### 2.1 Information Length

- (1) Expressed in PACK BCD (length: 2 bytes).
- (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE

2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).

2.3 Transmission Format Code: Expresses Format 1 in PACK BCD “01” (length: 1 byte).

#### 2.4 Transmission Format Version

- (1) Expressed in PACK BCD, where “09” means version 9 (length: 1 byte).
- (2) Versions are numbered from 1, and every format has individual version numbers.

#### 2.5 Transmission S/N

- (1) Expresses Transmission S/N in PACK BCD (length: 4 bytes).
- (2) The basic data of Main Board stocks on stock market are transmitted repeatedly with Format 1 before the market opens; and the basic data of new Main Board stocks are transmitted repeatedly with Format 1 after the market opens. All cycles are numbered from 1.

- 3 BODY: Records general stock data, warrant (CBBC) data and foreign stock data, with a total of 101 bytes.
  - 3.1 General Stock Data: totally 55 bytes.
    - 3.1.1 Stock Code: Expressed in ASCII codes, totally 6 bytes.
    - 3.1.2 Stock Abbreviation: Expressed in ASCII 16 BYTES.
    - 3.1.3 Industry Category: Expressed in ASCII codes, totally 2 bytes.
      - (1) As the industry category of a stock can no longer be identified directly from the first two digits of a stock code in the new stock coding rules, please justify the industry category of industry-specific Main Board stocks and preferred stocks from this field.
      - (2) The said preferred stocks include preferred stocks, preferred stocks with warrants (CBBCs) and stock payment certificate with warrants (CBBCs). Please note that this field shows only the industry category code of respective stocks, and users should determine the category of stocks, e.g. preferred stock, preferred stock with warrants (CBBCs) etc, with reference to the original stock coding rules.
      - (3) Non-industry-specific stocks, such as beneficiary certificates (closed-end funds), warrants (CBBCs), depository receipts, foreign stocks, exercised bonds with warrants, convertible bonds and corporate bonds with warrants, are expressed in "00" in this field. Please justify stock of such category based on the original stock coding rules.
      - (4) Government bonds are displayed as usual; the value expressed in this field is the first and fourth codes of the stock code.
    - 3.1.4 Stock Category: Expressed in ASCII codes, totally 2 bytes. As some stocks contain special meanings (e.g. proportionally and un-proportionally issued Callable Bull(Bear) Contracts) that are unable to identified directly from the stock code, information contained in this field facilitates users to identify the special meanings of such stocks (see Stock Category Code Table, Appendix D, for details). Currently, no other securities will be shown in this field apart from warrants.
    - 3.1.5 Stock Entries
      - (1) Presented by ASCII 2 BYTE for identifying the data in the field of "Stock Code".
      - (2) If the field of Stock Entries shows SPACES, the definition of "Stock Code" field remained unchanged.
      - (3) Before the trading starts, the last entry of all basic information on individual stocks being transmitted in cyclical sequence will be marked by "AL" and the "Stock Code" field will be presented by "Total entries of Stocks".
      - (4) The data transmitted in cyclical sequence during trading hours will include the stocks added to the listing of TPEx on the same day and the last entry will be marked by "NE" in the field of "Stock Entries" while the field of "Stock Code" will be marked as "total new entries of stocks".
    - 3.1.6 Stock Anomaly Code
      - (1) Expressed in PACK BCD (length: 1 byte)
        - 00-Normal
        - 01-Attention
        - 02-Disposition
        - 03- Attention and Disposition
        - 04-Further Disposition
        - 05-Attention and Further Disposition
        - 06-Flexible Disposition



07-Attention and Flexible Disposition

- (2) See Articles 2, 3 and 6 for attention and disposition actions in the Taipei Exchange Corporation Directions for Announcement or Notice of Attention to Trading Information and Dispositions.

- 3.1.7 Sector Remarks: Default is zero.
- 3.1.8 Market Remarks: Expressed in ASCII codes, totally 1-byte. The value is initialized to zero.
- 3.1.9 Today Reference Price
- (1) Expressed in PACK BCD (length: 5 bytes)
  - (2) Government Bonds-0 (no rise and stop limits)
- 3.1.10 Rise Stop Price
- (1) Expressed in PACK BCD (length: 5 bytes)
  - (2) Government Bonds-Last trading price
- 3.1.11 Fall Stop Price
- (1) Expressed in PACK BCD (length: 5 bytes)
  - (2) Government Bonds-Last trading price
- 3.1.12 Non-\$10 face value indicator: Presented in ASCII 1 BYTE; its values are either "Y" or SPACE, with SPACE as the default. A value of "Y" denotes that the underlying stock was issued at a face value other than \$10.
- 3.1.13 Abnormal recommendation indicator: Presented in ASCII 1 BYTE; its values are either "Y" or SPACE, with SPACE as the default. A value of "Y" indicates that the security is under the influence of abnormal recommendation on cable television.
- 3.1.14 Abnormal securities indicator: Presented in ASCII 1 BYTE; its values are either "Y" or SPACE, with SPACE as the default. A value of "Y" denotes an abnormal security.
- 3.1.15 Day Trading Indicator: Presented with ASCII 1 BYTE, its value is "A", "B" or SPACE with SPACE as the default. A value of "A" denotes Buy first then Sell, or Sell first then Buy Day Trading Securities. A value of "B" denotes Buy first then Sell Day Trading Securities. A value of SPACE denotes Non-Day Trading Securities.
- 3.1.16 Exemption of Unchanged Market Margin Sale Indicator: Presented with ASCII 1 BYTE, its value is "Y" or SPACE with SPACE as the default. A value of "Y" denotes Unchanged Market Margin Sale Securities.
- 3.1.17 Exemption of Unchanged Market Lending Sale Indicator: Presented with ASCII 1 BYTE, its value is "Y" or SPACE with SPACE as the default. A value of "Y" denotes Unchanged Market Lending Sale Securities.
- 3.1.18 Matching Cycle Seconds: 6 digits number presented with PACK BCD (Length: 3 BYTE), records the matching cycle seconds of the individual stock using aggregate auction. A value of "0" denotes the individual stock using continuous market method.
- 3.2 Warrant (CBBC) Data: Totally 39 bytes
- 321 Warrant (CBBC) ID: Expressed in ASCII code (1 byte); default value is space. A value of "Y", denotes the stock has warrant (CBBC) data, and users must read the Warrant (CBBC) Data field in the BODY. If the value is "", the warrant(CBBC) data are "0".
- 322 Performance Price: Expressed in PACK BCD (lengths: 5 bytes) and informs the latest performance price. In index certificates, this informs the latest performance index data.
- 323 Previous Business Day Exercise Volume: Expressed in PACK BCD (length: 5 BYTE) for 1000 every warrants (CBBC).
- 324 Previous Business Day Cancellation Volume: Expressed in PACK BCD (length: 5 BYTE) for every 1000 warrants (CBBC).
- 325 Issued Balance (Volume): Expressed in PACK BCD (length: 5 BYTE) for every 1000 warrants

- (CBBC).
- 326 Exercise Rate: Expressed in PACK BCD (lengths: 4 bytes) and records the latest amount of convertible shares per thousand units. For index certificates, this refers to the amount of convertible index value per thousand units in certificate. For example, if the underlining of the warrant (CBBC) is stock and the value in this field is “1000.00”, the exercise rate per unit is 1. If the value is “300.00”, the exercise rate per unit is “0.3”. If the certificate target is index and the value in this field is “1000.00”, the exercise rate per unit is 1. If the value is “500.00”, the exercise rate per unit is “0.5”.
- 327 Upper Limit Price: Presented with PACK BCD (length: 5 BYTES), display the warrant upper limit price.
- 328 Lower Limit Price: Presented with PACK BCD (length: 5 BYTES), display the warrant lower limit price.
- 329 Maturity Date: Presented with PACK BCD (length: 4 BYTE), display the warrant maturity date (Western Date).
- 3.3 Other Information: (length: 6 BYTE)
- 331 Trading Unit: The amount of shares for every trading unit of a stock (the amount of warrants for warrant and beneficiary certificates for beneficiary certificate) expressed in PACK BCD (length: 3 bytes). The default value is 1000. If the record value is 1000, this means every trading unit is 1000 shares. If it is 500, this means every trading unit is 500 shares.
- 332 Trading Currency Code: The code of currency that is used by a particular stock expressed in ASCII code (3 bytes). The default is SPACES. If the record value is “ ”, this means the currency is New Taiwan Dollar; or other currencies otherwise.
- 3.4 Note on market information line: in 2 digits, expressed by PACK BCD (length 1 BYTE). This is for the identification of IP and format of the information on individuals’ stocks of the day during trading hours.

The value of the field and definitions are shown in the table below:

Note on market information line	IP and corresponding format of real time information on individual stock during trading hours		
	Transmission line	Data format	Format of price at opening (close)
01	1 <sup>st</sup> IP	Format 6	Format 11
02	2 <sup>nd</sup> IP	Format 17	Format 18

- 4 Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
- 5 TERMINAL-CODE: The ending byte of every record, default is HEXACODE:0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 2

Page: \_1\_

Length (RL): Fixed length 142 bytes

Format title: Trading Statistics Information on Continuous Trading for TPEx Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0142”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“02”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“03”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		129	11-139		
3.1	Statistics Time	9(06)	3	11-13	PACK BCD	
3.2	Main Board					
3.2.1	Total Trading Amount	9(15)	8	14-21	PACK BCD	
3.2.2	Trading Volume	9(15)	8	22-29	PACK BCD	
3.2.3	Trading Records	9(10)	5	30-34	PACK BCD	
3.2.4	Total fund transaction value	9(15)	8	35-42	PACK BCD	
3.2.5	Fund transaction volume	9(15)	8	43-50	PACK BCD	
3.2.6	Fund transaction records	9(10)	5	51-55	PACK BCD	
3.2.7	Stock transaction value	9(15)	8	56-63	PACK BCD	
3.2.8	Stock transaction volume	9(15)	8	64-71	PACK BCD	
3.2.9	Stock transaction records	9(10)	5	72-76	PACK BCD	
3.2.10	Callable Bull Contract transaction value	9(15)	8	77-84	PACK BCD	
3.2.11	Callable Bull Contract transaction volume	9(15)	8	85-92	PACK BCD	
3.2.12	Callable Bull Contract transaction records	9(10)	5	93-97	PACK BCD	
3.2.13	Callable Bear Contract transaction value	9(15)	8	98-105	PACK BCD	
3.2.14	Callable Bear Contract transaction volume	9(15)	8	106-113	PACK BCD	
3.2.15	Callable Bear Contract truncation records	9(10)	5	114-118	PACK BCD	
3.3	Reserved Field	9(42)	21	119-139	PACK BCD	The field value is 0.
4	Checksum	X(01)	1	140-140	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	141-142	HEXACODE: 0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).

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- (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
- 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
- 2.3 Transmission Format Code: Expresses Format 2 in PACK BCD “02” (length: 1 byte).
- 2.4 Transmission Format Version
  - (1) Expresses version in PACK BCD, e.g. “03” for Version 3 (length: 1 byte).
  - (2) Versions are numbered from 1, and every format has individual version numbers.
- 2.5 Transmission S/N
  - (1) Expressed in PACK BCD (length: 4 bytes).
  - (2) Begins from 1 serially every day, and every format is numbered individually.
  - (3) Statistics data are transmitted once every 5 seconds, and the same statistics time has the same serial number.
- 3. BODY: Totally 129 bytes.
- 3.1 Statistics Time
  - (1) Expressed in PACK BCD (length: 3 bytes) to record time in hour, minute, second format (HHMMSS).
  - (2) Before the market opens, the system is displayed in the field, and the value in other trading statistics fields is “0”.
  - (3) The value recorded in this field is the system time produced by the auction market trading statistics of Main Board stocks on the market. At present, statistics are produced every 5 seconds. When the value displayed in the field is “999999”, it means that data displayed in the field are the last statistics, and they will be transmitted repeated for about 15 minutes.

### 3.2 Statistics on Main Board

Transactions note to information type:

#### 3.2.1~3.2.3 Statistics on market-wide transactions:

The information on market-wide transactions includes all securities traded in the market, and comprises total transaction value, volume and records.

#### 3.2.4~3.2.6 Statistics on fund transactions:

The statistics on fund transactions shall include data on beneficiary certificates, ETF, REAT, securitized financial assets, and REIT, and comprise total transaction volume, value and records.

#### 3.2.7~3.2.9 Statistics on stock trade:

Information on stock trade includes common shares and comprises total transaction value, volume and records.

#### 3.2.10~3.2.12 Statistics on Callable Bull Contract trade:

Information on the statistics of Callable Bull Contract trade includes Callable Bull Contracts with domestic securities or index as underlying assets and foreign securities or index as underlying assets. The content of information comprises the total transaction value, volume, and records.

#### 3.2.13~3.2.15 Statistics on Callable Bear Contract:

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The information on the statistics of Callable Bear Contracts includes Callable Bear Contracts with domestic securities or index as underlying assets or foreign securities or index as underlying assets. The content of the information includes the total transaction value, volume and records.

### 3.3 Reserved Field:

Expressed in PACK BCD (length: 21bytes), the field value is 0.

Notes to the attributes of fields:

3.2.1, 3.2.4, 3.2.7, 3.2.10, 3.2.13, total transaction value:

Represented by PACK BCD with length of 8 BYTE tracking on total transaction value on an accumulative basis.

3.2.2, 3.2.5, 3.2.8, 3.2.11, 3.2.14, transaction volume:

Represented by PACK BCD, with length of 8 BYTE, tracking on the transaction volume on an accumulative basis. The unit volume is a trading unit.

3.2.3, 3.2.6, 3.2.9, 3.2.12, 3.2.15, counts of transactions:

Represented by PACK BCD with length of 5 BYTE tracking on the records of transaction on an accumulative basis.

1. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
2. TERMINAL-CODE: The ending byte of every record, default is HEXACODE:0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 3

Page: \_1\_

Lengths (RL): Fixed length 129 bytes

Format title: Trading Statistics Information on Continuous Trading Indices for (TPEX) Main Board Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“03”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“03”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		116	11-126		
3.1	Index Time	9(06)	3	11-13	PACK BCD	
3.2	Amount of Indices Transmitted	9(02)	1	14-14	PACK BCD	“28”
3.3	Indices by Category	9(5)V99	4	15-126	PACK BCD	OCCURS 28-N Times
4	Checksum	X(01)	1	127-127	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	128-129	HEXACODE: 0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 3 in PACK BCD “03” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. “03” for Version 3 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
    - (3) Statistics data are transmitted once every 5 seconds, and the same statistics time has the same serial number.
    - (4) When the serial number is “00000000”, this means the data are the closing indices of the previous business day.
3. BODY
  - 3.1 Index Time
    - (1) Expressed in PACK BCD (length: 3 bytes) to record time in hour, minute, second format (HHMMSS).
    - (2) The value recorded in this field is the system time producing the auction market index statistics of Main Board stocks on the market. At present, statistics are produced every 5 seconds. When the value displayed in the Index Time and Transmission S/N fields is “0”, this means the data transmitted before the market opens are the closing indices of the

previous business day. When the value in the Statistics Time field is “999999”, this means that data displayed in the field are the last statistics, and they will be transmitted repeated for about 15 minutes.

- 3.2 Amount of Indices Transmitted: Expressed in PACK BCD to express the amount of indices transmitted (length: 1 byte).
  - 3.3 Indices by Category: Expressed in PACK BCD; and 4 bytes for each index field. Order of transmission items and fields are shown in the attached table.
- 4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
  - 5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE:0D 0A.

