Taiwan Stock Exchange
Market Information Transmission Operation Manual

(IP Feed Specification)

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1. Introduction

1.1 Information Format Development History

1.1.1 The Taiwan Stock Exchange (TWSE) implemented four policies as of 1 July 2002 to promote market internationalization and liberalization, to ensure fair and efficient trade, and to assure information transparency. These policies included (1) integration of abolition of tick size restrictions and auction; (2) stabilization of instantaneous intraday stock price; (3) 5-minute collective auction at closing; and (4) disclosure of the one unexecuted stock with the highest buying and the lowest bids and their volumes. Further in 2004, the TWSE implemented the policy of disclosure of the five unexecuted stocks with the highest buying and the lowest bids and their volumes. Information transmission lag occurred as a result because the baud rate at 9.6Kbps of the data transmission circuits of market information companies (securities companies) was unable to handle the augmentation of data volume from the auction system adjustment of the TWSE.

1.1.2 In consideration of the data transmission baud rate, future expandability and the requirements of the new-generation system architecture and with reference to the recommendations from information companies, the TWSE decided to modify the protocol and baud rate of data transmission circuits for information companies as solutions for the information lag problem. In addition to enhancing quote data transmission by adopting the TCP/IP protocol and by upgrading the baud rate to 512Kbps, the TWSE reviewed the content of data transmission formats in order to enhance information transmission volume and data processing efficiency.

1.1.3 In the data transmission format review, relevant fields were either simplified or combined and field expandability was reserved to meet the future business development needs in order to enhance program maintainability.

1.2 Modifying transmission data for high-speed quote transmission architecture and protocol

The bandwidth will be extensively increased after using the TCP/IP protocol and upgrading baud rate to 512Kbps. In condition of future system planning and architecture and data item expandability, the HEADER field is added to the formats of quote data transmission based on the TCP/IP protocol in order to enhance the processing efficiency of information companies after receiving quote data transmitted from the TWSE.

1.2.1 The information field length is increased for the receiving programs of information companies to justify packet length.

1.2.2 Shared quote transmission circuits are planned to transmit quote information of different businesses and data sources are remarked and identified by business to reduce the hardware replacement cost and to enhance circuit use efficiency of information companies.

1.2.3 The field for transmission format codes is moved to the HEADER field.

1.2.4 Remarks for transmission format versions are increased to facilitate the receiving programs of information companies to justify old or new data by version in future transmission format update tests.

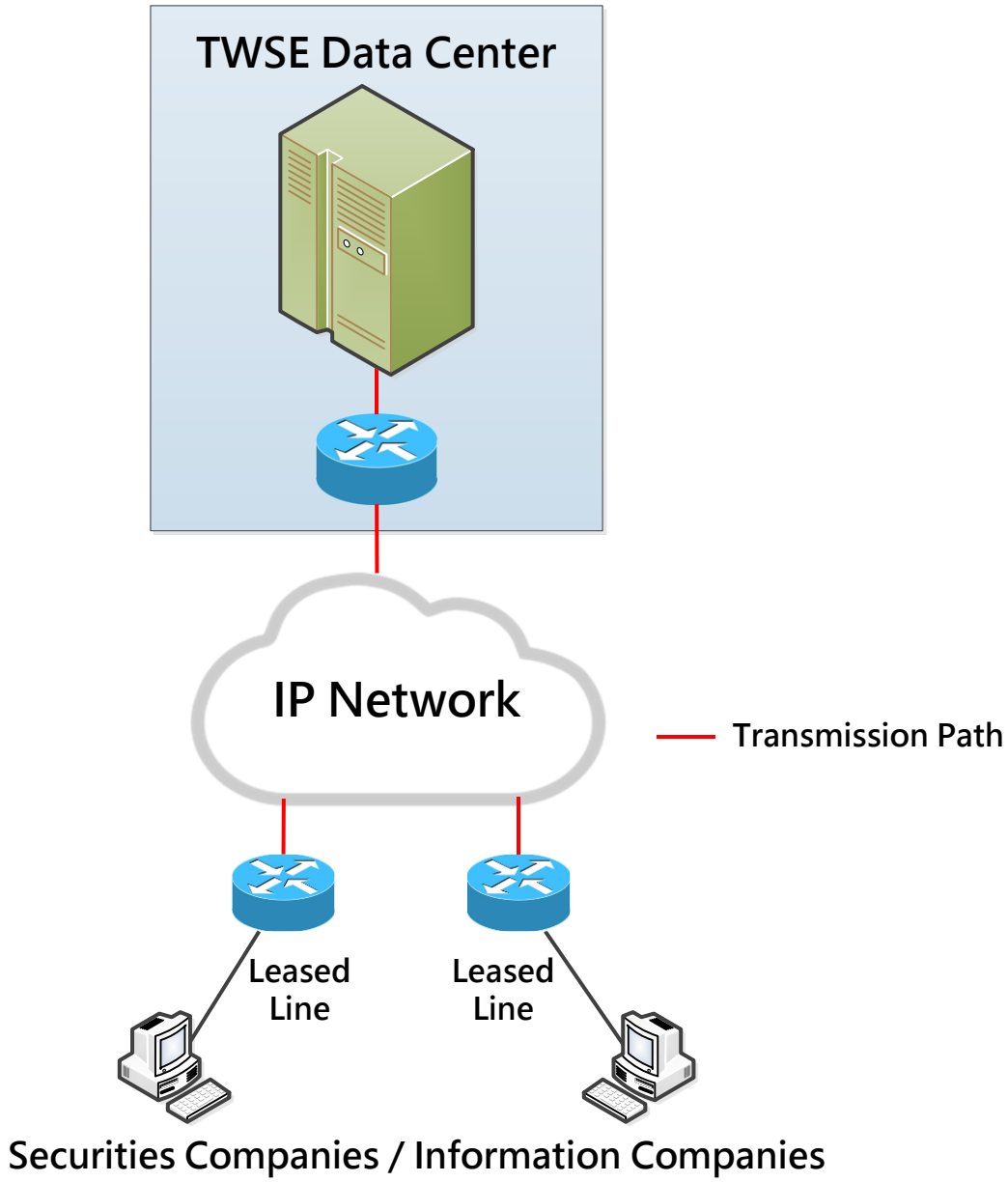
1.2.5 The transmission serial number field is added for receiving programs to check if data received are complete because the telecast function of TCP/IP has no guaranteed delivery mechanisms.