Attachment: Index Item and Field Transmission Sequence:

- (1) Weighted Index
- (2) Electronic Industry
- (3) Food Industry
- (4) Plastic Industry
- (5) Textile & Fiber
- (6) Electrical Engineering & Machinery
- (7) Appliance & Cable
- (8) Glass & Ceramics
- (9) Steel & Iron Industry
- (10) Rubber Industry
- (11) Construction Material and Construction
- (12) Sea Transport Industry
- (13) Tourism Industry
- (14) Financial
- (15) Wholesale & Retailing
- (16) Chemical Industry
- (17) Biotechnology & Medical Care Industry
- (18) Oil, Gas and Electricity Industry
- (19) Semiconductor Industry
- (20) Computer & Peripheral Equipment Industry
- (21) Optoelectronic Industry
- (22) Communications and Internet Industry
- (23) Electronic Parts / Components Industry
- (24) Electronic Products Distribution I Industry
- (25) Information Service Industry
- (26) Cultural and Creative Industry
- (27) Other Electronic Industry
- (28) Miscellaneous

# Taipei Exchange Data Transmission Format

## Format Code: Format 4

Page: \_1\_

Length (RL): Fixed length 304 bytes

Format title: Trading Order Statistics Information on Continuous Trading for TPEx Main Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0304”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“04”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“03”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		291	11-301		
3.1	Consignment AccumulatedTime	9(06)	3	11-13	PACK BCD	
3.2	Order Statistics for Main Board		80	14-93		
3.2.1	Consigned Purchase Records	9(08)	4	14-17	PACK BCD	
3.2.2	Consigned Sales Records	9(08)	4	18-21	PACK BCD	
3.2.3	Consigned Purchase Volume	9(08)	4	22-25	PACK BCD	
3.2.4	Consigned Sales Volume	9(08)	4	26-29	PACK BCD	
3.2.5	Fund Consigned Purchase Records	9(08)	4	30-33	PACK BCD	
3.2.6	Fund Consigned Sales Records	9(08)	4	34-37	PACK BCD	
3.2.7	Fund Consigned Purchase Volume	9(08)	4	38-41	PACK BCD	
3.2.8	Fund Consigned Sales Volume	9(08)	4	42-45	PACK BCD	
3.2.9	Stock Consigned Purchase Records	9(08)	4	46-49	PACK BCD	
3.2.10	Stock Consigned Sales Records	9(08)	4	50-53	PACK BCD	
3.2.11	Stock Consigned Purchase Volume	9(08)	4	54-57	PACK BCD	
3.2.12	Stock Consigned Sales Volume	9(08)	4	58-61	PACK BCD	
3.2.13	Callable Bull Contract Consigned Purchase Records	9(08)	4	62-65	PACK BCD	
3.2.14	Callable Bull Contract Consigned Sales Records	9(08)	4	66-69	PACK BCD	
3.2.15	Callable Bull Contract Consigned Purchase Volume	9(08)	4	70-73	PACK BCD	
3.2.16	Callable Bull Contract Consigned Sales Volume	9(08)	4	74-77	PACK BCD	
3.2.17	Callable Bear Contract Consigned Purchase Records	9(08)	4	78-81	PACK BCD	
3.2.18	Callable Bear Contract Consigned Sales Records	9(08)	4	82-85	PACK BCD	
3.2.19	Callable Bear Contract Consigned Purchase Volume	9(08)	4	86-89	PACK BCD	
3.2.20	Callable Bear Contract Consigned Sales Volume	9(08)	4	90-93	PACK BCD	
3.3	Reversed Field 1	9(32)	16	94-109	PACK BCD	The field value is 0



3.4	Rise-Fall Order Statistics for Main Board		160	110-269		
3.4.1	Overall Market Rise Stop Consigned Purchase Records	9(08)	4	110-113	PACK BCD	
3.4.2	Overall Market Rise Stop Consigned Sales Records	9(08)	4	114-117	PACK BCD	
3.4.3	Overall Market Rise Stop Consigned Purchase Volume	9(08)	4	118-121	PACK BCD	
3.4.4	Overall Market Rise Stop Consigned Sales Volume	9(08)	4	122-125	PACK BCD	
3.4.5	Overall Market Fall Stop Consigned Purchase Records	9(08)	4	126-129	PACK BCD	
3.4.6	Overall Market Fall Stop Consigned Sales Records	9(08)	4	130-133	PACK BCD	
3.4.7	Overall Market Fall Stop Consigned Purchase Volume	9(08)	4	134-137	PACK BCD	
3.4.8	Overall Market Fall Stop Consigned Sales Volume	9(08)	4	138-141	PACK BCD	
3.4.9	Funds Rise Stop Consigned Purchase Records	9(08)	4	142-145	PACK BCD	
3.4.10	Funds Rise Stop Consigned Sales Records	9(08)	4	146-149	PACK BCD	
3.4.11	Funds Rise Stop Consigned Purchase Volume	9(08)	4	150-153	PACK BCD	
3.4.12	Fund Rise Stop Consigned Sales Volume	9(08)	4	154-157	PACK BCD	
3.4.13	Funds Fall Stop Consigned Purchase Records	9(08)	4	158-161	PACK BCD	
3.4.14	Funds Fall Stop Consigned Sales Records	9(08)	4	162-165	PACK BCD	
3.4.15	Funds Fall Stop Consigned Purchase Volume	9(08)	4	166-169	PACK BCD	
3.4.16	Fund Fall Stop Consigned Sales Volume	9(08)	4	170-173	PACK BCD	
3.4.17	Stock Rise Stop Consigned Purchase Records	9(08)	4	174-177	PACK BCD	
3.4.18	Stock Rise Stop Consigned Sales Records	9(08)	4	178-181	PACK BCD	
3.4.19	Stock Rise Stop Consigned Purchase Volume	9(08)	4	182-185	PACK BCD	
3.4.20	Stock Rise Stop Consigned Sales Volume	9(08)	4	186-189	PACK BCD	
3.4.21	Stock Fall Stop Consigned Purchase Records	9(08)	4	190-193	PACK BCD	
3.4.22	Stock Fall Stop Consigned Sales Records	9(08)	4	194-197	PACK BCD	
3.4.23	Stock Fall Stop Consigned Purchase Volume	9(08)	4	198-201	PACK BCD	
3.4.24	Stock fall stop consigned sales volume	9(08)	4	202-205	PACK BCD	
3.4.25	Callable Bull Contract Rise Stop Consigned Purchase	9(08)	4	206-209	PACK BCD	
3.4.26	Callable Bull Contract Rise Stop Consigned Sales	9(08)	4	210-213	PACK BCD	
3.4.27	Callable Bull Contract Rise Stop Consigned Purchase Volume	9(08)	4	214-217	PACK BCD	
3.4.28	Callable Bull Contract Rise Stop Consigned Sales Volume	9(08)	4	218-221	PACK BCD	

3.4.29	Callable Bull Contract Fall Stop Consigned Purchase Records	9(08)	4	222-225	PACK BCD	
3.4.30	Callable Bull Contract Fall Stop Consigned Sales Records	9(08)	4	226-229	PACK BCD	
3.4.31	Callable Bull Contract Fall Stop Consigned Purchase Volume	9(08)	4	230-233	PACK BCD	
3.4.32	Callable Bull Contract Fall Stop Consigned Sales Volume	9(08)	4	234-237	PACK BCD	
3.4.33	Callable Bear Contract Rise Stop Consigned Purchase Records	9(08)	4	238-241	PACK BCD	
3.3.34	Callable Bear Contract Rise Stop Consigned Sales Records	9(08)	4	242-245	PACK BCD	
3.4.35	Callable Bear Contract Rise Stop Consigned Purchase Volume	9(08)	4	246-249	PACK BCD	
3.4.36	Callable Bear Contract Rise Stop Consigned Sales Volume	9(08)	4	250-253	PACK BCD	
3.4.37	Callable Bear Contract Fall Stop Consigned Purchase Records	9(08)	4	254-257	PACK BCD	
3.4.38	Callable Bear Contract Fall Stop Consigned Sales Records	9(08)	4	258-261	PACK BCD	
3.4.39	Callable Bear Contract Fall Stop Consigned Purchase Volume	9(08)	4	262-265	PACK BCD	
3.4.40	Callable Bear Contract Fall Stop Consigned Sales Volume	9(08)	4	266-269	PACK BCD	
3.5	Reserved Field 2	9(64)	32	270-301	PACK BCD	The field value is 0.
4	Checksum	X(01)	1	302-302	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	303-304	HEXACODE: 0D 0A	

## Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on the stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 4 in PACK BCD “04” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. “03” for Version 3 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
    - (3) Statistics data are transmitted once every 5 seconds, and the same statistics time has the same serial number.
3. BODY: totally 291 bytes.
  - 3.1 Consignment Accumulated Time

- (1) Expressed in PACK BCD (length: 3 bytes) to record time in hour, minute, second format (HHMMSS).
- (2) The value recorded in this field is the system time produced by the auction market consignment statistics of Main Board stocks on the market. At present, statistics are produced every 5 seconds. When the value in the Statistics Time field is “999999”, this means that data displayed in the field are the last statistics, and they will be transmitted repeated for about 15 minutes.

### 3.2, 3.4 Consignment Statistics for Main Board

Notes to data type:

#### 3.2.1-3.2.4, 3.4.1-3.4.8 Market-wide consignment statistics:

Market-wide consignment statistics information includes all consigned transactions of securities and the content comprises consigned purchase records, consigned sales records, consigned purchase volume, consigned sales volume, rise stop consigned purchase records, rise stop consigned sales records, rise stop consigned purchase volume, rise stop consigned sales volume, fall stop consigned purchase records, fall stop consigned sales records, fall stop consigned purchase volume, and stop consigned sales volume.

#### 3.2.5-3.2.5, 3.4.9~3.4.16 Statistics on consignment of funds:

Fund consignment statistics include beneficiary certificates, ETF, REAT, securitized financial assets, and REIT. The content of information comprises the consigned purchase records, consigned sales records, consigned purchase volume, consigned sales volume, rise stop purchase records, rise stop sales records, rise stop purchase volume, rise stop sales volume, fall stop purchase records, fall stop sales records, fall stop purchase volume, and fall stop sales volume.

#### 3.2.9-3.2.12, 3.4.17-3.4.24 Statistics on consignment of stocks:

The information on consignment of stocks is the statistics on common shares, and the content comprises consigned purchase records, consigned sales records, consigned purchase volume, consigned sales volume, rise stop consigned purchase records, rise stop consigned sales records, rise stop consigned purchase volume, rise stop consigned sales volume, fall stop consigned purchase records, fall stop consigned sales records, fall stop consigned purchase volume, and fall stop consigned sales volume.

#### 3.2.13-3.2.16, 3.4.25-3.4.32 Statistics on consignment of Callable Bull Contracts:

Information on consignment of Callable Bull Contracts is the statistics on Callable Bull Contracts with domestic securities or index and foreign securities or index as underlying assets. The content comprises consigned purchase records, consigned sales records, consigned purchase volume, consigned sales volume, rise stop consigned purchase records, rise stop consigned sales records, rise stop consigned purchase volume, rise stop consigned sales volume, fall stop consigned purchase records, fall stop consigned sales records, fall stop consigned purchase volume, and fall stop consigned sales volume.

#### 3.2.17-3.2.20, 3.4.33-3.4.40 Statistics on consignment of Callable Bear Contracts:

Information on consignment of Callable Bear Contracts is the statistics on Callable Bull Contracts with domestic securities or index and foreign securities or index as underlying assets. The content comprises consigned purchase records, consigned

sales records, consigned purchase volume, consigned sales volume, rise stop consigned purchase records, rise stop consigned sales records, rise stop consigned purchase volume, rise stop consigned sales volume, fall stop consigned purchase records, fall stop consigned sales records, fall stop consigned purchase volume, and fall stop consigned sales volume.

3.3 Reserved Field 1: Expressed in PACK BCD (length: 16bytes). The value of the field is 0.

3.5 Reserved Field 2: Expressed in PACK BCD (length: 32bytes). The value of the field is 0.

Notes to attributes of fields:

3.2.1, 3.2.5, 3.2.9, 3.2.13, 3.2.17, consigned purchase records:

Represented by PACK BCD (length of 4 BYTE) on the records of accumulated consigned purchase.

3.2.2, 3.2.6, 3.2.10, 3.2.14, 3.2.18, consigned sales records:

Represented by PACK BCD (length of 4 BYTE) on the records of accumulated consigned sales.

3.2.3, 3.2.7, 3.2.11, 3.2.15, 3.2.19, consigned purchase volume:

Represented by PACK BCD (length of 4 BYTE) on the accumulated consigned purchase volume. Each volume of transaction is a trading unit.

3.2.4, 3.2.8, 3.2.12, 3.2.16, 3.2.20, consigned sales volume:

Represented by PACK BCD (length of 4 BYTE) on the accumulated consigned sales volume. Each volume of transaction is a trading unit.

3.4.1, 3.4.9, 3.4.17, 3.4.25, 3.4.33, rise stop consigned purchase records:

Represented by PACK BCD (length of 4 BYTE) on the records of accumulated rise stop consigned purchase.

3.4.2, 3.4.10, 3.4.18, 3.4.26, 3.4.34, rise stop consigned sales records:

Represented by PACK BCD (length of 4 BYTE) on the records of accumulated rise stop consigned sales.

3.4.3, 3.4.11, 3.4.19, 3.4.27, 3.4.35, rise stop consigned purchase volume:

Represented by PACK BCD (length of 4 BYTE) on the records of accumulated rise stop consigned purchase volume. The volume of each transaction is one trading unit.

3.4.4, 3.4.12, 3.4.20, 3.4.28, 3.4.36, rise stop consigned sales volume:

Represented by PACK BCD (length of 4 BYTE) on the accumulated rise stop consigned sales volume. The volume of each transaction is one trading unit. )

3.4.5, 3.4.13, 3.4.21, 3.4.29, 3.4.37, fall stop consigned purchase records:

Represented by PACK BCD (length of 4 BYTE) on the records of accumulated rise stop consigned purchase.

3.4.6, 3.4.14, 3.4.22, 3.4.30, 3.4.38, fall stop consigned sales records:

Represented by PACK BCD (length of 4 BYTE) on the records of accumulated fall stop consigned sales.

3.4.7, 3.4.15, 3.4.23, 3.4.31, 3.4.39, fall stop consigned purchase volume:

Represented by PACK BCD (length of 4BYTE)

on accumulated fall stop consigned purchase volume. The volume of each transaction is one trading unit.

3.4.8, 3.4.16, 3.4.24, 3.4.32, 3.4.40, fall stop consigned sales volume:

Represented by PACK BCD (length of 4 BYTE) On accumulated fall stop consigned sales volume. The volume of each transaction is one trading unit.

4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 5

Page: \_1\_

Length (RL): Variable Length 14-74 bytes

Format title: Market Announcement Information on the TPEx

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“05”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“01”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		1-61	11-??		
3.1	Class	9(02)	1	11- 11	PACK BCD	
3.2	Announcement Items	X(01)-X(60)	1-??	12-??	ASCII	60 bytes at most
4	Checksum	X(01)	1	??-??	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	??-??	HEXACODE: 0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 5 in PACK BCD “05” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. “01” for Version 1 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Intraday announcements are transmitted repeatedly at regular intervals through Format 5. In case of new, emergency announcements, the cycle begins from 1.
3. BODY: Variable length from 1-61 bytes.
  - 3.1 Class: Expressed in PACK BCD (length: 1 byte)
    - “00” --- Contents of general announcements.
    - “09” --- End of general announcements.
    - “90” --- Contents of emergency announcements.
    - “99” --- End of emergency announcements.
  - 3.2 Announcement Items: Expressed in ASCII codes, variable length with a maximum of 60 bytes.
    - (1) When the value is “09”, it means “end of a general announcement”.
    - (2) When the value is “99”, it means “end of an emergency announcement”.

4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 6

Page: \_1\_

Length (RL): Variable Length 32-131bytes

Format title: Real-time Market Information on Continuous Trading for TPEx Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“06”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“04”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		19-118			
3.1	Stock Code	X (06)	6	11-16	ASCII	
3.2	Matching Time	9(12)	6	17-22	PACK BCD	
3.3	Disclosed Item Remarks	X(01)	1	23-23	BIT MAP	
3.4	Rise/Fall Remarks	X(01)	1	24-24	BIT MAP	
3.5	Status Remarks	X(01)	1	25-25	BIT MAP	
3.6	Accumulative Trading Volume	9(08)	4	26-29	PACK BCD	
3.7	Real-time Quotes		0-99	30-??		OCCURS
3.7.1	Price Field	9(05)V9(4)	5	??-??	PACK BCD	0-11 TIMES
3.7.2	Volume Field (Sheet)	9(08)	4	??-??	PACK BCD	
4	Checksum	X(01)	1	??-??	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	??-??	HEXACODE: 0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 6 in PACK BCD “06” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expressed in PACK BCD “04” for version 4 (length is 1 BYTE).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
3. BODY: Variable length from 19 to 118 bytes.
  - 3.1 Stock Code
    - (1) Expressed in ASCII 6 BYTE. If the Stock Code “000000” matched at time “999999999999”, it means the data on the last entry of auction transaction of Main Board stocks are being transmitted.
  - 3.2 Matching Time

Taipei Exchange



- (1) Expressed in PACK BCD in the format hour: minute: second: millisecond: microsecond (HH:MM:SS:MS:μS).
- (2) In case of a held match (justifiable with bit 1-0 in Rise/Fall Remarks); the match held start time is displayed in the Matching Time field.
- (3) If the Stock Code “000000” matched at time “999999999999”, it means the data on the last entry of auction transaction of Main Board stocks has been transmitted.

### 3.3 Disclosed Item Remarks

- (1) Displayed items are expressed by bit (binary):

Bit 7 (trading price/volume)

0: No trading price/volume, no data transmitted.

1: With trading price/volume, and data transmitted.

Bit 6-4 (purchasing price/volume)

000: No purchasing price/volume, no data transmitted.

001-101: Display the position of stocks by purchasing price/volume (the top five positions are displayed in binary codes).

Bit 3-1 (selling price/volume)

000: No selling price/volume, no data transmitted.

001-101: Display the position of stocks by selling price/volume (the top five positions are displayed in binary codes).

Bit 0 (Price and Volume of the best five stock transactions)

0: Display the trading price and volume and the price and volume of the best five stock transactions.

1: Only display the trading price and volume, the price and volume of the best five stock transactions are not displayed.

Description:

After the consignment trading is matched for each transaction, it may have several trading price and volume displayed. When display the final trading price and volume, the price and volume of the best five stock transactions are also disclosed, Bit 0 = 0. When it is not the final trading price and volume displayed, then only display the trading price and volume but the price and volume of the best five stock transactions are not displayed, Bit 0 = 1.

- (2) The data length of every price and volume field is 5 and 4 bytes respectively.

### 3.4 Rise/Fall Remarks

- (1) Rise/fall remarks, held match instantaneous price trends, and delayed remarks on market at close are expressed by bit (default: 0 x 00)

Bit 7-6: Trading rise/fall remarks 00:

General trading

01: Fall stop trading 10:

Rise stop trading

Bit 5-4: Optimal position purchase rise/fall remarks 00:

General purchase

01: Fall stop purchase 10:

Rise stop purchase

Bit 3-2: Optimal position sale rise/fall remarks 00:

General sale

01: Fall stop sale 10:

Rise stop sale

Bit 1-0: Instantaneous Price Trend 00:

General display

01: Held match and instantaneous fall trend 10:

Held match and instantaneous rise trend 11:

[Reserved]

(2) Purchase (Sales) rise/fall remarks display only the purchase (selling) price of the stock at the optimal position.

### 3.5 Status Remarks

(1) Trial status remarks, delayed open remarks after trial, delayed close remarks after trial and way of matching remarks, open remarks and close remarks are expressed by individual bit (default 0X00).

Bit 7 Trial status remarks 0:

General display

1: Trial display

Bit 6 Delayed open remarks after trial 0:

Negative

1: Positive

Bit 5 Delayed close remarks after trial 0:

Negative

1: Positive

Bit 4 Way of matching remarks 0:

Aggregate auction

1: Continuous market method

Bit 3 Open remarks 0:

Negative

1: Positive

Bit 2 Close remarks 0:

Negative

1: Positive

Bit 1-0 Reserved

- (2) If Bit 7=1, it means at the moment real-time quote which is in the field of 3.7 is in the Trial Status. If Bit 7=0, it means real-time quote is in the General Display Status, and in the meantime Bit 5 and 6 remarks are of meaninglessness.
- (3) If Bit 3=1, represents current open display data; if Bit 2=1, represents current close display data.

3.6 Accumulative Trading Volume: transmitting the latest accumulative trading volume of individual stock by the unit of trading.

### 3.7 Real-time Quotes

Transmit the latest real-time quote information of stocks by trading price/volume, top five positions by purchasing price/volume, and top five positions by selling price/volume. Every trading, purchasing and selling volume represents one trading unit.

- (1) The length of data expressed in PACK BCD in every price and volume field is 5 and 4 bytes respectively
- (2) If Bit 7 of the Disclosed Item Remarks field is 1, this means there are trading price/volume data.
  - i. If Instantaneous Price Trend of Rise/Fall remark is General Display i.e. Bit 1-0 = 00, the item displays the current price and volume.
  - ii. If Instantaneous Price Trend of Rise/Fall remark is Held Match i.e. Bit 1-0 = 01 or 10, the item will display the latest price and volume which expressed by 0; neither the purchasing nor the selling price/volume is displayed.
- (3) i. If Bit 6-4 of the Disclosed Item Remarks field is 001-101, this means there are purchasing price/volume data, and the data at the top five positions and their purchasing price/volume (sheet or unit) are transmitted in binary codes in ascending order.
  - ii. If the “price field” of purchasing the best position shows 0, it means purchasing at market price; the “volume field” is the market purchasing volume.
  - iii. The best purchasing price/volume is shown in ascending order based on the purchasing price. Market purchasing price/volume, if any, is listed at the top first position.
  - iv. For government bonds, only data of the consigned purchasing price/volume (unit) of one bond is displayed; i.e. Disclosed Item Remarks Bit 6-4=001.
- (4) i. If Bit 3-1 of the Disclosed Item Remarks field is 001-101, this means there are selling price/volume data, and the data at the top five positions and their selling price/volume (sheet or unit) are transmitted in binary codes in ascending order.
  - ii. If the “price field” of selling the best position shows 0, it means sold at market price; the “volume field” is the market selling volume.
  - iii. The best-selling price/volume is shown in ascending order based on the selling price. Market selling price/volume, if any, is listed at the top first position.
- (5) For a trial match i.e. Status Remark Bit 7 = 1, the Real-time Quotes data is at the trial stage.

4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.

5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 7

Page: \_1\_

Length (RL): Fixed length 37 bytes

Format title: Statistics Information on Fixed-price Trading for (TPEx) Main Board Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0037”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“07”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“01”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		24	11-34		
3.1	Statistics Time	9(06)	3	11-13	PACK BCD	
3.2	Total Trading Amount	9(15)	8	14-21	PACK BCD	
3.3	Trading Volume	9(15)	8	22-29	PACK BCD	
3.4	Trading Records	9(10)	5	30-34	PACK BCD	
4	Checksum	X(01)	1	35-35	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	36-37	(HEXACODE: 0D 0A)	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 7 in PACK BCD “07” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. “01” for Version 1 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
3. BODY: Totally 24 bytes.
  - 3.1 Statistics Time
    - (1) Expressed in PACK BCD (length: 3 bytes) to record time in hour, minute, second format (HHMMSS).
    - (2) After the after-hour fixed-price system finishes matching transactions, statistics of the accumulative total trading amount, trading volume and trading records of after-hour fixed-price transactions (except the statistics of the accumulative total trading amount, trading volume and trading records of auctions before closing) will be transmitted once. The value displayed in the Statistics Time field at this moment is the system processing time. After sending the accumulative trading statistics of after-hour Fixed-price Transactions

for the first time, the TPEx will continue to send the statistics of the accumulative total trading amount, trading volume and trading records of after-hour Fixed-price Transactions at about every minute. At this moment, the value displayed in the Statistics Time field is “999999”, and Transmission S/N remains unchanged.

- 3.2 Total Trading Amount: Expressed in PACK BCD (length 8 bytes) to record the accumulative total trading amount of Fixed-price Transactions.
  - 3.3 Trading Volume: Expressed in PACK BCD (length 8 bytes) to record the accumulative total trading volume; every volume represents one trading unit.
  - 3.4 Trading Records: Expressed in PACK BCD (length 5 bytes) to record the accumulative total trading records of Fixed-price Transactions
- 4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
  - 5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 8

Page: \_1\_

Length (RL): Fixed length 32 bytes

Format title: Trading Order Statistics Information on Fixed-price Trading for (TPEX) Main Board Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0032”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“08”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“01”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		19	11-29		
3.1	Consignment Accumulated Time	9(06)	3	11-13	PACK BCD	
3.2	Consigned Purchase Records	9(08)	4	14-17	PACK BCD	
3.3	Consigned Sales Records	9(08)	4	18-21	PACK BCD	
3.4	Consigned Purchase Volume	9(08)	4	22-25	PACK BCD	
3.5	Consigned Sales Volume	9(08)	4	26-29	PACK BCD	
4	Checksum	X(01)	1	30-30	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	31-32	HEXACODE: 0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 8 in PACK BCD “08” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. “01” for Version 1 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
    - (3) Statistics are transmitted once every 30 seconds; and the same statistics time uses the same S/N.
3. BODY: Totally 19 bytes.
  - 3.1 Consignment Accumulated Time
    - (1) Expressed in PACK BCD (length 3 bytes) to record time in hour, minute, second format (HHMMSS).
    - (2) The value displayed in this field is the system time of statistics produced on the fixed-price transaction consignments of Main Board stocks on the market. At present, statistics are produced once a minute. If the value in the Statistics Time is “999999”, this means they are the

last statistics and will be transmitted repeatedly for about 15 minutes.

3.2-3.5: Consignment Volume: Expressed in PACK BCD (length: 4 bytes) to express the accumulative total consigned purchase and sales volume; each volume represents one trading unit.

4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.

5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 9

Page: \_1\_

Length (RL): Fixed Length 31bytes

Format title: Information on Fixed-price Trading of Single Stocks for (TPEX) Main Board Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0031”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“09”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“03”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		18			
3.1	Stock Code	X (06)	6	11- 16	ASCII	
3.2	Matching Time	9(06)	3	17-19	PACK BCD	
3.3	Trading Price	9(5)V9(4)	5	20-24	PACK BCD	
3.4	Trading Volume (sheet)	9(08)	4	25-28	PACK BCD	
4	Checksum	X(01)	1	29-29	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	30-31	HEXACODE: 0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 9 in PACK BCD “09” (length: 1 byte).
  - 2.4 Transmission Format Version:
    - (1) Version 3 is represented by PACK BCD “03” (length: 1 BYTE).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
    - (3) After the after-hour fixed-price system finishes matching transactions, data of the trading price and volume of all stocks (except the accumulative trading volume of auctions). After transmitting such data of every stock for one cycle, data of the trading price and accumulative trading volume of every stock are transmitted repeatedly every minute. The Transmission S/N of each cycle begins from 1.
3. BODY: Totally 16 bytes.
  - 3.1 Stock -Code
    - (1) TASCII 6 BYTE.
    - (2) After the after-hour fixed-price system finishes matching transactions, data of the trading price and volume of every stock will be transmitted repeatedly. In the last entry on record of each cyclical sequence, the Stock Code is expressed in “000000” and the Matching Time in “999999”.



### 3.2 Matching Time

(1) Expressed in PACK BCD to display matching time in hour, minute, second (HH:MM:SS) format.

(2) After the after-hour fixed-price system finishes matching transactions, data of the trading price and volume of every stock will be transmitted repeatedly. In the last entry on record of each cyclical sequence, the Stock code is expressed in “000000” and the Matching Time in “999999”.

3.3 Trading Price (length: 5 bytes): Expressed in PACK BCD to record the trading price of every stock in fixed-price transactions.

3.4 Trading Volume: Expressed in PACK BCD (length 4 bytes) to record the accumulative total trading volume of individual stocks; every volume represents one trading unit.

4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.

5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 10

Page: \_1\_

Length (RL): Fixed Length 35 bytes

Format title: Trading Order Statistics Information on Fixed-price Trading of Single Stocks for (TPEX) Main Board Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0035”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“10”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“03”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		22			
3.1	Stock Code	X(06)	6	11-16	ASCII	
3.2	Statistics Time	9(06)	3	17-19	PACK BCD	
3.3	Transaction Price	9(5)V9(4)	3	20-24	PACK BCD	
3.4	Purchase Volume	9(08)	4	25-28	PACK BCD	
3.5	Sales Volume	9(08)	4	29-32		
4	Checksum	X(01)	1	33-33	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	34-35	HEXACODE:0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 10 in PACK BCD “10” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. “03” for Version 3 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every cycles.
    - (3) Statistics data are transmitted once every cycles, and the same statistics time has the same serial number.
3. BODY
  - 3.1 Stock -Code
    - (1) TASCII 6 BYTE.
    - (2) After the after-hour fixed-price system finishes matching transactions, data of the trading price and volume of every stock will be transmitted repeatedly. In the last entry on record of each cyclical sequence, the Stock Code is expressed in “000000” and the Matching Time in “999999”.
  - 3.2 Statistics Time

- (1) Expressed in PACK BCD (length: 3 bytes) to record time in hour, minute, second format (HHMMSS). Statistics occurs in every minute.
  - (2) In the last entry on record of each cyclical sequence, the Stock Code is expressed in "000000" and the Matching Time in "999999".
  - (3) After fixed-price order time ends, order details for single stocks will be repeatedly transmitted using completion time of "999999".
- 3.3 Transaction Price: Expressed in PACK BCD (length: 5 bytes) to record the closing price of Continuous trading for individual stocks.
- 3.4 Purchasing volume: Expressed in PACK BCD (length: 4 bytes) to record the accumulative purchasing volume of fixed-price for individual stocks.
- 3.5 Selling Volume: Expressed in PACK BCD (length: 4 bytes) to record the accumulative selling volume of fixed-price for individual stocks.
4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 11

Page: \_1\_

Length (RL): Fixed length 374 bytes

Format title: Information on Continuous Trading of the Opening and Closing Price for TPEX Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0374”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“11”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“03”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		361	11-371		
3.1	Stock Entries	9(02)	1	11-11	PACK BCD	
3.2	Data Content	X(25)	360			OCCURS 10 TIMES
3.21	Stock Code	X(06)	6	?-?	ASCII	
3.22	Opening Price	9(5)V9(4)	5	?-?	PACK BCD	
3.23	Highest Trading Price	9(5)V9(4)	5	?-?	PACK BCD	
3.24	Lowest Trading Price	9(5)V9(4)	5	?-?	PACK BCD	
3.25	Recent trading price	9(5)V9(4)	5	?-?	PACK BCD	
3.26	Accumulative Trading Volume	9(8)	4	?-?	PACK BCD	
3.27	Time	9(12)	6	?-?	PACK BCD	
4	Checksum	X(01)	1	372-372	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	373-374	HEXACODE:0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 12 in PACK BCD “12” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. “03” for Version 3 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
    - (3) Opening (Closing) price data are transmitted at every 10 minutes during the transactions.  
Opening (Closing) price data are transmitted at every 5 minutes after the market is closed.
3. BODY: (Length = 361 bytes)
  - 3.1 Stock Entries
    - (1) Expressed in PACK BCD; length 1 byte.
    - (2) Information includes data content and stock entries (including the entry of Stock Code = “000000” in the end of every cycle).
    - (3) When there are less than 10 entries, the stock code in the Data Content field is expressed in

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spaces; while others are in low-value.

3.2 Data Content: length 360 bytes (36 bytes \* 10 times)

3.2.1 Stock Code

(1) Length: 6 bytes.

(2) When the value of Stock Code is "000000", this means the cycle ends. At this moment, the value displayed in the Trading Price, Trading Volume and Trading Time fields is "0".

3.2.2 Opening Price

(1) Expressed in PACK BCD, length 3 bytes, to record the auction opening price of Main Board stocks.

(2) Opening Price = 0 means:

a. No opening price has not come out today; or

b. The Stock Code is "000000" when the cycle ends.

3.2.3 Highest Trading Price:

Expressed in PACK BCD, length 5 bytes, to record the highest trading price of the auction of Main Board stocks after the market opens.

3.2.4 Lowest Trading Price:

Expressed in PACK BCD, length 5 bytes, to record the lowest trading price of the auction of Main Board stocks after the market opens.

3.2.5 Recent trading price:

(1) Expressed in PACK BCD, length 5 bytes, to record the recent trading price of the auction of Main Board stocks in the market.

(2) If the closing time is "999999999999" when the market is closed, the closing price of the auction of Main Board stocks is recorded in this field.

3.2.6 Accumulative Trading Volume:

(1) Expressed in PACK BCD, length 4 bytes, to record the accumulative trading volume (sheet) so far of the day.

(2) If the closing time is "999999999999", the total trading volume of stocks is recorded in this field.

3.2.7 Time

(1) Expressed in PACK BCD, length 3 bytes, to record time in the hour: minute: second (HH:MM:SS), 3-digit millisecond (mmm), and 3-digit microsecond(μμμ)format.