2. Connection Architecture

2.1 Connection requirements

2.1.1 Routers/switch routers equipped with IGMP feature to connect to the IP Data Transmission Network.
2.1.2 The TCP/IP shall be used as the protocol for all transmission circuits.
2.1.3 Each channel's market data is published in duplicate on two separate multicast addresses.

2.2 System Architecture Chart



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 9 bytes) in hexagonal expressions:
0x31 0x32 0x33 0x34 0x35 0x36 0x37 0x38 0x39
(Totally 9 bytes) (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 5 bytes):0000 0001 0010 0011 0100 0101 0110 0111 1000 1001
(Totally 5 bytes) (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

Format 1 : Basic Data of Individual Stocks on TWSE

Length (RL): Fixed length 114 bytes

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	“01”
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		54	11-64		
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	Board Code	X(01)	1	40-40	ASCII	‘0’/’3’
3.1.8	Today Reference Price	9(5)V9(4)	5	41-45	PACK BCD	
3.1.9	Rise Stop Price	9(5)V9(4)	5	46-50	PACK BCD	
3.1.10	Fall Stop Price	9(5)V9(4)	5	51-55	PACK BCD	
3.1.11	Non-$10 face value indicator	X(01)	1	56-56	ASCII	
3.1.12	Abnormal recommendation indicator	X(01)	1	57-57	ASCII	
3.1.13	Abnormal securities indicator	X(01)	1	58-58	ASCII	
3.1.14	Day Trading Indicator	X(01)	1	59-59	ASCII	
3.1.15	Exemption of Unchanged Market Margin Sale Indicator	X(01)	1	60-60	ASCII	
3.1.16	Exemption of Unchanged Market Securities Lending Sale Indicator	X(01)	1	61-61	ASCII	
3.1.17	Matching Cycle Seconds	9(06)	3	62-64	PACK BCD	
3.2	Warrant (CBBC)Data		39	65-103		
3.2.1	Warrant(CBBC) ID	X(01)	1	65-65	ASCII	
3.2.2	Exercise (Strike) price	9(6)V9(4)	5	66-70	PACK BCD	
3.2.3	Previous Business Day Exercise Volume	9(10)	5	71-75	PACK BCD	

3.2.4	Previous Business Day Cancellation Volume	9(10)	5	76-80	PACK BCD	
3.2.5	Issuing Balance (Volume)	9(10)	5	81-85	PACK BCD	
3.2.6	Strike Ratio	9(06)V99	4	86-89	PACK BCD	
3.2.7	Upper Limit Price	9(6)V9(4)	5	90-94	PACK BCD	
3.2.8	Lower Limit Price	9(6)V9(4)	5	95-99	PACK BCD	
3.2.9	Maturity Date	9(8)	4	100-103	PACK BCD	
3.3	Foreign Stock Information		7	104-110		
3.3.1	Foreign Stock ID	X(01)	1	104-104	ASCII	
3.3.2	Trading Unit	9(05)	3	105-107	PACK BCD	
3.3.3	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 common stock transactions on stock market in PACK BCD "01" (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 "09", 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 common stocks on stock market are transmitted repeatedly with Format 1 before the market opens; and the basic data of new common 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 54 bytes.

3.1.1 Stock Code: Expressed in ASCII codes, totally 6 bytes. Please refer to Appendix B for details of the Stock coding rules.

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 common stocks and preferred stocks from this field (see Appendix C for details of stock industry code).

(2) The said preferred stocks include preferred stocks, preferred stocks with warrants(CBBCs), stock payment certificate with warrants(CBBCs) and conversion certificates. 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 (Appendix B).

(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 (Appendix B).

(4) Government bonds are displayed as usual; the value expressed in this field is the first and fourth codes of the stock code (see Item 1, Stock Industry Code Category Code,

Appendix C, for details).

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, securities stock of domestic listed companies, bank stocks of domestic listed companies, and stocks of foreign companies listed in Taiwan) that are unable to identified directly from the stock code, information contained in this filed facilitates users to identify the special meanings of such stocks (see Stock Category Code Table, Appendix D, for details).

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 TWSE 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 Taiwan Stock Exchange Corporation Directions for Announcement or Notice of Attention to Trading Information and Dispositions

3.1.7 Board Code: Presented in ASCII 1 BYTE; default value is "0". A value of "3" denotes a Taiwan Innovation Board security.

3.1.8 Today Reference Price

(1) Expressed in PACK BCD (length: 5 bytes)

(2) Government Bonds-0 (no rise and stop limits)

3.1.9 Rise Stop Price

(1) Expressed in PACK BCD (length: 5 bytes)

(2) Government Bonds-Last trading price

3.1.10 Fall Stop Price

(1) Expressed in PACK BCD (length: 5 bytes)

(2) Government Bonds-Last trading price

3.1.11 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.

3.1.12 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.

3.1.13 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.

3.1.14 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.

3.1.15 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.

3.1.16 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.

3.1.17 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

3.2.1 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”.

3.2.2 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.

3.2.3 Previous Business Day Exercise Volume: Expressed in PACK BCD (length: 5 BYTE) for 1000 every warrants(CBBC).

3.2.4 Previous Business Day Cancellation Volume: Expressed in PACK BCD (length: 5 BYTE) for every 1000 warrants(CBBC).

3.2.5 Issued Balance (Volume): Expressed in PACK BCD (length: 5 BYTE) for every 1000 warrants(CBBC).

3.2.6 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”.

3.2.7 Upper Limit Price: Presented with PACK BCD (length: 5BYTES), display the warrant upper limit price.

3.2.8 Lower Limit Price: Presented with PACK BCD (length: 5 BYTES), display the warrant lower limit price.

3.2.9 Maturity Date: Presented with PACK BCD (length: 4 BYTE), display the warrant maturity date (Western Date).

3.3 Other Information: (length: 7 BYTE)

3.3.1 Foreign Stock ID: Expressed in ASCII code (1 byte); the record value in “Y” or SPACE and default value is SPACE. If the record value is “Y”, this means the stock is a foreign stock.