(2) The time of the recent trading price is recorded in this field during the market is operating.

(3) The value in this field after the market is closed is always "999999999999"; and the closing price is transmitted until the transmission ends.

4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.

5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 12

Page: \_1\_

Length (RL): Fixed Length 26 bytes

Format title: Information on Newly Compiled TPEX Indices

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0026”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“12”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“02”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		13	11-23		
3.1	Index Code	X(06)	6	11-16	ASCII	
3.2	Index Time	9(06)	3	17-19	PACK BCD	
3.3	Latest Index	9(5)V99	4	20-23	PACK BCD	
4	Checksum	X(01)	1	24-24	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	25-26	HEXACODE:0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 12 in PACK BCD “12” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. “02” for Version 2 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
    - (3) S/N “00000000” represents the previous-day closing index.
3. BODY
  - 3.1 Index Code: Expressed in ASCII 6 BYTE to record data of indices established by FTSE Group and Research Affiliates, LLC, and calculated by the TPEX. New indices established in the future will also be transmitted in this format.
  - 3.2 Index Time
    - (1) Expressed in PACK BCD, length 3 bytes to record time in the hour, minute, second (HH:MM:SS) format.
    - (2) The value displayed in this field is the system time of index data received by the FTSE Group calculated at every 5 seconds.
    - (3) When the value of the Index Time and Transmission S/N is “0”, this means such index data are the closing index data of the previous day.

(4) When the Index Time is “999999”, this means data are the closing indices of today. Closing index data are transmitted at every 5 seconds over a period of about 15 minutes.

3.3 Latest Index: Expressed and transmitted in PACK BCD, length: 4 bytes.

4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.

5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 13

Page: \_1\_

Length (RL): Fixed length 44 bytes

Format title: Information on Real-time Trading of After-Hour Odd-Lots

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0044”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“13”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“03”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY			11-41		
3.1	Stock Code	X (06)	6	11- 16	ASCII	
3.2	Matching Time	9(06)	3	17-19	PACK BCD	
3.3	Rise/Fall Remarks	X(01)	1	20-20	BIT MAP	
3.4	Trading Price	9(5)V9(4)	5	21-25	PACK BCD	
3.5	Trading Volume	9(12)	6	26-31	PACK BCD	
3.6	Purchasing Price	9(5)V9(4)	5	32-36	PACK BCD	
3.7	Selling Price	9(5)V9(4)	5	37-41	PACK BCD	
4	Checksum	X(01)	1	42-42	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	43-44	HEXACODE:0D 0A	

### Description

- A. Trial and Official Matching: Information transmitted in Format 13 includes the trial marching and official match trading information. Securities companies should justify the nature of information from the Matching Time field. If it is trial matching information, only data of the purchasing and selling prices at the best position are disclosed, and there is no trading price/volume. If it is official match trading information, data of the purchasing and selling prices and trading price/volume at the best position are disclosed.
- B. End of Trading Information: After all information concerning match trading is transmitted, data displayed in the Stock Order Number is “0000” and Matching Time is “999999”
- C. Repeated Transmission: After the end of transmission of the match trading information of tradable odd lots of the day, information of odd lot transactions will be re-transmitted repeatedly. Please be noted that the trial matching information is transmitted on a real-time basis and will not be re-transmitted.
- D. Field Description
  1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
  2. HEADER: Information header field. The same header field is applied to all transmission formats.
    - 2.1 Information Length
      - (1) Expressed in PACK BCD (length: 2 bytes).
      - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
    - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
    - 2.3 Transmission Format Code: Expresses Format 13 in PACK BCD “13” (length: 1 byte).
    - 2.4 Transmission Format Version
      - (1) Expresses version in PACK BCD, e.g. “03” for Version 3 (length: 1 byte).



(2) Versions are numbered from 1, and every format has individual version numbers.

2.5 Transmission S/N

(1) Expressed in PACK BCD (length: 4 bytes).

(2) Begins from 1 serially every day, and every format is numbered individually.

(3) Please refer to attachments for details.

3. BODY: (Length = 21 bytes)

3.1 Stock Code

(1) In ASCII 6 Bytes.

(2) When the Stock Code is “000000” and Matching Time is “999999”, this means that all match trading information of odd lot transactions for the current day have been transmitted.

3.2 Matching Time

(1) Expressed in PACK BCD in the hour, minute, second (HH:MM:SS) format.

(2) Implications

a Value<143000: Trail Matching Data

b Value=143000: Official match trading

c Value=999999 and Stock Code = “000000”: all match trading information of odd lot transactions for the current day have been transmitted.

3.3 Rise/Fall Remarks:

Rise/fall remarks of Trading Price (3.4), Purchasing Price (3.6) and Selling Price are expressed in individual bits (3.7)

Bit 7-6 Trading

00: General trading or no trading

01: Fall stop trading

10: Rise stop trading

Bit 5-4 Purchase

00: General purchasing price/volume or no purchasing price/volume

01: Fall stop purchase

10: Rise stop purchase

Bit 3-2 Selling

00: General selling price/volume or no selling g price/volume

01: Fall stop sale

10: Rise stop sale Bit

Bit 1-0 Reserved

3.4 Trading Price: 5 integers and 4 decimals, totally 5 bytes after compression.

(1) Matching Time <143000: No trail trading price, trading price and trading volume is displayed, and the value “0” is transmitted.

(2) Matching Time=143000: real-time transmission of trading price and volume; if none, the value “0” is transmitted.

3.5 Trading Volume: 12 integers, totally 6 bytes are compression expressed in “shares”. Other description is the same as (1) and (2) in 3.4.

- 3.6 Purchasing Price: 5 integers and 4 decimals, totally 5 bytes after compression. This field displays the purchasing price at the best position of after trial and official matching before trading; if none, the value “0” is transmitted.
- 3.7 Selling Price: 5 integers and 4 decimals, totally 5 bytes after compression. This field displays the selling price at the best position of after trial and official matching before trading; if none, the value “0” is transmitted.
- 4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
- 5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

Attachment: Description of Transmission S/N in Format 13

- (1) Supposing that there are 484 types of tradable odd lots whose trial matching is displayed at 14:25:00. A total of 2640 entries are produced during the matching. The official match trading is executed at 14:30:00, and the trading data are displayed repeatedly at every 30 seconds until 14:50.
- (2) Data in Format 13 begin to produce at 14:25:00, and the Transmission S/N starts from 00000001. Until 14:29:59, the Transmission S/N of the last entry is 00002640.
- (3) The official match trading begins at 14:30:00. After all match trading is completed, the trading data of odd lots of individual stocks (Transmission S/N00002641-00003124) are displayed until the end of trading message is transmitted (Transmission S/N 00003124).
- (4) Data of Transmission S/N 00002641-00003124 are transmitted repeatedly every 30 seconds until 14:50.

	ESC-CODE	HEADER		BODY			CHECK	TERMINAL
	1	2.1-2.4	2.5	3.1	3.2	3.3-3.7	4	5
Trial Matching Data			00000001		142500			
			00000002		142500			
			00000003		142501			
			00000004		142501			
			00000005		142501			
			.		.			
			.		.			
			.		.			
			.		.			
			00002632		142958			
			00002633		142958			
			00002634		142958			
			00002635		142959			
			00002636		142959			
			00002637		142959			
Matching Trading Data			00002638		142959			
			00002639		142959			
			00002640		142959			
			00002641		143000			
			00002642		143000			
			00002643		143000			
			00002644		143000			
			00002645		143000			
			.					
			.					
			.					
			.					
			00003119		143000			
			00003120		143000			
			00003121		143000			
			00003122		143000			
			00003123		143000			
			00003124	000000	999999			

Repeated Transmission

Trial Matching Data

Matching Trading Data

End of Transmission

# Taipei Exchange Data Transmission Format

## Format Code: Format 14

Page: \_1\_

Length (RL): Fixed length 69 bytes

Format title: Full Information of Call (Put) Contracts on (TPEX) Main Board

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0069”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“14”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“02”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		56	11-66		
3.1	Callable Bull(Bear) Contract Code	X(06)	6	11-16	ASCII	
3.2	Full Name of Callable Bull(Bear) Contract	X(50)	50	17-66		
4	Checksum	X(01)	1	67-67	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	68-69	HEXACODE: 0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 14 in PACK BCD “14” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. “02” for Version 2 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
3. BODY: Totally 56 bytes to record the data of Callable Bull (Bear) Contracts.
  - 3.1 Callable Bull (Bear) Contract Code: Expressed in ASCII code (6 bytes).
  - 3.2 Full Name of Callable Bull (Bear) Contract: Totally 50 bytes to display the full name of Callable Bull (Bear) Contracts. The Full Name of Callable Bull (Bear) Contract field consists of the following subfields.

A. Warrant (CBBC) Abbreviation	Separation character	B. Warrant Target	C. Maturity Date	D. Warrant Form	E. Warrant Variety	F. Warrant Type	G. Reserved Field
SAS Fubon 73 Put 01	—	SAS	20080320	Euro	Put	Down	Blank

SAS Fubon 75 Call 02		—	SAS	20080520	Am	Call	Up	Blank
TPEX Index Fubon 78 Put 03		—	TPEX Index	20080820	Euro	Put		Blank
SAS Fubon 79 Bull 04		—	SAS	20080920	Am	Call	Bull	Blank
SAS Fubon 7B Bear 05		—	SAS	20081120	Euro	Put	Bear	Blank
Length	16	2	16	8	2	2	2	2

### Subfield description (totally 50 bytes)

- A. Warrant (CBBC) Abbreviation: 16 Bytes, contains the Warrant Target, Issuer, Maturity Date, Warrant Type and S/N, the same way as the Stock Name display at present.
  - B. Warrant(CBBC) Target: 16 Bytes, if it is Domestic Target, then represented by the Security Name (16 Bytes, the same way as the Stock Name display at present) or the Index Name (10 Bytes), if it is Foreign Underlying Asset, then display foreign underlying asset Type, including "foreign securities", (including stock and depository receipts", "overseas indexes", and "foreign ETF". (□ is 2 Bytes blank)
  - C. Maturity Date: Western year, month and day (8 numbers).
  - D. Warrant (CBBC) Form: European-Euro and American-Am (1 Chinese character)
  - E. Warrant (CBBC)Variety: Call-Call; Put-Put (1 Chinese character).
  - F. Warrant (CBBC)Type:  
Currently issued warrants (CBBCs): General— ; Up-and-Out Callable Bull Contract—Up; Down-and-Out Callable Bear Contract—Down; Bull (down-and-out warrant within the price)—Bull, Bear (up-and-out warrant within the price)—Bear (1 Chinese character).
  - G. Reserved Field: For new warrant information in future.
4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
  5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 15

Page: \_1\_

Length (RL): Fixed length 20 bytes

Format title: Information on Stop of Trading of the Day for (TPEX) Main Board Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0020”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“15”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“01”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		7	11-17		
3.1	Code of Suspended Stock	X(06)	6	11-16	ASCII	
3.2	Suspension Cause Code	X(01)	1	17-17	ASCII	
4	Checksum	X(01)	1	18-18	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	19-20	HEXACODE: 0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 15 in PACK BCD “15” (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. “01” for Version 1 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Data of suspended stocks on the market during the day are transmitted repeatedly before the market opens in Format 15. Transmission stops after the market opens. All cycles begin from “0”.
    - (3) When the S/N is “000000”, the Stock Code in that record represents the amount of stocks suspended on that day.
3. BODY: Totally 7 bytes to record the data of suspended stocks on the day.
  - 3.1 Stock Code
    - (1) Code of Suspended Stock: Expressed in ASCII code; totally 6 bytes.
    - (2) Stocks stored in the general stock data in the Quote Transmission Format 1 of the previous business day that do not appear today are defined as suspended stocks.
    - (3) When S/N is “000000”, the amount of stocks suspended for today is displayed in the Stock Code, and the Suspension Cause Code is in blank.
  - 3.2 Suspension Cause Code: Expressed in ASCII code, 1 byte. T-

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Listing terminated

S-Transaction suspended

Blank-the amount of stocks suspended on the day is displayed in the Stock Code.

4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 16

Page: \_1\_

Length (RL): Fixed length 17 bytes

Format title: "Heartbeat" Trading Information on (TPEX) Main Board Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	"0017"
2.2	Business Type	9(02)	1	4- 4	PACK BCD	"02"
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	"16"
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	"01"
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		4	11-14		
3.1	System Time	9(06)	3	11-13	PACK BCD	
3.2	System Transmission Status	X(01)	1	14-14	ASCII	
4	Checksum	X(01)	1	15-15	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	16-17	HEXACODE: 0D 0A	

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD "02" (length: 1 byte).
  - 2.3 Transmission Format Code: Expresses Format 16 in PACK BCD "16" (length: 1 byte).
  - 2.4 Transmission Format Version
    - (1) Expresses version in PACK BCD, e.g. "01" for Version 1 (length: 1 byte).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
    - (3) HeartBeat data are transmitted once every 30 minutes, using the same S/N as that of the Statistics Time.
3. BODY: A total of 4 bytes to record the present system time and system status.
  - 3.1 System Time
    - (1) Expressed in PACK BCD, length 3 bytes, to record time in the hour, minute, second (HH:MM:SS) format.
    - (2) The value recorded in this field is the system time of market quote transmission currently at a frequency of once every 30 seconds; starting from 08:00:00 to 17:15:00. The last HeartBeat format entry is transmitted repeatedly.
    - (3) If the System Time is "999999", this means it is the last HeartBeat format entry which is transmitted repeatedly for 5 minutes.
  - 3.2 System Transmission Status

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- (1) Records the present status of quote system transmission expressed in PACK BCD (1 byte).  
 S: Start HeartBeat information transmission  
 L: Normal HeartBeat information transmission  
 R: Restart HeartBeat information transmission  
 T: Terminate HeartBeat information transmission.
  - (2) The status of transmission of the first HeartBeat information after the quote transmission system starts every day is “S”. When the quote network connection is normal, the status of transmission of subsequent HeartBeat information is “L”. At present, HeartBeat information is transmitted once every 30 seconds.
  - (3) When the status of transmission of HeartBeat information is “T”, this means it is the last HeartBeat information which is transmitted repeatedly for 5 minutes. At this moment, the quote transmission stops transmitting data in all other formats, except the last HeartBeat information.
  - (4) When the status of transmission of HeartBeat information is “R”, this means the transmission of HeartBeat information is restarted as a result of data transmission errors. Also, interrupted HeartBeat information as a result of system errors will not be re-transmitted.
  - (5) The HeartBeat information is only a reference for the status of the TPEx quote transmission system. When the transmission is interrupted, this may suggest a connection error but not the system failure of the quote system at the TPEx. The normal transmission of information in other formats is subject to the receiving condition of the information companies.
  - (6) See Attachment for details.
4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
  5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

Attachment: Description of Transmission S/N in Format 16

- (1) Supposed that the transmission of HeartBeat information begins at 08:00:00, at a frequency of once every 30 seconds. The transmission is interrupted at 10:15:3, resumes at 10:20:00 and terminates at 17:20:00. The format of transmission data is shown below.
- (2) The Transmission S/N of the first entry of data transmitted at 08:00:00 begins from “1”. The transmission status of the first entry is “S” and changes to “L” since the second entry; and the Transmission S/N increases according to order of entries.
- (3) The Transmission S/N of the first entry transmitted after system recovery at 10:20:00 continues from the last entry before interruption. The transmission status is “R”. HeartBeat information interrupted as a result of transmission errors is not re-transmitted.
- (4) After 17:15:00, the last HeartBeat information is transmitted repeatedly for about 5 minutes. At this moment, the value displayed in System Time is “999999”, and the transmission status is “T”.

	ESC-CODE	HEADER		BODY		CHECK	TERMINAL
	1	2.1~2.4	2.5	3.1	3.2	4	5
Normal Transmission			00000001	080000	S		
			00000002	080030	L		
			00000003	080100	L		
			00000004	080130	L		
			00000005	080200	L		
			.		.		
			.		.		
			.		.		
			.		.		
			00000269	101400	L		
Transmission After System Restarted			00000270	101430	L		
			00000271	101500	L		
	HeartBeat information transmission interrupted						
			00000272	102000	R		
			00000273	102030	L		
			00000274	102100	L		
			00000275	102130	L		
			.		.		
			.		.		
			.		.		
Last Entry			00001100	171400	L		
			00001101	171430	L		
			00001102	171500	L		
			00001103	999999	T		
			00001103	999999	T		
			.		.		
Transmit Repeatedly			.		.		
			.		.		
			.		.		
			00001103	999999	T		
			00001103	999999	T		

# Taipei Exchange Data Transmission Format

## Format Code: Format 17

Page: \_1\_

Length (RL): Variable Length 32-131 bytes

Format title: Real-time Market Information on Continuous Trading for (TPEX) Main Board Call (Put) Warrants

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“17”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“04”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		19-118			
3.1	Stock Code	X(06)	6	11- 16	ASCII	
3.2	Matching time	9(12)	6	17-22	PACK BCD	
3.3	Note on Disclosure item	X(01)	1	23-23	BIT MAP	
3.4	Rise/Fall Remark	X(01)	1	24-24	BIT MAP	
3.5	Status Remarks	X(01)	1	25-25	BIT MAP	
3.6	Accumulated Trading Volume	9(08)	4	26-29	PPACK BCD	
3.7	Real-time quotes		0-99	30-??		Occurs 0-11 Times
3.7.1	Price Field	9(5)V(4)	5	??-??	PACK BCD	
3.7.2	Volume Field	9(08)	4	??-??	PACK BCD	
4	Checksum	X(01)	1	??-??	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	??-??	HEXACODE: 0D 0A	

Notes: The format of this data is transmitted via the 2nd IP.

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission format code; use PACK BCD “17” (length: 1 byte)
  - 2.4 Transmission Format Version
    - (1) Version 4 is represented by PACK BCD “04” (length: 1 BYTE).
    - (2) Versions are numbered from 1, and every format has individual version numbers.
  - 2.5 Transmission S/N
    - (1) Expressed in PACK BCD (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
3. BODY: Variable length from 19-118 bytes.
  - 3.1 Stock Code
    - (1) In ASCII 6 Bytes. When the Stock Code is “000000” and the Matching Time is “999999999999”, this means the last entry of real-time data of the auction of Main Board stocks are being transmitted.
  - 3.2 Matching Time

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- (1) Expressed in PACK BCD in the format hour, minute, second,3-digit milisecond,3-digit microsecond (HH:MM:SS:mmm:μμμ).
- (2) In case of a held match (justifiable with bit 1-0 in Rise/Fall Remarks); the match held start time is displayed in the Matching Time field.
- (3) When the Stock Code is “000000” and the Matching Time is “999999999999”, this means the last real-time quote data of the auction of Main Board stocks are being transmitted.

### 3.3 Disclosed Item Remarks

- (1) Displayed items are expressed by bit (binary):

Bit 7 (trading price/volume)

0: No trading price/volume, no data transmitted.

1: With trading price/volume, and data transmitted.

Bit 6-4 (purchasing price/volume)

000: No purchasing price/volume, no data transmitted.

001-101: Display the position of stocks by purchasing price/volume (the top five positions are displayed in binary codes).

Bit 3-1 (selling price/volume)

000: No selling price/volume, no data transmitted.

001-101: Display the position of stocks by selling price/volume (the top five positions are displayed in binary codes).

Bit 0 (the price/quantity of the top five stocks)

0: disclosure of the transaction prices of the top 5 stocks.

1: disclosure of the transaction prices but not the top 5 stocks.

#### Notes:

Individual match for transaction may result in the disclosure of individual stock transaction price/quantity. When the price/quantity of the last transaction is disclosed, the price/quantity for the transactions of the top 5 stocks will also be disclosed, Bit 0 = 0. If there is no disclosure of the price/quantity of the last transaction, only the price/quantity in the transaction will be disclosed, but not the price/quantity of the top 5 stocks, Bit 0 = 1.

- (2) The data length of every price and volume field is 5 and 4 bytes respectively.

### 3.4 Rise/Fall Remarks

- (1) Rise/fall remarks, held match instantaneous price trends, and remarks on delayed close of the market are expressed by bit (default: 0X00)

Bit 7-6: Trading rise/fall remarks

00: General trading

01: Fall stop trading

10: Rise stop trading

Bit 5-4: Optimal position purchase rise/fall remarks

00: General purchase

01: Fall stop purchase

10: Rise stop purchase

Bit 3-2: Optimal position sale rise/fall remarks

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00: General sale  
01: Fall stop sale  
10: Rise stop sale

Bit 1-0: Instantaneous Price Trend

00: General display  
01: Held match and instantaneous fall trend 10:  
Held match and instantaneous rise trend 11:  
Reserved

(2) Purchase (Sales) rise/fall remarks display only the purchase (selling) price of the stock at the optimal position.

### 3.5 Status Remarks

(1) Trial status remarks, delayed open remarks after trial, delayed close remarks after trial and way of matching remarks, open remarks and close remarks are expressed by individual bit (default 0X00).

Bit 7 Trial status remarks

0: General display  
1: Trial display

Bit 6 Delayed open remarks after trial

0: Negative  
1: Positive

Bit 5 Delayed close remarks after trial

0: Negative  
1: Positive

Bit 4 Way of matching remarks

0: Aggregate auction  
1: Continuous market method

Bit 3 Open remarks

0: Negative  
1: Positive

Bit 2 Close remarks

0: Negative  
1: Positive

Bit 1-0 Reserved

- (2) If Bit 7=1, it means at the moment real-time quote which is in the field of 3.7 is in the Trial Status. If Bit 7=0, it means real-time quote is in the General Display Status, and in the meantime Bit 5 and 6 remarks are of meaninglessness.
- (3) If Bit 3=1, represents current open display data; if Bit 2=1, represents current close display data.

3.6 Accumulative Trading Volume: transmitting the latest accumulative trading volume of individual stock by the unit of trading.

### 3.7 Real-time Quotes

Transmit the latest real-time quote information of stocks by trading price/volume, top five positions by purchasing price/volume, and top five positions by selling price/volume. Every trading, purchasing and selling volume represents one trading unit.

- (1) The length of data expressed in PACK BCD in every price and volume field is 5 and 4 bytes respectively
- (2) If Bit 7 of the Disclosed Item Remarks field is 1, this means there are trading price/volume data.
  - i. If Instantaneous Price Trend of Rise/Fall remark is General Display i.e. Bit 1-0 = 00, the item displays the current price and volume.
  - ii. If Instantaneous Price Trend of Rise/Fall remark is Held Match i.e. Bit 1-0 = 01 or 10, the item will display the latest price and volume which expressed by 0; neither the purchasing nor the selling price/volume is displayed.
- (3)
  - i. If Bit 6-4 of the Disclosed Item Remarks field is 001-101, this means there are purchasing price/volume data, and the data at the top five positions and their purchasing price/volume (sheet or unit) are transmitted in binary codes in ascending order.
  - ii. If the “price filed” of purchasing the best position shows 0, it means purchasing at market price; the “volume field” is the market purchasing volume.
  - iii. The best purchasing price/volume is shown in ascending order based on the purchasing price. Market purchasing price/volume, if any, is listed at the top first position.
- (4)
  - i. If Bit 3-1 of the Disclosed Item Remarks field is 001-101, this means there are selling price/volume data, and the data at the top five positions and their selling price/volume (sheet or unit) are transmitted in binary codes in ascending order.
  - ii. If the “price filed” of selling the best position shows 0, it means sold at market price; the “volume field” is the market selling volume.
  - iii. The best selling price/volume is shown in ascending order based on the selling price. Market selling price/volume, if any, is listed at the top first position.
- (5) For a trial match i.e. Status Remark Bit 7 = 1, the Real-time Quotes data is at the trial stage.

4 Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.

5 TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

## Taipei Exchange Data Transmission Format

### Format Code: Format 18

Page: \_1\_

Length (RL): Fixed length 374 bytes

Format title: Information on Continuous Trading of the Opening and Closing of the Market for (TPEx)  
Main Board Call (Put) Warrants

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0374”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“18”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“03”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		361	11-371		
3.1	Stock Entries	9(02)	1	11-11	PACK BCD	
3.2	Data Content		360			OCCURS 10 TIMES
3.21	Stock Code	X(06)	6	?-?	ASCII	
3.22	Opening Price	9(5)V9(4)	5	?-?	PACK BCD	
3.23	Highest Trading Price	9(5)V9(4)	5	?-?	PACK BCD	
3.24	Lowest Trading Price	9(5)V9(4)	5	?-?	PACK BCD	
3.25	Recent trading price	9(5)V9(4)	5	?-?	PACK BCD	
3.26	Accumulative Trading Volume	9(8)	4	?-?	PACK BCD	
3.27	Time	9(12)	6	?-?	PACK BCD	
4	Checksum	X(01)	1	372-372	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	373-374	HEXACODE:0D 0A	

Note: This data format will be transmitted via the 2nd IP. A number of price/quantity data will be generated as a result of several counts of transactions at the same time. The real time express news of the “latest bid price” and “accumulated trading volume” transmitted via format 18 is not necessarily the final price/quantity of that point in time.

For example, if a particular stock has an offer and quantity in the X file of the order record book, and at this point in time comes a broad lot order for purchase and the bid price can satisfy the offer of the seller, the match will instantaneously generate X transaction price/quantity and is the identical transaction price at the nearest point in time. The information on the most recent transaction price/quantity pop out in this format is in real time and can be one of the transactions from the 1st to the Xth transaction price/quantity at that specific point in time.

### Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.
  - 2.2 Business Type: Expresses Main Board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission format code; use PACK BCD “18” for Format 18 (length: 1 byte)

## 2.4 Transmission Format Version

- (1) Expresses version in PACK BCD, e.g. “03” for Version 3 (length: 1 byte).
- (2) Versions are numbered from 1, and every format has individual version numbers.

## 2.5 Transmission S/N

- (1) Expressed in PACK BCD (length: 4 bytes).
- (2) Begins from 1 serially every day, and every format is numbered individually.
- (3) Opening (Closing) price data are transmitted at every 10 minutes during the transactions.  
Opening (Closing) price data are transmitted at every 5 minutes after the market is closed.

## 3. BODY: (Length = 361 bytes)

### 3.1 Stock Entries

- (1) Expressed in PACK BCD; length 1 byte.
- (2) Information includes data content and stock entries (including the entry of Stock Code = “000000” in the end of every cycle).
- (3) When there are less than 10 entries, the stock code in the Data Content field is expressed in spaces; while others are in low-value.

### 3.2 Data Content: length 360 bytes (36 bytes \* 10 times)

#### 3.2.1 Stock Code

- (1) Length: 6 bytes.
- (2) When the value of Stock Code is “000000”, this means the cycle ends. At this moment, the value displayed in the Trading Price, Trading Volume and Trading Time fields is “0”.

#### 3.2.2 Opening Price

- (1) Expressed in PACK BCD, length 5 bytes, to record the auction opening price of Main Board stocks.
- (2) Opening Price = 0 means:
  - a. No opening price has not come out today; or
  - b. The Stock Code is “000000” when the cycle ends.

#### 3.2.3 Highest Trading Price:

- (1) Expressed in PACK BCD, length 5 bytes, to record the highest trading price of the auction of Main Board stocks after the market opens.

#### 3.2.4 Lowest Trading Price:

- (1) Expressed in PACK BCD, length 5 bytes, to record the lowest trading price of the auction of Main Board stocks after the market opens.

#### 3.2.5 Recent trading price:

- (1) Expressed in PACK BCD, length 5 bytes, to record the recent trading price of the auction of Main Board stocks in the market.
- (2) If the closing time is “999999999999” when the market is closed, the closing price of the auction of Main Board stocks is recorded in this field.

#### 3.2.6 Accumulative Trading Volume:

- (1) Expressed in PACK BCD, length 4 bytes, to record the accumulative trading volume (sheet) so far of the day.
- (2) If the closing time is “999999999999”, the total trading volume of stocks is recorded in this field.

#### 3.2.7 Time

- (1) Expressed in PACK BCD, length 6 bytes, to record time in the hour, minute, second, millisecond, microsecond (HH: MM: SS: mmm: μμμ) format.
- (2) The time of the recent trading price is recorded in this field during the market is operating.



- (3) The value in this field after the market is closed is always “999999999999”; and the closing price is transmitted until the transmission ends.
- 4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.
- 5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

## Format Code: Format 19

Page: \_1\_

Length (RL): Fixed length 26 bytes

Format Title: Information on Suspension/Resumption of Trading of the Day for (TPEX) Main Board Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X (01)	1	1-1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9 (04)	2	2-3	PACK BCD	“0026”
2.2	Business Type	9 (02)	1	4-4	PACK BCD	“02”
2.3	Transmission Format Code	9 (02)	1	5-5	PACK BCD	“19”
2.4	Transmission Format Version	9 (02)	1	6-6	PACK BCD	“01”
2.5	Transmission S/N	9 (08)	4	7-10	PACK BCD	
3	BODY		13	11-23		
3.1	Stock Code	X (06)	6	11-16	ASCII	
3.2	Time of the day suspended for trading	9 (06)	3	17-19	PACK BCD	
3.3	Time of the day resumed for trading	9 (06)	3	20-22	PACK BCD	
3.4	Transmission status	X (01)	1	23-23	ASCII	
4	Checksum	X (01)	1	24-24	XOR value	
5	TERMINAL – CODE	X (02)	2	25-26	HEXACODE: 0D 0A	

### Field Description:

1. ESC-CODE: the fixed value (ASCII 27) of the starting BYTE of each entry record.
2. HEADER: The Header field of the information. The same HEADER field applied each transmission format.
  - 2.1 Information length:
    - (1) Represented by PACK BCD (length: 2 BYTE).
    - (2) The entire length of the information entry (BYTE), including ESC-CODE, HEADER, BODY, checksum, and TERMINAL-CODE.
  - 2.2 Business type: PACK BCD “02” represents Main Board stock transactions in TPEX (length: 1BYTE).
  - 2.3 Transmission Format Code: PACK BCD “19” represents Format 19 (length: 1 BYTE).
  - 2.4 Transmission Format Version:
    - (1) Version 1 is represented by PACK BCD “01” (length: 1 BYTE).
    - (2) Format version will be arranged in sequential order starting from 1 and the format is independently codified.
  - 2.5 Transmission S/N:
    - (1) PACK BCD represents Transmission Code (length: 4 BYTE).
    - (2) Data on stocks suspended/resumed for trading will be transmitted at regular intervals of the day in cycles. Newly added data will be transmitted instantaneously. Each transmission starts from 1 in sequential order and the format is codified independently.
3. BODY: Total length: 13 bytes
  - 3.1 Stock Code:
    - (1) Represented by ASCII 6 BYTES.
    - (2) The record values of the time of the day for suspended/resumed trading of stocks are represented by “999999”. The Stock Code of particular entry of record

represents the data of the quantity of the stocks suspended/resumed for trading for such transmission and the ending of the transmission.

- (3) When Stock Code is represented by “000000”, it means the full market is being suspended for trading.

### 3.2 Time for suspended trade of the day:

- (1) Represented by PACK BCD with length of 3 BYTES for recording the hour, minute, and second (HHMMSS),
- (2) If there is particular stock being suspended for trading on particular day, the record of value in this field is the time that such stock is being suspended for trading, and the field indicating the time of resumed for trading will display the value of “999999”.
- (3) When Stock Code is represented by “000000”, the record of value in this field is the time that the full market is being suspended for trading.

### 3.3 Time for resumed trading of the day:

- (1) Represented by PACK BCD with length of 3 BYTES for recording the hour, minute, and second (HHMMSS),
- (2) Once the stock being suspended for trading on the day is resumed for trading, the record value shown in this field shall be the time that such stock is resumed for trading.
- (3) When Stock Code is represented by “000000”, the record of value in this field is the time that the full market is being resumed for trading.

### 3.4 Transmission Status:

- (1) Represented by ASCII with length of 1 BYTE. The values for the status of transmission are defined below:
  - C: Cyclical transmission of the data on stocks suspended/resumed for trading of the day.
  - I: Immediate transmission of the data on stocks suspended/resumed for trading of the day.
- (2) Format 19: data on stocks suspended/resumed for trading of the day will be transmitted once every 10 minutes, which will be denoted by status C. Whenever there are newly added data on stocks suspended/resumed for trading of the day, data transmission will take place immediately denoted by status I.

4. Checksum: Calculation of the XOR value from the 2nd to the last BYTE of the BODY.
5. TERMINAL-CODE: the ending BYTE of each entry RECORD with fixed value of (HEXACODE:0D 0A).