3.3.2 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.

3.3.3 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(please see Appendix 7 for trading currency codes).

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	1st IP	Format 6	Format 12
02	2nd IP	Format 17	Format 18

The format for upload market information via the 1st and 2nd IP is shown in Appendix F.

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.

Format 2：Statistics of Auction Trading of Common Stocks on TWSE Market

Length (RL): Fixed length 142 Bytes

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	“0142”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“01”
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	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	
3.5	Total fund transaction value	9(15)	8	35-42	PACK BCD	
3.6	Fund transaction volume	9(15)	8	43-50	PACK BCD	
3.7	Fund transaction records	9(10)	5	51-55	PACK BCD	
3.8	Stock transaction value	9(15)	8	56-63	PACK BCD	
3.9	Stock transaction volume	9(15)	8	64-71	PACK BCD	
3.10	Stock transaction records	9(10)	5	72-76	PACK BCD	
3.11	Callable Bull Contract transaction value	9(15)	8	77-84	PACK BCD	
3.12	Callable Bull Contract transaction volume	9(15)	8	85-92	PACK BCD	
3.13	Callable Bull Contract transaction records	9(10)	5	93-97	PACK BCD	
3.14	Callable Bear Contract transaction value	9(15)	8	98-105	PACK BCD	
3.15	Callable Bear Contract transaction volume	9(15)	8	106-113	PACK BCD	
3.16	Callable Bear Contract transaction records	9(10)	5	114-118	PACK BCD	
3.17	Taiwan Innovation Board transaction value	9(15)	8	119-126	PACK BCD	
3.18	Taiwan Innovation Board transaction volume	9(15)	8	127-134	PACK BCD	
3.19	Taiwan Innovation Board transaction records	9(10)	5	135-139	PACK BCD	
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).
(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 common stock transactions on stock market in PACK BCD “01” (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 common 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.

3.2~3.16. Statistics on transactions

Note to information type:

3.2~3.4 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. Refer to Appendix B for the principle of the codification of stock.

3.5~3.7 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. Refer to Appendix B for the principle of the codification of stock.

3.8~3.10 Statistics on stock trade:

The information on the statistics of common stock (refer to common stock of Appendix B: Stock coding rules, does not include Taiwan Innovation Board Securities.) and comprises total transaction value, volume and records.

3.11~3.13 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. Refer to Appendix B for the principle of the codification of securities.

3.14~3.16 Statistics on Callable Bear Contract:

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. Refer to Appendix B for the principle of the codification of securities.

3.17~3.19 Statistics on Taiwan Innovation Board:

The information on the statistics of Taiwan Innovation Board. The content of the information includes the total transaction value, volume and records. Refer to Appendix B for the principle of the codification of securities.

Notes to the attributes of fields:

3.2, 3.5, 3.8, 3.11, 3.14, 3.17 total transaction value:

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

3.3, 3.6, 3.9, 3.12, 3.15, 3.18 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.

3.4, 3.7, 3.10, 3.13, 3.16, 3.19 counts of transactions:

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

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.

Format 4 : Statistics on Auction Consignments of Common Stocks on TWSE Market

Length (RL): Fixed length 304 Byte

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	“01”
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 Accumulated Time	9(06)	3	11-13	PACK BCD	
3.2	Overall market consigned purchase records	9(08)	4	14-17	PACK BCD	
3.3	Overall market consigned sales records	9(08)	4	18-21	PACK BCD	
3.4	Overall market consigned purchase volume	9(08)	4	22-25	PACK BCD	
3.5	Overall market consigned sales volume	9(08)	4	26-29	PACK BCD	
3.6	Fund consigned purchase records	9(08)	4	30-33	PACK BCD	
3.7	Fund consigned sales records	9(08)	4	34-37	PACK BCD	
3.8	Fund consigned purchase volume	9(08)	4	38-41	PACK BCD	
3.9	Fund consigned sales volume	9(08)	4	42-45	PACK BCD	
3.10	Stock consigned purchase records	9(08)	4	46-49	PACK BCD	
3.11	Stock consigned sales records	9(08)	4	50-53	PACK BCD	
3.12	Stock consigned purchase volume	9(08)	4	54-57	PACK BCD	
3.13	Stock consigned sales volume	9(08)	4	58-61	PACK BCD	
3.14	Callable Bull Contract consigned purchase records	9(08)	4	62-65	PACK BCD	
3.15	Callable Bull Contract consigned sales records	9(08)	4	66-69	PACK BCD	
3.16	Callable Bull Contract consigned purchase volume	9(08)	4	70-73	PACK BCD	
3.17	Callable Bull Contract consigned sales volume	9(08)	4	74-77	PACK BCD	
3.18	Callable Bear Contract consigned purchase records	9(08)	4	78-81	PACK BCD	
3.19	Callable Bear Contract consigned sales records	9(08)	4	82-85	PACK BCD	
3.20	Callable Bear Contract consigned purchase volume	9(08)	4	86-89	PACK BCD	
3.21	Callable Bear Contract consigned sales volume	9(08)	4	90-93	PACK BCD	
3.22	Taiwan Innovation Board consigned purchase records	9(08)	4	94-97	PACK BCD	
3.23	Taiwan Innovation Board consigned sales records	9(08)	4	98-101	PACK BCD	
3.24	Taiwan Innovation Board consigned purchase volume	9(08)	4	102-105	PACK BCD	