# Taipei Exchange Data Transmission Format

**Format code: Format 20**

Page: \_1\_

Length (RL): Variable Length 47-146 bytes

Format Title: Snapshot Information on Continuous Trading for TPEX Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“20”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“01”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		34-133			
3.1	Stock Code	X (06)	6	11-16	ASCII	
3.2	Matching Time	9(12)	6	17-22	PACK BCD	
3.3	Disclosed Item Remarks	X(01)	1	23-23	BIT MAP	
3.4	Rise/Fall Remarks	X(01)	1	24-24	BIT MAP	
3.5	Status Remarks	X(01)	1	25-25	BIT MAP	
3.6	Opening Price	9(05)V9(4)	5	26-30	PACK BCD	
3.7	Highest Trading Price	9(05)V9(4)	5	31-35	PACK BCD	
3.8	Lowest Trading Price	9(05)V9(4)	5	36-40	PACK BCD	
3.9	Accumulative Trading Volume	9(08)	4	41-44	PACK BCD	
3.10	Real-time Quotes		0-99	45-??		OCCURS
3.10.1	Price Field	9(05)V9(4)	5	??-??	PACK BCD	0-11 TIMES
3.10.2	Volume Field (Sheet)	9(08)	4	??-??	PACK BCD	
4	Checksum	X(01)	1	??-??	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	??-??	HEXACODE: 0D 0A	

Note: A number of price/quantity data will be generated as a result of several counts of transactions at the same time. The real time express news of the “latest bid price” and “accumulated trading volume” transmitted via format 20 is not necessarily the final price/quantity of that point in time.

For example, if a particular stock has an offer and quantity in the X file of the order record book, and at this point in time comes a broad lot order for purchase and the bid price can satisfy the offer of the seller, the match will instantaneously generate X transaction price/quantity and is the identical transaction price at the nearest point in time. The information on the most recent transaction price/quantity pop out in this format is in real time and can be one of the transactions from the 1st to the Xth transaction price/quantity at that specific point in time.

## Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.

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- 2.2 Business Type: Expresses main board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
- 2.3 Transmission Format Code: Expresses Format 20 in PACK BCD “20” (length: 1 byte).
- 2.4 Transmission Format Version
  - (1) Expressed in PACK BCD “01” for version 1 (length is 1 BYTE).
  - (2) Versions are numbered from 1, and every format has individual version numbers.
- 2.5 Transmission S/N
  - (1) Expressed in PACK BCD (length: 4 bytes).
  - (2) Begins from 1 serially every day, and every format is numbered individually.
3. BODY: Variable length from 34 to 133 bytes.  
 Market snapshots transmit the latest market data of individual stocks every five seconds. No update transmitted if the market data remain the same.  
 If the market data of individual stocks do not change for too long, the latest market data will be transmitted again within 30 seconds.
  - 3.1 Stock Code
    - (1) Expressed in ASCII 6 BYTE.
    - (2) If the Stock Code “000000” matched at time “999999999999”, it means the data on the last entry of auction transaction of common stocks are being transmitted.
  - 3.2 Matching Time
    - (1) Expressed in PACK BCD in the format hour: minute: second: millisecond: microsecond (HH:MM:SS:MS:μS).
    - (2) In case of a held match (justifiable with bit 1-0 in Rise/Fall Remarks); the match held start time is displayed in the Matching Time field.
    - (3) If the Stock Code “000000” matched at time “999999999999”, it means the data on the last entry of auction transaction of common stocks has been transmitted.
  - 3.3 Disclosed Item Remarks
    - (1) Displayed items are expressed by bit (binary):
 

Bit 7 (trading price/volume)  
 0: No trading price/volume, no data transmitted.  
 1: With trading price/volume, and data transmitted.

Bit 6-4 (purchasing price/volume)  
 000: No purchasing price/volume, no data transmitted.  
 001-101: Display the position of stocks by purchasing price/volume (the top five positions are displayed in binary codes).

Bit 3-1 (selling price/volume)  
 000: No selling price/volume, no data transmitted.  
 001-101: Display the position of stocks by selling price/volume (the top five positions are displayed in binary codes).

Bit 0 (Price and Volume of the best five stock transactions) 0: Display the trading price and volume and the price and volume of the best five stock transactions.  
 1: Only display the trading price and volume, the price and volume of the best five stock transactions are not displayed.

#### Description:

After the consignment trading is matched for each transaction, it may have several trading price and volume displayed. When display the final trading price and volume, the price and volume of the best five stock transactions are also disclosed, Bit 0 = 0. When it is not the final trading price and volume displayed, then only display the trading price and volume but the price and volume of the best five stock transactions are not displayed, Bit 0 = 1.

(2) The data length of every price and volume field is 5 and 4 bytes respectively.

### 3.4 Rise/Fall Remarks

(1) Rise/fall remarks, held match instantaneous price trends, and delayed remarks on market at close are expressed by bit (default: 0x00)

Bit 7-6: Trading rise/fall remarks

00: General trading

01: Fall stop trading

10: Rise stop trading

Bit 5-4: Optimal position purchase rise/fall remarks

00: General purchase

01: Fall stop purchase

10: Rise stop purchase

Bit 3-2: Optimal position sale rise/fall remarks

00: General sale

01: Fall stop sale

10: Rise stop sale

Bit 1-0: Instantaneous Price Trend

00: General display

01: Held match and instantaneous fall trend

10: Held match and instantaneous rise trend

11: [Reserved]

(2) Purchase (Sales) rise/fall remarks display only the purchase (selling) price of the stock at the optimal position.

### 3.5 Status Remarks

(1) Trial status remarks, delayed open remarks after trial, delayed close remarks after trial and way of matching remarks, open remarks and close remarks are expressed by individual bit (default 0X00).

Bit 7 Trial status remarks

0: General display

1: Trial display

Bit 6 Delayed open remarks after trial

0: Negative

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1: Positive

Bit 5 Delayed close remarks after trial

0: Negative

1: Positive

Bit 4 Way of matching remarks

0: Aggregate auction

1: Continuous market method

Bit 3 Open remarks

0: Negative

1: Positive

Bit 2 Close remarks

0: Negative

1: Positive

Bit 1-0 Reserved

(2) If Bit 7=1, it means at the moment real-time quote which is in the field of 3.10 is in the Trial Status. If Bit 7=0, it means real-time quote is in the General Display Status, and in the meantime Bit 5 and 6 remarks are of meaninglessness.

(3) If Bit 3=1, represents current open display data; if Bit 2=1, represents current close display data.

3.6 Opening Price: Expressed in PACK BCD, length 5 bytes, to record the auction opening price of common stocks. If Opening Price = 0 means no opening price has not come out today.

3.7 Highest Trading Price: Expressed in PACK BCD, length 5 bytes, to record the highest trading price of the auction of common stocks after the market opens.

3.8 Lowest Trading Price: Expressed in PACK BCD, length 5 bytes, to record the lowest trading price of the auction of common stocks after the market opens.

3.9 Accumulative Trading Volume: transmitting the latest accumulative trading volume of individual stock by the unit of trading.

3.10 Real-time Quotes

Transmit the latest real-time quote information of stocks by trading price/volume, top five positions by purchasing price/volume, and top five positions by selling price/volume. Every trading, purchasing and selling volume represents one trading unit.

(1) The length of data expressed in PACK BCD in every price and volume field is 5 and 4 bytes respectively

(2) If Bit 7 of the Disclosed Item Remarks field is 1, this means there are trading price/volume data.

i. If Instantaneous Price Trend of Rise/Fall remark is General Display i.e. Bit 1-0 = 00, the item displays the current price and volume.

ii. If Instantaneous Price Trend of Rise/Fall remark is Held Match i.e. Bit 1-0 = 01 or 10, the item will display the latest price and volume which expressed by 0; neither the purchasing nor the selling price/volume is displayed.

(3) i. If Bit 6-4 of the Disclosed Item Remarks field is 001-101, this means there are purchasing Taipei Exchange

price/volume data, and the data at the top five positions and their purchasing price/volume (sheet or unit) are transmitted in binary codes in ascending order.

- ii. If the “price field” of purchasing the best position shows 0, it means purchasing at market price; the “volume field” is the market purchasing volume.
- iii. The best purchasing price/volume is shown in ascending order based on the purchasing price. Market purchasing price/volume, if any, is listed at the top first position.

(4) i. If Bit 3-1 of the Disclosed Item Remarks field is 001-101, this means there are selling price/volume data, and the data at the top five positions and their selling price/volume (sheet or unit) are transmitted in binary codes in ascending order.

- ii. If the “price field” of selling the best position shows 0, it means sold at market price; the “volume field” is the market selling volume.
- iii. The best-selling price/volume is shown in ascending order based on the selling price. Market selling price/volume, if any, is listed at the top first position.

(5) For a trial match i.e. Status Remark Bit 7 = 1, the Real-time Quotes data is at the trial stage.

4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.

5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.



# Taipei Exchange Data Transmission Format

**Format code: Format 21**

Page: \_1\_

Length (RL): Fixed length 116 bytes

Format Title: Realtime Indices Definition of TPEx

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“0116”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“21”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“01”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		103	11-113		
3.1	Index code	X (06)	6	11-16	ASCII	
3.2	Index name in Chinese	X(44)	44	17-60	PACK BCD	
3.3	Index name in English	X(44)	44	61-104	BIT MAP	
3.4	Yesterday closing index	9(05)V99	4	105-108	BIT MAP	
3.5	Opening index time	9(04)	2	109-110	BIT MAP	
3.6	Closing index time	9(04)	2	111-112	PACK BCD	
3.7	Format code of transferring	9(04)	1	113-113	PACK BCD	
4	Checksum	X(01)	1	114-114	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	115-116	HEXACODE: 0D 0A	

## Field Description:

1. ESC-CODE: the fixed value (ASCII 27) of the starting byte of each entry record.
2. HEADER: The Header field of the information. The same HEADER field applied each transmission format.
  - 2.1 Information length:
    - (1) Represented by PACK BCD (length: 2 bytes).
    - (2) The entire length of the information entry (in bytes), including ESC-CODE, HEADER, BODY, checksum, and TERMINAL-CODE.
  - 2.2 Business type: Expresses main board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: PACK BCD “21” represents Format 21 (length: 1 byte).
  - 2.4 Transmission Format Version:
    - (1) Version 1 is represented by PACK BCD “01” (length: 1 bytes).
    - (2) Format version will be arranged in sequential order starting from 1 and the format is independently codified.
  - 2.5 Transmission S/N:
    - (1) PACK BCD represents Transmission Code (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually. All of the real-time index definitions of TPEx are transmitted repeatedly before the market opens.
3. BODY: Total length: 116 bytes
  - 3.1 Index Code: Represented by ASCII 6 bytes.
  - 3.2 Index name in Chinese: Represented by ASCII 44 bytes.
  - 3.3 Index name in English: Represented by ASCII 44 bytes.
  - 3.4 Yesterday closing index: Represented by PACK BCD 4 bytes.

3.5 Opening index time:

- (1) Represented by PACK BCD 2 bytes. Time unit is HHMM.
- (2) The value is the time that TPEx sends the opening index.

3.6 Closing index time:

- (1) Represented by PACK BCD 2 bytes. Time unit is HHMM.
- (2) The value is the time that TPEx sends the closing index.

3.7 Format code of transferring index:

- (1) Represented by PACK BCD 1 bytes.
- (2) The value is the format code of transferring index. If the value is “12”, it indicates that the real-time index is transferred by format 12: Information on Newly compiled TPEx indices.

4. Checksum: Calculation of the XOR value from the 2nd to the last byte of the BODY.

5. TERMINAL-CODE: the ending BYTE of each entry RECORD with fixed value of (HEXACODE:0D 0A).

# Taipei Exchange Data Transmission Format

## Format code: Format 22

Page: \_1\_

Length (RL): Fixed length 60 bytes

Format Title: Basic Data of Intraday Odd Lot Trading (TPEx) Main Board Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“60”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“22”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“01”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		47	11-57		
3.1	Stock Code	X(06)	6	11-16	ASCII	
3.2	Stock Abbreviation in Chinese	X(06)	16	17-32	ASCII	
3.3	Stock Entries	X(02)	2	33-34	ASCII	
3.4	Stock Anomaly Code	9(02)	1	35-35	PACK BCD	
3.5	Today Reference Price	9(5)V9(4)	5	36-40	PACK BCD	
3.6	Rise Stop Price	9(5)V9(4)	5	41-45	PACK BCD	
3.7	Fall Stop Price	9(5)V9(4)	5	46-50	PACK BCD	
3.8	Day Trading Indicator	X(01)	1	51-51	ASCII	
3.9	Matching Cycle Seconds	9(06)	3	52-54	PACK BCD	
3.10	Trading Unit	9(05)	3	55-57	PACK BCD	
4	Checksum	X(01)	1	58-58	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	59-60	HEXACODE: 0D 0A	

### Field Description:

1. ESC-CODE: the fixed value (ASCII 27) of the starting byte of each entry record.
2. HEADER: The Header field of the information. The same HEADER field applied each transmission format.
  - 2.1 Information length:
    - (1) Represented by PACK BCD (length: 2 bytes).
    - (2) The entire length of the information entry (in bytes), including ESC-CODE, HEADER, BODY, checksum, and TERMINAL-CODE.
  - 2.2 Business type: Expresses main board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: PACK BCD “22” represents Format 22 (length: 1 byte).
  - 2.4 Transmission Format Version:
    - (1) Version 1 is represented by PACK BCD “01” (length: 1 bytes).
    - (2) Format version will be arranged in sequential order starting from 1 and the format is independently codified.
  - 2.5 Transmission S/N:
    - (1) PACK BCD represents Transmission Code (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually. All of the real-time index definitions of TPEx are transmitted repeatedly before the market opens.
3. BODY: Total length: 47 bytes
  - 3.1 Stock Code: Expressed in ASCII codes, totally 6 bytes. Please refer to Appendix B for details of the Stock coding rules.

### 3.2 Stock Abbreviation: Expressed in ASCII 16 BYTES.

### 3.3 Stock Entries

- (1) Presented by ASCII 2 BYTE for identifying the data in the field of "Stock Code".
- (2) If the field of Stock Entries shows SPACES, the definition of "Stock Code" field remained unchanged.
- (3) Before the trading starts, the last entry of all basic information on individual stocks being transmitted in cyclical sequence will be marked by "AL" and the "Stock Code" field will be presented by "Total entries of Stocks".
- (4) The data transmitted in cyclical sequence during trading hours will include the stocks added to the listing of TPEx on the same day and the last entry will be marked by "NE" in the field of "Stock Entries" while the field of "Stock Code" will be marked as "total new entries of stocks".

### 3.4 Stock Anomaly Code

- (1) Expressed in PACK BCD (length: 1)
  - 00 Normal
  - 01 Attention
  - 02 Disposition
  - 03 Attention and Disposition
  - 04 Further Disposition
  - 05 Attention and Further Disposition
  - 06 Flexible Disposition
  - 07 Attention and Flexible Disposition
- (2) See Articles 6 for attention and disposition actions in the Taipei Exchange Corporation Directions for Announcement or Notice of Attention to Trading Information and Dispositions.

### 3.5 Today Reference Price

- (1) Expressed in PACK BCD (length: 5 bytes)
- (2) Government Bonds 0 (no rise and stop limits)

### 3.6 Rise Stop Price

- (1) Expressed in PACK BCD (length: 5 bytes)
- (2) Government Bonds-Last trading price

### 3.7 Fall Stop Price

- (1) Expressed in PACK BCD (length: 5 bytes)
- (2) Government Bonds-Last trading price

### 3.8 Day Trading Indicator: Presented with ASCII 1 BYTE, its value is "A", "B" or SPACE with SPACE as the default. A value of "A" denotes Buy first then Sell, or Sell first then Buy Day Trading Securities. A value of "B" denotes Buy first then Sell Day Trading Securities. A value of SPACE denotes Non-Day Trading Securities.

### 3.9 Matching Cycle Seconds: 6 digits number presented with PACK BCD (Length: 3 BYTE), records the matching cycle seconds of the individual stock using aggregate auction. A value of "0" denotes the individual stock using continuous market method.

### 3.10 Trading Unit:

The amount of shares for every trading unit of a stock (the amount of warrants for warrant and beneficiary certificates for beneficiary certificate) expressed in PACK BCD (length: 3 bytes). The default value is 1000. The shares of buy/sell order is not permitted to exceed the trade unit in the intraday odd lot trading. If the record value is 1000, this means every trading unit is 1000 shares and maximum shares of buy/sell order is 999 in the intraday odd lot trading. If it is 500, this means every trading unit is 500 shares and maximum shares of buy/sell order is 499.

4. Checksum: Calculation of the XOR value from the 2nd to the last byte of the BODY.
5. TERMINAL-CODE: the ending BYTE of each entry RECORD with fixed value of (HEXACODE:0D 0A).

# Taipei Exchange Data Transmission Format

**Format code: Format 23**

Page: \_1\_

Length (RL): Variable Length 34-155 bytes

Format Title: Real time Market Data of Intraday Odd Lot Trading (TPEX) Main Board Stocks

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“23”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“01”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		21-142			
3.1	Stock Code	X (06)	6	11-16	ASCII	
3.2	Matching Time	9(12)	6	17-22	PACK BCD	
3.3	Disclosed Item Remarks	X(01)	1	23-23	BIT MAP	
3.4	Rise/Fall Remarks	X(01)	1	24-24	BIT MAP	
3.5	Status Remarks	X(01)	1	25-25	BIT MAP	
3.6	Accumulative Trading Volume	9(12)	6	26-31	PACK BCD	
3.7	Real-time Quotes		0-121	32-??		OCCURS 0-11 TIMES
3.7.1	Price Field	9(05)V9(4)	5	??-??	PACK BCD	
3.7.2	Volume Field (Sheet)	9(12)	6	??-??	PACK BCD	
4	Checksum	X(01)	1	??-??	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	??-??	(HEXACODE: 0D 0A)	

## Field Description:

1. ESC-CODE: the fixed value (ASCII 27) of the starting byte of each entry record.
2. HEADER: The Header field of the information. The same HEADER field applied each transmission format.
  - 2.1 Information length:
    - (1) Represented by PACK BCD (length: 2 bytes).
    - (2) The entire length of the information entry (in bytes), including ESC-CODE, HEADER, BODY, checksum, and TERMINAL-CODE.
  - 2.2 Business type: Expresses main board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: PACK BCD “23” represents Format 23 (length: 1 byte).
  - 2.4 Transmission Format Version:
    - (1) Version 1 is represented by PACK BCD “01” (length: 1 bytes).
    - (2) Format version will be arranged in sequential order starting from 1 and the format is independently codified.
  - 2.5 Transmission S/N:
    - (1) PACK BCD represents Transmission Code (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually. All of the real-time index definitions of TPEX are transmitted repeatedly before the market opens.
3. BODY: Variable length from 21 to 142bytes.
  - 3.1 Stock Code
    - (1) Expressed in ASCII 6 BYTE. Refer to Appendix B for stock coding rules.

- (2) If the Stock Code “000000” matched at time “999999999999”, it means the data on the last entry of auction transaction of common stocks are being transmitted.

### 3.2 Matching Time

- (1) Expressed in PACK BCD in the format hour: minute: second: millisecond: microsecond (HHMMSSmmmμμμ).
- (2) In case of a held match (justifiable with bit 1-0 in Rise/Fall Remarks); the match held start time is displayed in the Matching Time field.
- (3) If the Stock Code “000000” matched at time “999999999999”, it means the data on the last entry of auction transaction of common stocks has been transmitted.

### 3.3 Disclosed Item Remarks

- (1) Displayed items are expressed by bit (binary):

Bit 7 (trading price/volume)

0: No trading price/volume, no data transmitted.

1: With trading price/volume, and data transmitted.

Bit 6-4 (purchasing price/volume)

000: No purchasing price/volume, no data transmitted.

001-101: Display the position of stocks by purchasing price/volume (the top five positions are displayed in binary codes).

Bit 3-1 (selling price/volume)

000: No selling price/volume, no data transmitted.

001-101: Display the position of stocks by selling price/volume (the top five positions are displayed in binary codes).

Bit 0 (Reserved)

- (2) The data length of every price and volume field is 5 and 6 bytes respectively.

### 3.4 Rise/Fall Remarks

- (1) Rise/fall remarks, held match instantaneous price trends, and delayed remarks on market at close are expressed by bit (default: 0 x 00)

Bit 7-6: Trading rise/fall remarks

00: General trading

01: Fall stop trading

10: Rise stop trading

Bit 5-4: Optimal position purchase rise/fall remarks

00: General purchase

01: Fall stop purchase

10: Rise stop purchase

Bit 3-2: Optimal position sale rise/fall remarks

00: General sale

01: Fall stop sale

10: Rise stop sale

Bit 1-0: Instantaneous Price Trend

00: General display

01: Held match and instantaneous fall trend

10: Held match and instantaneous rise trend

11: (Reserved)

- (2) Purchase (Sales) rise/fall remarks display only the purchase (selling) price of the stock at the optimal position.

### 3.5 Status Remarks

- (1) Trial status remarks, delayed open remarks after trial, delayed close remarks after trial and way of matching remarks, open remarks and close remarks are expressed by individual bit

(default 0X00).

Bit 7 Trial status remarks

0: General display

1: Trial display

Bit 6 (Reserved)

Bit 5 (Reserved)

Bit 4 Way of matching remarks

0: Aggregate auction

1: Continuous market method

Bit 3 Open remarks

0: Negative

1: Positive

Bit 2 Close remarks

0: Negative

1: Positive

Bit 1-0 (Reserved)

(2) If Bit 7=1, it means at the moment real-time quote which is in the field of 3.7 is in the Trial Status.

(3) If Bit 3=1, represents current open display data; if Bit 2=1, represents current close display data.

3.6 Accumulative Trading Volume: transmitting the latest accumulative trading volume of individual stock by the shares.

### 3.7 Real-time Quotes

Transmit the latest real-time quote information of stocks by trading price/volume, top five positions by purchasing price/volume, and top five positions by selling price/volume. Every trading, purchasing and selling volume represents one share.

(1) The length of data expressed in PACK BCD in every price and volume field is 5 and 6 bytes respectively

(2) If Bit 7 of the Disclosed Item Remarks field is 1, this means there are trading price/volume data.

i. If Instantaneous Price Trend of Rise/Fall remark is General Display i.e. Bit 1-0 = 00, the item displays the current price and volume.

ii. If Instantaneous Price Trend of Rise/Fall remark is Held Match i.e. Bit 1-0 = 01 or 10, the item will display the latest price and volume which expressed by 0; neither the purchasing nor the selling price/volume is displayed.

(3) i. If Bit 6-4 of the Disclosed Item Remarks field is 001-101, this means there are purchasing price/volume data, and the data at the top five positions and their purchasing price/volume (sheet or unit) are transmitted in binary codes in ascending order.

ii. If the “price field” of purchasing the best position shows 0, it means purchasing at market price; the “volume field” is the market purchasing volume.



- iii. The best purchasing price/volume is shown in ascending order based on the purchasing price. Market purchasing price/volume, if any, is listed at the top first position.
- (4) i. If Bit 3-1 of the Disclosed Item Remarks field is 001-101, this means there are selling price/volume data, and the data at the top five positions and their selling price/volume (sheet or unit) are transmitted in binary codes in ascending order.
  - ii. If the “price field” of selling the best position shows 0, it means sold at market price; the “volume field” is the market selling volume.
  - iii. The best-selling price/volume is shown in ascending order based on the selling price. Market selling price/volume, if any, is listed at the top first position.
- (5) For a trial match i.e. Status Remark Bit 7 = 1, the Real-time Quotes data is at the trial stage.

4. Checksum: Calculation of the XOR value from the 2nd to the last byte of the BODY.

5. TERMINAL-CODE: the ending BYTE of each entry RECORD with fixed value of (HEXACODE:0D 0A).

# Taipei Exchange Data Transmission Format

**Format code: Format 24**

Page: \_1\_

Length (RL): Variable Length 47-146 bytes

Format Title: Snapshot Information on Continuous Trading for (TPEx) Main Board Call (Put) Warrants

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“24”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“01”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		34-133			
3.1	Stock Code	X (06)	6	11-16	ASCII	
3.2	Matching Time	9(12)	6	17-22	PACK BCD	
3.3	Disclosed Item Remarks	X(01)	1	23-23	BIT MAP	
3.4	Rise/Fall Remarks	X(01)	1	24-24	BIT MAP	
3.5	Status Remarks	X(01)	1	25-25	BIT MAP	
3.6	Opening Price	9(05)V9(4)	5	26-30	PACK BCD	
3.7	Highest Trading Price	9(05)V9(4)	5	31-35	PACK BCD	
3.8	Lowest Trading Price	9(05)V9(4)	5	36-40	PACK BCD	
3.9	Accumulative Trading Volume	9(08)	4	41-44	PACK BCD	
3.10	Real-time Quotes		0-99	45-??		OCCURS 0-11 TIMES
3.10.1	Price Field	9(05)V9(4)	5	??-??	PACK BCD	
3.10.2	Volume Field (Sheet)	9(08)	4	??-??	PACK BCD	
4	Checksum	X(01)	1	??-??	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	??-??	HEXACODE: 0D 0A	

Note: A number of price/quantity data will be generated as a result of several counts of transactions at the same time. The real time express news of the “latest bid price” and “accumulated trading volume” transmitted via format 24 is not necessarily the final price/quantity of that point in time.

For example, if a particular stock has an offer and quantity in the X file of the order record book, and at this point in time comes a broad lot order for purchase and the bid price can satisfy the offer of the seller, the match will instantaneously generate X transaction price/quantity and is the identical transaction price at the nearest point in time. The information on the most recent transaction price/quantity pop out in this format is in real time and can be one of the transactions from the 1st to the Xth transaction price/quantity at that specific point in time.

## Field Description

1. ESC-CODE: Initial byte of every record, fixed value (ASCII 27).
2. HEADER: Information header field. The same header field is applied to all transmission formats.
  - 2.1 Information Length
    - (1) Expressed in PACK BCD (length: 2 bytes).
    - (2) Records of the length (byte) of the entire information, including the ESC-CODE, HEADER, BODY, Checksum and TERMINAL-CODE.

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2.2 Business Type: Expresses main board stock transactions on stock market in PACK BCD “02” (length: 1 byte).

2.3 Transmission Format Code: Expresses Format 24 in PACK BCD “24” (length: 1 byte).

2.4 Transmission Format Version

(1) Expressed in PACK BCD “01” for version 1 (length is 1 BYTE).

(2) Versions are numbered from 1, and every format has individual version numbers.

2.5 Transmission S/N

(1) Expressed in PACK BCD (length: 4 bytes).

(2) Begins from 1 serially every day, and every format is numbered individually.

3. BODY: Variable length from 34 to 133 bytes.

Market snapshots transmit the latest market data of warrants every five seconds. No update transmitted if the market data remain the same.

If the market data of warrants do not change for too long, the latest market data will be transmitted again within 30 seconds.

3.1 Stock Code

(1) Expressed in ASCII 6 BYTE.

(2) If the Stock Code “000000” matched at time “999999999999”, it means the data on the last entry of auction transaction of common stocks are being transmitted.

3.2 Matching Time

(1) Expressed in PACK BCD in the format hour: minute: second: millisecond: microsecond (HH:MM:SS:MS:μS).

(2) In case of a held match (justifiable with bit 1-0 in Rise/Fall Remarks); the match held start time is displayed in the Matching Time field.

(3) If the Stock Code “000000” matched at time “999999999999”, it means the data on the last entry of auction transaction of common stocks has been transmitted.

3.3 Disclosed Item Remarks

(1) Displayed items are expressed by bit (binary):

Bit 7 (trading price/volume)

0: No trading price/volume, no data transmitted.

1: With trading price/volume, and data transmitted.

Bit 6-4 (purchasing price/volume)

000: No purchasing price/volume, no data transmitted.

001-101: Display the position of stocks by purchasing price/volume (the top five positions are displayed in binary codes).

Bit 3-1 (selling price/volume)

000: No selling price/volume, no data transmitted.

001-101: Display the position of stocks by selling price/volume (the top five positions are displayed in binary codes).

Bit 0 (Price and Volume of the best five stock transactions) 0: Display the trading price and volume and the price and volume of the best five stock transactions.

1: Only display the trading price and volume, the price and volume of the best five stock transactions are not displayed.

**Description:**

After the consignment trading is matched for each transaction, it may have several trading price and volume displayed. When display the final trading price and volume, the price and volume of the best five stock transactions are also disclosed, Bit 0 = 0. When it is not the final trading price and volume displayed, then only display the trading price and volume but the price and volume of the best five stock transactions are not displayed, Bit 0 = 1.

(2) The data length of every price and volume field is 5 and 4 bytes respectively.

### 3.4 Rise/Fall Remarks

(1) Rise/fall remarks, held match instantaneous price trends, and delayed remarks on market at close are expressed by bit (default: 0x00)

**Bit 7-6: Trading rise/fall remarks**

- 00: General trading
- 01: Fall stop trading
- 10: Rise stop trading

**Bit 5-4: Optimal position purchase rise/fall remarks**

- 00: General purchase
- 01: Fall stop purchase
- 10: Rise stop purchase

**Bit 3-2: Optimal position sale rise/fall remarks**

- 00: General sale
- 01: Fall stop sale
- 10: Rise stop sale

**Bit 1-0: Instantaneous Price Trend**

- 00: General display
- 01: Held match and instantaneous fall trend
- 10: Held match and instantaneous rise trend
- 11: [Reserved]

(2) Purchase (Sales) rise/fall remarks display only the purchase (selling) price of the stock at the optimal position.

### 3.5 Status Remarks

(1) Trial status remarks, delayed open remarks after trial, delayed close remarks after trial and way of matching remarks, open remarks and close remarks are expressed by individual bit (default 0X00).

**Bit 7 Trial status remarks**

- 0: General display
- 1: Trial display

**Bit 6 Delayed open remarks after trial**

- 0: Negative

1: Positive

Bit 5 Delayed close remarks after trial

0: Negative

1: Positive

Bit 4 Way of matching remarks

0: Aggregate auction

1: Continuous market method

Bit 3 Open remarks

0: Negative

1: Positive

Bit 2 Close remarks

0: Negative

1: Positive

Bit 1-0 Reserved

(2) If Bit 7=1, it means at the moment real-time quote which is in the field of 3.10 is in the Trial Status. If Bit 7=0, it means real-time quote is in the General Display Status, and in the meantime Bit 5 and 6 remarks are of meaninglessness.

(3) If Bit 3=1, represents current open display data; if Bit 2=1, represents current close display data.

3.6 Opening Price: Expressed in PACK BCD, length 5 bytes, to record the auction opening price of common stocks. If Opening Price = 0 means no opening price has not come out today.

3.7 Highest Trading Price: Expressed in PACK BCD, length 5 bytes, to record the highest trading price of the auction of common stocks after the market opens.

3.8 Lowest Trading Price: Expressed in PACK BCD, length 5 bytes, to record the lowest trading price of the auction of common stocks after the market opens.

3.9 Accumulative Trading Volume: transmitting the latest accumulative trading volume of individual stock by the unit of trading.

3.10 Real-time Quotes

Transmit the latest real-time quote information of stocks by trading price/volume, top five positions by purchasing price/volume, and top five positions by selling price/volume. Every trading, purchasing and selling volume represents one trading unit.

(1) The length of data expressed in PACK BCD in every price and volume field is 5 and 4 bytes respectively

(2) If Bit 7 of the Disclosed Item Remarks field is 1, this means there are trading price/volume data.

i. If Instantaneous Price Trend of Rise/Fall remark is General Display i.e. Bit 1-0 = 00, the item displays the current price and volume.

ii. If Instantaneous Price Trend of Rise/Fall remark is Held Match i.e. Bit 1-0 = 01 or 10, the item will display the latest price and volume which expressed by 0; neither the purchasing nor the selling price/volume is displayed.