3.25	Taiwan Innovation Board consigned sales volume	9(08)	4	106-109	PACK BCD	
3.26	Overall market rise stop consigned purchase records	9(08)	4	110-113	PACK BCD	
3.27	Overall market rise stop consigned sales records	9(08)	4	114-117	PACK BCD	
3.28	Overall market rise stop consigned purchase volume	9(08)	4	118-121	PACK BCD	
3.29	Overall market rise stop consigned sales volume	9(08)	4	122-125	PACK BCD	
3.30	Overall market fall stop consigned purchase records	9(08)	4	126-129	PACK BCD	
3.31	Overall market fall stop consigned sales records	9(08)	4	130-133	PACK BCD	
3.32	Overall market fall stop consigned purchase volume	9(08)	4	134-137	PACK BCD	
3.33	Overall market fall stop consigned sales volume	9(08)	4	138-141	PACK BCD	
3.34	Funds rise stop consigned purchase records	9(08)	4	142-145	PACK BCD	
3.35	Funds rise stop consigned sales records	9(08)	4	146-149	PACK BCD	
3.36	Funds rise stop consigned purchase volume	9(08)	4	150-153	PACK BCD	
3.37	Funds rise stop consigned sales volume	9(08)	4	154-157	PACK BCD	
3.38	Funds fall stop consigned purchase records	9(08)	4	158-161	PACK BCD	
3.39	Funds fall stop consigned sales records	9(08)	4	162-165	PACK BCD	
3.40	Funds fall stop consigned purchase volume	9(08)	4	166-169	PACK BCD	
3.41	Fund fall stop consigned sales volume	9(08)	4	170-173	PACK BCD	
3.42	Stock rise stop consigned purchase records	9(08)	4	174-177	PACK BCD	
3.43	Stock rise stop consigned sales records	9(08)	4	178-181	PACK BCD	
3.44	Stock rise stop consigned purchase volume	9(08)	4	182-185	PACK BCD	
3.45	Stock rise stop consigned sales volume	9(08)	4	186-189	PACK BCD	
3.46	Stock fall stop consigned purchase records	9(08)	4	190-193	PACK BCD	
3.47	Stock fall stop consigned sales records	9(08)	4	194-197	PACK BCD	
3.48	Stock fall stop consigned purchase volume	9(08)	4	198-201	PACK BCD	
3.49	Stock fall stop consigned sales volume	9(08)	4	202-205	PACK BCD	
3.50	Callable Bull Contract rise stop consigned purchase records	9(08)	4	206-209	PACK BCD	
3.51	Callable Bull Contract rise stop consigned sales records	9(08)	4	210-213	PACK BCD	
3.52	Callable Bull Contract rise stop Consigned purchase volume	9(08)	4	214-217	PACK BCD	
3.53	Callable Bull Contract rise stop consigned sales volume	9(08)	4	218-221	PACK BCD	

3.54	Callable Bull Contract fall stop consigned purchase records	9(08)	4	222-225	PACK BCD	
3.55	Callable Bull Contract fall stop consigned sales records	9(08)	4	226-229	PACK BCD	
3.56	Callable Bull Contract fall stop consigned purchase volume	9(08)	4	230-233	PACK BCD	
3.57	Callable Bull Contract fall stop consigned sales volume	9(08)	4	234-237	PACK BCD	
3.58	Callable Bear Contract rise stop consigned purchase records	9(08)	4	238-241	PACK BCD	
3.59	Callable Bear Contract rise stop consigned sales records	9(08)	4	242-245	PACK BCD	
3.60	Callable Bear Contract rise stop consigned purchase volume	9(08)	4	246-249	PACK BCD	
3.61	Callable Bear Contract rise stop consigned sales volume	9(08)	4	250-253	PACK BCD	
3.62	Callable Bear Contract fall stop consigned purchase records	9(08)	4	254-257	PACK BCD	
3.63	Callable Bear Contract fall stop consigned sales records	9(08)	4	258-261	PACK BCD	
3.64	Callable Bear Contract fall stop consigned purchase volume	9(08)	4	262-265	PACK BCD	
3.65	Callable Bear Contract fall stop consigned sales volume	9(08)	4	266-269	PACK BCD	
3.66	Taiwan Innovation Board rise stop consigned purchase records	9(08)	4	270-273	PACK BCD	
3.67	Taiwan Innovation Board rise stop consigned sales records	9(08)	4	274-277	PACK BCD	
3.68	Taiwan Innovation Board rise stop consigned purchase volume	9(08)	4	278-281	PACK BCD	
3.69	Taiwan Innovation Board rise stop consigned sales volume	9(08)	4	282-285	PACK BCD	
3.70	Taiwan Innovation Board fall stop consigned purchase records	9(08)	4	286-289	PACK BCD	
3.71	Taiwan Innovation Board fall stop consigned sales records	9(08)	4	290-293	PACK BCD	
3.72	Taiwan Innovation Board fall stop consigned purchase volume	9(08)	4	294-297	PACK BCD	
3.73	Taiwan Innovation Board fall stop consigned sales volume	9(08)	4	298-301	PACK BCD	
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 common stock transactions on the stock market in PACK BCD "01" (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 common 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.

3.2~3.61 Consignment statistics

Notes to data type:

3.2~3.5、3.26~3.33 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. Refer to Appendix B for the principle of the codification of securities.

3.6~3.9、3.34~3.41 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. Refer to Appendix B for the codification of securities.

3.10~3.13、3.42~3.49 Statistics on consignment of stocks:

The information on consignment of stocks is the statistics on common shares (refer to common stock of Appendix B: Stock coding rules, does not include Taiwan Innovation Board 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 fall stop consigned sales volume.

3.14~3.17、3.50~3.57 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. Refer to Appendix B on the principle of the codification of securities.

3.18~3.21、3.58~3.65 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. Refer to Appendix B on the principle of the codification of securities.

3.22~3.25、3.66~3.73Statistics on consignment of Taiwan Innovation Board:

The information on consignment of Taiwan Innovation Board is the statistics on Taiwan Innovation Board. 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. Refer to Appendix B on the principle of the codification of securities.

Notes to attributes of fields:

3.2、3.6、3.10、3.14、3.18、3.22 consigned purchase records:
Represented by PACK BCD (length of 4 BYTE) on the records of accumulated consigned purchase.

3.3、3.7、3.11、3.15、3.19、3.23 consigned sales records:
Represented by PACK BCD (length of 4 BYTE) on the records of accumulated consigned sales.

3.4、3.8、3.12、3.16、3.20、3.24 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.

3.5、3.9、3.13、3.17、3.21、3.25 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.