- (3)
  - i. If Bit 6-4 of the Disclosed Item Remarks field is 001-101, this means there are purchasing price/volume data, and the data at the top five positions and their purchasing price/volume (sheet or unit) are transmitted in binary codes in ascending order.
  - ii. If the “price field” of purchasing the best position shows 0, it means purchasing at market price; the “volume field” is the market purchasing volume.
  - iii. The best purchasing price/volume is shown in ascending order based on the purchasing price. Market purchasing price/volume, if any, is listed at the top first position.
- (4)
  - i. If Bit 3-1 of the Disclosed Item Remarks field is 001-101, this means there are selling price/volume data, and the data at the top five positions and their selling price/volume (sheet or unit) are transmitted in binary codes in ascending order.
  - ii. If the “price field” of selling the best position shows 0, it means sold at market price; the “volume field” is the market selling volume.
  - iii. The best-selling price/volume is shown in ascending order based on the selling price. Market selling price/volume, if any, is listed at the top first position.
- (5) For a trial match i.e. Status Remark Bit 7 = 1, the Real-time Quotes data is at the trial stage.

4. Checksum: Checksum: Calculates the XOR VALUE the second to the last bytes of the BODY.

5. TERMINAL-CODE: The ending byte of every record, default is HEXACODE: 0D 0A.

# Taipei Exchange Data Transmission Format

**Format code: Format 25**

Page: \_1\_

Length (RL): Fixed Length 32 bytes

Format Title: Available Balance for Securities Borrowing and Lending

Order	Field Name/Description	Attribute	Length	Position	Storage Method	Note
1	ESC-CODE	X(01)	1	1- 1	ASCII 27	
2	HEADER		9	2-10		
2.1	Information Length	9(04)	2	2- 3	PACK BCD	“32”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“02”
2.3	Transmission Format Code	9(02)	1	5- 5	PACK BCD	“25”
2.4	Transmission Format Version	9(02)	1	6- 6	PACK BCD	“01”
2.5	Transmission S/N	9(08)	4	7-10	PACK BCD	
3	BODY		19	11-29		
3.1	Update Time	9(12)	6	11-16	PACK BCD	
3.2	Stock Code	X(06)	6	17-22	ASCII	
3.3	Available Balance for Securities Borrowing and Lending	9(14)	7	23-29	PACK BCD	
4	Checksum	X(01)	1	30-30	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	31-32	(HEXACODE: 0D 0A)	

Field Description:

1. ESC-CODE: the fixed value (ASCII 27) of the starting byte of each entry record.
2. HEADER: The Header field of the information. The same HEADER field applied each transmission format.
  - 2.1 Information length:
    - (1) Represented by PACK BCD (length: 2 bytes).
    - (2) The entire length of the information entry (in bytes), including ESC-CODE, HEADER, BODY, checksum, and TERMINAL-CODE.
  - 2.2 Business type: Expresses main board stock transactions on stock market in PACK BCD “02” (length: 1 byte).
  - 2.3 Transmission Format Code: PACK BCD “25” represents Format 25 (length: 1 byte).
  - 2.4 Transmission Format Version:
    - (1) Version 1 is represented by PACK BCD “01” (length: 1 bytes).
    - (2) Format version will be arranged in sequential order starting from 1 and the format is independently codified.
  - 2.5 Transmission S/N:
    - (1) PACK BCD represents Transmission Code (length: 4 bytes).
    - (2) Begins from 1 serially every day, and every format is numbered individually.
3. BODY: Total length: 19 bytes
 

The available balance for securities borrowing and lending (SBL) will be transmitted every five seconds, but will not be transmitted if there is no change in the information. If the individual stock information has not changed for an extended time, then the latest information will be retransmitted within 30 seconds.

  - 3.1 Update time: 12 digits, expressed in PACK BCD (length: 6 bytes).
    - (1) The update time is the system time for checking the available balance for SBL, in the format of hour, minute, second, millisecond and microsecond (HHMMSSmmmmμμμ).
    - (2) The "available balance for securities borrowing" is transmitted in cycle before the

transaction, and the update time is "000000000000". Field 3.3 indicates the individual stock's available balance for securities borrowing; if the stock code is "000000" and the update time is "000000000000", then field 3.3 indicates the total number of stocks transmitted in cycle.

(3) If the stock code is "000000" and the update time is "999999999999", it means that the last quotation data of the available balance for SBL has been sent out.

### 3.2 Stock Code:

(1) Expressed in ASCII 6 bytes. Please refer to Appendix II for securities coding rules.

(2) The "available balance for SBL" is transmitted in cycle before the transaction, and the update time is "000000000000". Field 3.3 indicates the individual stock's available balance for SBL; if the stock code is "000000" and the update time is "000000000000", then field 3.3 indicates the total number of stocks transmitted in cycle.

(3) If the stock code is "000000" and the update time is "999999999999", it means that the last quotation data of the available balance for SBL has been sent out.

3.3 Available balance for SBL: 14 digits, expressed in PACK BCD (length: 7 bytes).

4. Checksum: Calculation of the XOR value from the 2nd to the last byte of the BODY.

5. TERMINAL-CODE: the ending BYTE of each entry RECORD with fixed value of (HEXACODE:0D 0A).



## **Appendix A: Description of Transmission Sequence**

### **Transmission of Before-hour Information (approx. 08:00-08:59)**

- Format 1: Information of individual stocks is transmitted once every minute. (Approx.07:40-08:40)
- Format 2: Trading statistics information on Continuous trading is transmitted once per 5 seconds.
- Format 3: Yesterday closing index is transmitted once every 5 seconds.
- Format 5: Announcements of the day are transmitted once every 5 minutes.
- Format 15: Information of suspended stocks of the day is transmitted every 5 minutes.
- Format 22: Basic Data of Intraday odd lot trading Stocks is transmitted once every minute. (Approx.07:40-08:40)

### **Transmission of Before-hour Information (approx. 07:50-08:59)**

- Format 12: Yesterday's closing index is transmitted once approximately per minute.

### **Transmission of Common Stocks Intraday Information (09:00-13:45)**

- Format 1: Information of individual stocks is transmitted once every minute; new stocks only. (Approx.08:40-13:30)
- Format 2: Trading information is transmitted once every 5 seconds.
- Format 3: The latest index information is transmitted once every 5 seconds.
- Format 4: One-minute consigned trade information is transmitted once every 5 seconds.
- Format 5: General announcements are transmitted once every 60 minutes; all new emergency announcements are transmitted immediately; and sent emergency announcements of the day are transmitted in cycles every 5 minutes.
- Format 6: The purchasing, selling and trading price/volume of individual stocks are transmitted in real time.
- Format 11: Information of auction opening (closing) price of Main Board stocks are transmitted at every 10 minutes intraday and every 5 minutes after hour (until 14:00).
- Format 12: Newly compiled TPEX indices are transmitted once per 5 seconds.
- Format 17: The purchasing, selling and trading price/volume of Call (put) warrant are transmitted in real time.
- Format 18: Transmission of information on the prices during trading hours once every 10 minutes, and once every 5 minutes at close, on the trading of Call (Put) Warrant in (TPEX) Main Board Market stocks at opening (close) (transmission ended at 14:00).
- Format 20: Latest market display of the purchasing, selling and trading price/volume of individual stock is transmitted every 5 seconds.
- Format 22: Basic Data of Intraday odd lot trading Stocks is transmitted once every minute; new stocks only. (Approx.08:40-13:30)
- Format 23: The purchasing, selling and trading price/volume of Intraday odd lot trading Stocks are transmitted in real time.
- Format 24: The latest market information of the purchase, sale and transaction price of the call (put) warrant is transmitted every five seconds.

### **Transmission of After-hour Fixed-price Consignment Information(14:00-14:30)**

- Format 5: General announcements are transmitted once every 5 minutes; all new emergency announcements are transmitted immediately; and sent emergency announcements of the day are transmitted in cycles every 5 minutes.
- Format 8: One-minute consigned trade information is transmitted once every 30 seconds.
- Format 10: Information of after-hour fixed-price one-minute consigned trad of individual stocks is transmitted once every cycles.

### **Transmission of After-hour Fixed-price Trading Information (approx. 14:30-15:00)**

- Format 7: Statistics on the trading volume (except the accumulative trading volume of auction) of the after-hour fixed-price transaction market is transmitted after the match transactions are completed by the after-hour fixed-price transaction system; and the last trading information of the fixed-price transaction market is transmitted repeatedly at every 30 seconds afterwards.
- Format 8: Statistics on the one-minute consignments in the last trading information of the fixed-price transaction market is transmitted repeatedly at every 30 seconds.

Format 9: Information of after-hour fixed-price trading of individual stocks (except the accumulative trading volume of auction) is transmitted once every minute.

### Transmission of Miscellaneous Information

Format 5: General announcements are transmitted once at every 5 minutes from 14:30-17:00; all new emergency announcements are transmitted immediately; and sent emergency announcements of the day are transmitted in cycles every 5 minutes.

Format 13: Real-time transaction information of odd lots on stock market is transmitted during 14:25-14:50. Trial calculation information is transmitted before matching at 14:30. Match trading information of odd lots is transmitted after 14:30 every 30 seconds repeatedly until 14:50.

Format 14: 14:30 - 16:00 Data of the full name of call (put) warrants is transmitted. After 14:30, Data of the full name of call (put) warrants is transmitted every 10 minutes. (Transmission ends at 16:00).

Format 16: The HeartBeat data of the Main Board stock quote transmission system are transmitted during 08:00-17:20. Startup information is transmitted immediately after the startup of the daily quote transmission system. HeartBeat data are then transmitted once every 30 seconds; and the last entry of data is transmitted about every 5 minutes after 17:15.

Format 19: Data on Main Board stocks suspended/resumed for transaction will be transmitted during 08:00-17:00.

Format 21: Realtime index definition are transmitted once at every 1 minutes from 08:00-14:30.on stocks newly suspended/resumed for trading will be transmitted immediately. Data on stocks suspended/resumed for trading will be transmitted once every 10 minutes.

Format 21: Realtime index definition are transmitted once at every 1 minutes from 08:00-14:30.

Format 25: The latest available balance for SBL will be transmitted every five seconds between 07:40 to 17:10, but will not be transmitted if there is no change in the information. If the individual stock information has not changed for a long time, then the latest information will be retransmitted within 30 seconds.

## Appendix B: Stock Coding Rules

A stock code is expressed in ASCII code, 6bytes

Stock Type	Stock Code					
	byte 1	byte 2	byte 3	byte 4	byte 5	byte 6
Common Stocks	1   9	0   9	0   9	0   9		
General Preferred Stocks	Original Code				A   Y	
Convertible Bonds	Original Code				1   9	Void, 0   9
Exchangeable Corporate Bonds, Exchangeable Financial Bonds	Original Code				0	1   9
Exchangeable Preferred Stocks	Original Code				Z	1   9
Subscription warrants	Original Code				G	1   9

Preferred Stocks with Warrants	Original Code				G	A   C
Debentures with Warrants	Original Code				G	D   L
Callable Bull Contract with domestic securities or index as underlying assets.	7	0   3	0   9	0   9	0   9	0   9
Callable Bear Contract with domestic securities or index as underlying assets.	7	0   3	0   9	0   9	0   9	P U T
Callable Bull Contract with foreign securities or indexes as underlying assets						F
Callable Bear Contract with foreign securities or indexes as underlying assets						Q
“Lower Limit Callable Bull Contract” (Bull Contract) with domestic securities or indexes as underlying assets						C
“Upper Limit Callable Bear Contract” (Bear Contract) with domestic securities or indexes as underlying assets						B
“Open-End Callable Bull Contract” whose underlying assets are domestic securities or indices (Open-End Callable Bull Contract)						X
“Open-End Callable Bear Contract” whose underlying assets are domestic securities or indices (Open-End Callable Bear Contract)						Y
Depository Receipt	9	1	0   9	0   9	0   9	0   9
Corporate Bond Convertible into Depository Receipts					C	1   9
Corporate Bond with Warrants on Depository Receipts					G	D   L
Remaining Corporate Bond with Warrants Exercised for Depository Receipts					F	1   9
Warrant on Depository Receipts					G	1   9
Beneficiary Certificate	0	0	0   4	0   9	0   9	0   9
ETF(exchange traded fund)	0	0	5   9	0   9	0   9	
ETF(denominated in foreign currencies)						K
Bond ETF						B
Bond ETF(denominated in foreign currencies)						C
Leveraged ETFs						L
Leveraged ETFs (denominated in foreign currencies)						M
Inverse ETFs						R
Inverse ETFs (denominated in foreign currencies)						S
Futures Trust ETFs						U

Futures Trust ETFs (denominated in foreign currencies)						V
ETN	0	2	0   9	0   9	0   9	0   9
Bond ETN	0	2	0	0	0	B
Leveraged ETN						L
Inverse ETN			9	9	9	R
Strategy ETN						S
Real Estate Investment Trust Beneficiary Securities	0	1	0   9	0   9	0   9	T

## Appendix C: Stock Industry Category

The industry category of common stocks is identified with the following codes:

Industry Category Code	Industry Category	Industry Category Code	Industry Category	Industry Category Code	Industry Category
02	Food Industry	03	Plastic Industry	04	Textile & Fiber
05	Electrical Engineering & Machinery	06	Appliance & Cable	08	Glass & Ceramics
10	Steel & Iron Industry	11	Rubber Industry	14	Construction Materials & Construction
15	Sea Transport Industry	16	Tourism and Hospitality	17	Finance Industry
20	Other	21	Chemical Industry	22	Biotechnology & Medical Care
23	Oil, Gas and Electricity Industry	24	Semiconductor Industry	25	Computer & Peripheral Equipment Industry
26	Optoelectronic Industry	27	Communications and Internet Industry	28	Electronic Parts/Components Industry
29	Electronic Products Distribution Industry	30	Information Service Industry	31	Other Electronic Industry
32	Cultural Innovation Industry	33	Agricultural Technology Industry	80	Stock Management
35	Green Energy and Environmental Services	36	Digital and Cloud Services	37	Sports and Leisure
38	Household				

## Appendix D: Stock Category Code Table

Code	Meaning
W1	Callable Bull Contract, proportionally issued (the amount of original conversion target shares is 1000 upon issue)
W2	Callable Bull Contract, un-proportionally issued (the amount of original conversion target shares is not 1000 upon issue)
W3	Callable Bear Contract, proportionally issued (the amount of original conversion target shares is 1000 upon issue)
W4	Callable Bear Contract, un-proportionally issued (the amount of original conversion target shares is not 1000 upon issue)

BS	Securities stocks of domestic listed companies
FB	Bank stocks of domestic listed companies
Blank	Listed securities of other domestic companies
RR	Listed securities of other foreign companies
RS	Securities stocks of foreign listed companies
RB	Bank stocks of foreign listed companies

## Appendix E: Table of Transmission Setting

Line	Transmission Category	Multicast Group	Port
1st IP	Real-Time Market Data of Stock and Basic Data	224.0.30.30	3000
		224.0.130.130	13000
2nd IP	Real-Time Market Data of Call (Put) Warrant and Basic Data	224.2.30.30	3002
		224.2.130.130	13002
3rd IP	Snapshot Data of Stock, Call (Put) Warrant and Basic Data	224.4.30.30	3004
		224.4.130.130	13004
4th IP	Other Data (Basic Data, Statistic, Announcement, Available Balance for SBL...etc.)	224.6.30.30	3006
		224.6.130.130	13006
5th IP	Real-Time Market Data and Basic Data of Intraday Odd Lot Trading Stock	224.8.30.30	3008
		224.8.130.130	13008

## Appendix F: Table of Online Transmission Formats

Line Market information format	1 <sup>st</sup> IP	2 <sup>nd</sup> IP	3 <sup>rd</sup> IP	4 <sup>th</sup> IP	5 <sup>th</sup> IP
Format 1	✓	✓	✓	✓	
Format 2				✓	
Format 3				✓	
Format 4				✓	
Format 5				✓	
Format 6	✓				
Format 7				✓	
Format 8				✓	
Format 9				✓	
Format 10				✓	
Format 11	✓			✓	

Format 12				✓	
Format 13				✓	
Format 14				✓	
Format 15				✓	
Format 16				✓	
Format 17		✓			
Format 18		✓		✓	
Format 19				✓	
Format 20			✓		
Format 21				✓	
Format 22					✓
Format 23					✓
Format 24			✓		
Format 25				✓	

## Appendix G: Trading Currency Code

Represented by ASCII Code in length of 3 bytes

<b>Currency Code</b>	AUD	CAD	CNY	EUR	GBP	HKD	JPY	KRW	SEK
<b>Meaning</b>	Australian Dollar	Canadian Dollar	China Yen	Euro	British Pound	Hong Kong Dollar	Japanese Yen	Korean Won	Swedish Krona

<b>Currency Code</b>	SGD	USD
<b>Meaning</b>	Singapore Dollar	American Dollar