3.26、3.34、3.42、3.50、3.58、3.66 rise stop consigned purchase records:
Represented by PACK BCD (length of 4 BYTE) on the records of accumulated rise stop consigned purchase.

3.27、3.35、3.43、3.51、3.59、3.67 rise stop consigned sales records:
Represented by PACK BCD (length of 4 BYTE) on the records of accumulated rise stop consigned sales.

3.28、3.36、3.44、3.52、3.60、3.68 rise stop consigned purchase volume:
Represented by PACK BCD (length of 4 BYTE) on
On the records of accumulated rise stop consigned purchase volume. The volume of each transaction is one trading unit.

3.29、3.37、3.45、3.53、3.61、3.69 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.)

3.30、3.38、3.46、3.54、3.62、3.70 fall stop consigned purchase records:
Represented by PACK BCD (length of 4 BYTE) on the records of accumulated rise stop consigned purchase.

3.31、3.39、3.47、3.55、3.63、3.71 fall stop consigned sales records:
Represented by PACK BCD (length of 4 BYTE) on the records of accumulated fall stop consigned sales.

3.32、3.40、3.48、3.56、3.64、3.72 fall stop consigned purchase volume: Represented by PACKBCD (length of 4BYTE)
On accumulated fall stop consigned purchase volume. The volume of each transaction is one trading unit.

3.33、3.41、3.49、3.57、3.65、3.73 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.

Format 5 :Stock Market Announcements

Length (RL): Variable Length 14-74 Byte

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	“01”
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
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 common stock transactions on stock market in PACK BCD “01” (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 accouchement”.
   (2) When the value is “99”, it means “end of an emergency accouchement”.

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.

Format 6 :Real-time Auction Quotes of Common Stocks on TWSE Market

Length (RL): Variable Length : 32~131Bytes

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	“01”
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	StockCode	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 0-11 TIMES
3.7.1	Price Field	9(05)V9(4)	5	??-??	PACK BCD	
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 common stock transactions on stock market in PACK BCD “01” (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. Once the serial number reaches 99999999, the next sequence will reset to 0 for subsequent numbering.

3. BODY: Variable length from 19 to 118 bytes.

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 (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: 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 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.
iv. For government bonds, only data of the consigned purchasing price/volume (unit) of one bond are 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 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.

iv. For government bonds, only data of the consigned selling price/volume (unit) of one bond are displayed; i.e. Disclosed Item Remarks Bit 3-1=001.

(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.

Example

1. The order number of the TSMC (2330) in Format 1 is “341”. A transaction is matched by the computer at 09:04:15:61:278. Quote information in Record #4567 is displayed. The trading price is $99.50 and accumulative trading volume is 16423 sheets. The purchasing price and volume at the top five positions in order are: $99.50 and 250 sheets; $99.00 and 175 sheets; $98.50 and 477 sheets; $97.50 and 669 sheets; and $97.00 and 125 sheets. The selling price and volume of the top three stocks are $100.00 and 80 sheets; $100.50 and 675 sheets; and $101.50 and 460 sheets.

Field Name/ Description	Attribute	Length	Position	Content	Item Description
ESC-CODE	X(01)	1	1- 1	(ASCII 27)	
Information Length	9(04)	2	2- 3	0x01 0x13	Information Length: 113 BYTE
Business Type	9(02)	1	4- 4	0x01	01: Common Stock Auction on Stock Market
Transmission Format Code	9(02)	1	5- 5	0x06	Format 6
Transmission Format Version	9(02)	1	6- 6	0x04	Version 4
Transmission S/N	9(08)	4	7-10	0x00 0x00 0x45 0x67	Record #4567
Stock Order Number	X(06)	6	11-16	0x03 0x41	Relative Stock Order=341
Matching Time	9(12)	6	17- 22	0x09 0x04 0x15 0x06 0x12 0x78	09:04:15:61:278
Disclosed Item Remarks	X(01)	1	23-23	1 101 011 0	Disclosed Items: 7 1: With trading price and volume 6-4 101: Purchasing price/volume at the top five positions 3-1 011: Selling price/volume of the top three stocks
Rise/Fall Remarks	X(01)	1	24-24	00 00 00 00	Displays rise/fall remarks of prices Normal display of general trading, purchasing and selling prices
Status Remark	X(01)	1	25-25	0 0 0 00000(0x00)	General Display, Aggregated Auction Method
Accumulative Trading volume	9(08)	4	26-29	0x00 0x01 0x64 0x23	Accumulative Trading volume=16423
Trading Price	9(5)V9(4)	5	30-34	0x00 0x00 0x99 0x50 0x00	Trading Price=99.5000
Trading Volume	9(08)	4	35-38	0x00 0x00 0x12 0x34	In the last Trading Volume=1234
Purchasing Price1	9(5)V9(4)	5	39-43	0x00 0x00 0x99 0x50 0x00	Purchasing Price=99.5000
Purchasing Volume1	9(08)	4	44-47	0x00 0x00 0x02 0x50	Purchasing Volume=250
Purchasing Price2	9(5)V9(4)	5	48-52	0x00 0x00 0x99 0x00 0x00	Purchasing Price=99.0000
Purchasing Volume2	9(08)	4	53-56	0x00 0x00 0x01 0x75	Purchasing Volume=175
Purchasing Price3	9(5)V9(4)	5	57-61	0x00 0x00	Purchasing Price=98.5000

				0x98 0x50 0x00	
Purchasing Volume3	9(08)	4	62-65	0x00 0x00 0x04 0x77	Purchasing Volume=477
Purchasing Price4	9(5)V9(4)	5	66-70	0x00 0x00 0x97 0x50 0x00	Purchasing Price=97.5000
Purchasing Volume4	9(08)	4	71-74	0x00 0x00 0x06 0x69	Purchasing Volume=669
Purchasing Price5	9(5)V9(4	5	75-79	0x00 0x00 0x97 0x00 0x00	Purchasing Price=97.0000
Purchasing Volume5	9(08)	4	80-83	0x00 0x00 0x01 0x25	Purchasing Volume=125
Selling Price1	9(5)V9(4)	5	84-88	0x00 0x01 0x00 0x00 0x00	Selling Price=100.0000
Selling Volume1	9(08)	4	89-92	0x00 0x00 0x00 0x80	Selling Volume=80
Selling Price2	9(5)V9(4)	5	93-97	0x00 0x01 0x00 0x50 0x00	Selling Price=100.5000
Selling Volume2	9(08)	4	98-101	0x00 0x00 0x06 0x75	Selling Volume=675
Selling Price3	9(5)V9(4)	5	102-106	0x00 0x01 0x01 0x50 0x00	Selling Price=101.5000
Selling Volume3	9(08)	4	107-110	0x00 0x00 0x04 0x60	Selling Volume=460
Checksum	X(01)	1	111-111	0xFB	Checksum2~110 Byte XOR VALUE
TERMINAL-CODE	X(02)	2	112-113	0x0D 0x0A	HEXACODE:0D 0A

2. The order number of the CSC (2002) in Format 1 is “0238”. A transaction is matched by the computer at 10:27:33:165:41. Quote information in Record #64323 is displayed. The rise stop-trading price is $13.85 and accumulative trading volume is 11921 sheets. The purchasing price and volume at the top five positions in order are: $13.85 (rise stop) and 540 sheets; $13.80 and 230 sheets; $13.75 and 72 sheets; $13.70 and 69 sheets; and $13.65 and 81 sheets. There is no selling price and volume.

Field Name/ Description	Attribute	Length	Position	Content	Item Description
ESC-CODE	X(01)	1	1- 1	(ASCII 27)	
Information Length	9(04)	2	2- 3	0x00 0x86	Information Length: 86BYTES
Business Type	9(02)	1	4- 4	0x01	01: Common Stock Auction on Stock Market
Transmission Format Code	9(02)	1	5- 5	0x06	Format 6
Transmission Format Version	9(02)	1	6- 6	0x04	Version 4
Transmission S/N	9(08)	4	7-10	0x00 0x06 0x43 0x23	Record #64323
Stock Order Number	X(06)	6	11-16	0x32 0x30 0x30 0x32 0x20 0x20	Relative Stock Order=”2002 “
Matching Time	9(12)	6	17-22	0x10 0x27 0x33 0x16 0x50 0x41	10:27:33:165:41
Disclosed Item Remarks	X(01)	1	23-23	1 101 000 0	Disclosed Items: 7 1: With Trading Price/Volume 6-4 101: Purchasing price/volume at the top five positions 3-1 000: No selling price/volume
Rise/Fall Remarks	X(01)	1	24-24	10 10 00 00	Displays rise/fall remarks of prices Rise stop trading, best stock bought at rise stop price, no instantaneous price trend
Status Remarks	X(01)	1	25-25	00000000(0x00)	General Display, Aggregated Auction Method
Accumulative Trading Volume	9(08)	4	26-29	0x00 0x01 0x19 0x21	Accumulative Trading Volume=11921
Trading Price	9(5)V9(4)	5	30-34	0x00 0x00 0x13 0x85 0x00	Trading Price =13.8500
Trading Volume	9(08)	4	35-38	0x00 0x00 0x19 0x21	In the last Trading Volume= 1921 sheets
Purchasing Price1	9(5)V9(4)	5	39-43	0x00 0x00 0x13 0x85 0x00	Purchasing Price=13.8500
Purchasing Volume1	9(08)	4	44-47	0x00 0x00 0x05 0x40	Purchasing Volume=540
Purchasing Price2	9(5)V9(4)	5	48-52	0x00 0x00 0x13 0x80 0x00	Purchasing Price=13.8000
Purchasing Volume2	9(08)	4	53-56	0x00 0x00 0x02 0x30	Purchasing Volume=230
Purchasing Price3	9(5)V9(4)	5	57-61	0x00 0x00 0x13 0x75 0x00	Purchasing Price=13.7500
Purchasing Volume3	9(08)	4	62-65	0x00 0x00 0x00 0x72	Purchasing Volume=72
Purchasing Price4	9(5)V9(4)	5	66-70	0x00 0x00 0x13 0x70 0x00	Purchasing Price=13.7000
Purchasing	9(08)	4	71-74	0x00 0x00 0x00	Purchasing Volume=69

Volume4				0x69	
Purchasing Price5	9(5)V9(4)	5	75-79	0x00 0x00 0x13 0x65 0x00	Purchasing Price=13.6500
Purchasing Volume5	9(08)	4	80-83	0x00 0x00 0x00 0x81	Purchasing Volume=81
Checksum	X(01)	1	84-84	0x6E	Checksum2-83 Byte XOR VALUE
TERMINAL-CODE	X(02)	2	85-86	0x0D 0x0A	HEXACODE:0D 0A

3. The order number of the TECO (1504) in Format 1 is “0161”. A transaction is matched by the computer at 09:50:23. Quote information in Record #41234 is displayed. The fall stop trading price is $11.50 and accumulative trading volume is 650 sheets. The selling price and volume at the top five positions in order are: $11.50 (fall stop) and 70 sheets; $11.55 and 35 sheets; $11.60 and 46 sheets; $11.65 and 28 sheets; and $11.70 and 19 sheets. There is no purchasing price and volume.

Field Name/ Description	Attribute	Length	Position	Content	Item Description
ESC-CODE	X(01)	1	1- 1	(ASCII 27)	
Information Length	9(04)	2	2- 3	0x00 0x86	Information Length: 86 BYTE
Business Type	9(02)	1	4- 4	0x01	01: Common Stock Auction on Stock Market
Transmission Format Code	9(02)	1	5- 5	0x06	Format 6
Transmission Format Version	9(02)	1	6- 6	0x04	Version 4
Transmission S/N	9(08)	4	7-10	0x00 0x04 0x12 0x34	Record #41234
Stock Order Number	X(06)	6	11-16	0x31 0x35 0x30 0x34 0x20 0x20	Relative Stock Order=”1504 “
Matching Time	9(12)	6	17-22	0x09 0x50 0x23 0x27 0x15 0x34	09:50:23:271:534
Disclosed Item Remarks	X(01)	1	23-23	1 000 101 0	Disclosed Items: 7 1: With Trading Price/Volume 6-4 000: No purchasing price/ volume 3-1 101: With the top five positions for selling price/volume
Rise/Fall Remarks	X(01)	1	24-24	01 00 01 00	Displays rise/fall remarks of prices Fall stop trading, sold at the best fall stop position, no instantaneous price trend
Status Remarks	X(01)	1	25-25	00000000(0x00)	General Display, Aggregated Auction Method
Accumulative Trading Volume	9(08)	4	26-29	0x00 0x00 0x06 0x50	Accumulative Trading Volume=650
Trading Price	9(5)V9(4)	5	30-34	0x00 0x00 0x11 0x50 0x00	Trading Price=11.5000
Trading Volume	9(08)	4	35-38	0x00 0x00 0x00 0x17	In the last Trading Volume= 17
Selling Price1	9(5)V9(4)	5	39-43	0x00 0x11 0x50 0x00	Selling Price=11.5000
Selling Volume1	9(08)	4	44-47	0x00 0x00 0x00 0x70	Selling Volume=70
Selling Price2	9(5)V9(4)	5	48-52	0x00 0x11 0x55 0x00	Selling Price=11.5500
Selling Volume2	9(08)	4	53-56	0x00 0x00 0x00 0x35	Selling Volume=35
Selling Price3	9(5)V9(4)	5	57-61	0x00 0x11 0x60 0x00	Selling Price=11.6000
Selling Volume3	9(08)	4	62-65	0x00 0x00 0x00 0x46	Selling Volume=46
Selling Price4	9(5)V9(4)	5	66-70	0x00 0x11 0x65 0x00	Selling Price=11.6500
Selling Volume4	9(08)	4	71-74	0x00 0x00 0x00 0x28	Selling Volume=28
Selling Price5	9(5)V9(4)	5	75-79	0x00 0x11 0x70 0x00	Selling Price=11.7000
Selling Volume5	9(08)	4	80-83	0x00 0x00 0x00 0x19	Selling Volume=19
Checksum	X(01)	1	84-84	0xA2	Checksum2-83Byte XOR VALUE

TERMINAL-CODE	X(02)	2	85-86	0x0D 0x0A	HEXACODE:0D 0A

4. The order number of the FPC (1301) in Format 1 is “75”. After instantaneous price stabilization, the held match message is transmitted at 09:45:19. Quote information in Record #8325 is displayed. The last trading record is rise stop trading price is $33.50 and accumulative trading volume is 1558 sheets. The selling price and volume at the top five positions in order are: $11.50 (fall stop) and 70 sheets; $11.55 and 35 sheets; $11.60 and 46 sheets; $11.65 and 28 sheets; and $11.70 and 19 sheets. There is no purchasing price and volume.

Field Name/ Description	Attribute	Length	Position	Content	Item Description
ESC-CODE	X(01)	1	1- 1	(ASCII 27)	
Information Length	9(04)	2	2- 3	0x00 0x41	Information Length: 41 BYTE
Business Type	9(02)	1	4- 4	0x01	01: Common Stock Auction on Stock Market
Transmission Format Code	9(02)	1	5- 5	0x06	Format 6
Transmission Format Version	9(02)	1	6- 6	0x04	Version 4
Transmission S/N	9(08)	4	7-10	0x00 0x00 0x83 0x25	Record #8325
Stock Order Number	X(06)	6	11-16	0x31 0x33 0x30 0x31 0x20 0x20	Stock No.=”1301 “
Matching Time	9(12)	6	17-22	0x09 0x45 0x19 0x03 0x30 0x17	09:45:19:33:17
Disclosed Item Remarks	X(01)	1	23-23	1000000 0	Disclosed Items: 7 1: With Trading Price/Volume 6-5 00: No purchasing price 4 0: No purchasing volume 3-2 00: No selling price 1 0: No selling volume
Rise/Fall Remarks	X(01)	1	24-24	10 00 00 01	Displays rise/fall remarks of prices Rise stop trading, instantaneous trend: fall
Status Remarks	X(01)	1	25-25	0 0 0 00000(0x00)	General Display, Aggregated Auction Method
Accumulative Trading Volume	9(08)	4	26-29	0x00 0x00 0x15 0x58	Accumulative Trading Volume=1558
Trading Price	9(5)V9(4)	5	30-34	0x00 0x33 0x50 0x00	Trading Price=33.5000
Trading Volume	9(08)	4	35-38	0x00 0x00 0x00 0x00	In the last Trading Volume= 0
Checksum	X(01)	1	39-39	0xC6	Checksum2-38 Byte XOR VALUE
TERMINAL-CODE	X(02)	2	40-41	0x0D 0x0A	HEXACODE:0D 0A

5. The order number of the TSMC (2330) in Format 1 is “341”. A transaction is matched by the computer at 09:04:15:61:278. Quote information in Record #4567 is displayed. The trading price is $99.50 and accumulative trading volume is 16423 sheets. The purchasing price and volume at the top five positions in order are: $0.0 and 250 sheets; $99.00 and 175 sheets; $98.50 and 477 sheets; $97.50 and 669 sheets; and $97.00 and 125 sheets.

Field Name/ Description	Attribute	Length	Position	Content	Item Description
ESC-CODE	X(01)	1	1- 1	(ASCII 27)	
Information Length	9(04)	2	2- 3	0x00 0x86	Information Length: 86 BYTE
Business Type	9(02)	1	4- 4	0x01	01: Common Stock Auction on Stock Market
Transmission Format Code	9(02)	1	5- 5	0x06	Format 6
Transmission Format Version	9(02)	1	6- 6	0x04	Version 4
Transmission S/N	9(08)	4	7-10	0x00 0x00 0x45 0x67	Record #4567
Stock Order Number	X(06)	6	11-16	0x03 0x41	Relative Stock Order=341
Matching Time	9(12)	6	17- 22	0x09 0x04 0x15 0x06 0x12 0x78	09:04:15:61:278
Disclosed Item Remarks	X(01)	1	23-23	1 101 011 0	Disclosed Items: 7 1: With trading price and volume 6-4 101: Purchasing price/volume at the top five positions 3-1 000: No selling price/volume
Rise/Fall Remarks	X(01)	1	24-24	00 00 00 00	Displays rise/fall remarks of prices Normal display of general trading, purchasing and selling prices
Status Remark	X(01)	1	25-25	0 0 0 00000(0x00)	General Display, Aggregated Auction Method
Accumulative Trading volume	9(08)	4	26-29	0x00 0x01 0x64 0x23	Accumulative Trading volume=16423
Trading Price	9(5)V9(4)	5	30-34	0x00 0x00 0x99 0x50 0x00	Trading Price=99.5000
Trading Volume	9(08)	4	35-38	0x00 0x00 0x12 0x34	In the last Trading Volume=1234
Purchasing Price1	9(5)V9(4)	5	39-43	0x00 0x00 0x99 0x50 0x00	Purchasing Price=0.0000 purchasing at market price
Purchasing Volume1	9(08)	4	44-47	0x00 0x00 0x02 0x50	Purchasing Volume=250
Purchasing Price2	9(5)V9(4)	5	48-52	0x00 0x00 0x99 0x00 0x00	Purchasing Price=99.0000
Purchasing Volume2	9(08)	4	53-56	0x00 0x00 0x01 0x75	Purchasing Volume=175
Purchasing Price3	9(5)V9(4)	5	57-61	0x00 0x00 0x98 0x50 0x00	Purchasing Price=98.5000
Purchasing Volume3	9(08)	4	62-65	0x00 0x00 0x04 0x77	Purchasing Volume=477
Purchasing Price4	9(5)V9(4)	5	66-70	0x00 0x00	Purchasing Price=97.5000

				0x97 0x50 0x00	
Purchasing Volume4	9(08)	4	71-74	0x00 0x00 0x06 0x69	Purchasing Volume=669
Purchasing Price5	9(5)V9(4	5	75-79	0x00 0x00 0x97 0x00 0x00	Purchasing Price=97.0000
Purchasing Volume5	9(08)	4	80-83	0x00 0x00 0x01 0x25	Purchasing Volume=125
Checksum	X(01)	1	84-84	0xFB	Checksum2~83 Byte XOR VALUE
TERMINAL-CODE	X(02)	2	85-86	0x0D 0x0A	HEXACODE:0D 0A

Format 7 : Statistics on Finished Fixed-price Transactions of Common Stocks on TWSE Markets

Length (RL): Fixed length 37 Byte

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	“01”
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 common stock transactions on stock market in PACK BCD “01” (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 TWSE 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.

Format 8 :Statistics on Fixed-price Transaction Consignments of Common Stocks on TWSE Market

Length (RL): Fixed length 112 bytes

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	“0112”
2.2	Business Type	9(02)	1	4- 4	PACK BCD	“01”
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		99	11-109		
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	
3.6	Fund Consigned purchase records	9(08)	4	30-33	PACK BCD	
3.7	Fund Consigned sales Records	9(08)	4	34-37	PACK BCD	
3.8	Fund Consigned purchase volume	9(08)	4	38-41	PACK BCD	
3.9	Fund Consigned sales volume	9(08)	4	42-45	PACK BCD	
3.10	Total Rise Stop Consigned purchase records	9(08)	4	46-49	PACK BCD	
3.11	Total Rise Stop Consigned sales records	9(08)	4	50-53	PACK BCD	
3.12	Total Rise Stop Consigned purchase volume	9(08)	4	54-57	PACK BCD	
3.13	Total Rise Stop Consigned sales volume	9(08)	4	58-61	PACK BCD	
3.14	Total Fall Stop Consigned purchase records	9(08)	4	62-65	PACK BCD	
3.15	Total Fall Stop Consigned sales records	9(08)	4	66-69	PACK BCD	
3.16	Total Fall Stop Consigned purchase volume	9(08)	4	70-73	PACK BCD	
3.17	Total Fall Stop Consigned sales Volume	9(08)	4	74-77	PACK BCD	
3.18	Fund Rise Stop Consigned purchase records	9(08)	4	78-81	PACK BCD	
3.19	Fund Rise Stop Consigned sales records	9(08)	4	82-85	PACK BCD	
3.20	Fund Rise Stop Consigned purchase volume	9(08)	4	86-89	PACK BCD	
3.21	Fund Rise Stop Consigned sales volume	9(08)	4	90-93	PACK BCD	
3.22	Fund Fall Stop Consigned purchase records	9(08)	4	94-97	PACK BCD	
3.23	Fund Fall Stop Consigned sales records	9(08)	4	98-101	PACK BCD	
3.24	Fund Fall Stop Consigned purchase volume	9(08)	4	102-105	PACK BCD	
3.25	Fund Fall Stop Consigned sales volume	9(08)	4	106-109	PACK BCD	
4	Checksum	X(01)	1	110-110	XOR VALUE	
5	TERMINAL-CODE	X(02)	2	111-112	(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 common stock transactions on stock market in PACK BCD “01” (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 99 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 common 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.
3.2-3.25: 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.

Format 9 : Trading Information of Individual Common Stocks in Fixed-price Transactions on TWSE Market

Length (RL): Fixed Length 31bytes

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	“01”
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 common stock transactions on stock market in PACK BCD “01” (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. Refer to Appendix B for stock coding rules.

(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.

Example:
A transaction is matched at 14:30:00. The trading price is NT$11.50 and accumulative trading volume is 650 sheets.

Field Name/ Description	Attribute	Length	Position	Content	Item Description
ESC-CODE	X(01)	1	1- 1	(ASCII 27)	
Information Length	9(04)	2	2- 3	0x00 0x25	Information Length: 31 BYTE
Business Type	9(02)	1	4- 4	0x01	01: Common Stock Auction on Stock Market
Transmission Format Code	9(02)	1	5- 5	0x09	Format 9
Transmission Format Version	9(02)	1	6- 6	0x03	Version 3
Transmission S/N	9(08)	4	7-10	0x00 0x00 0x01 0x70	Record #170
Stock Order Number	9(04)	2	11-12	0x01 0x61	Relative Stock Order=161
Matching Time	9(06)	3	13-15	0x14 0x30 0x00	14:30:00
Trading Price	9(5)V9(4)	5	20-24	0x00 0x00 0x11 0x50 0x00	Trading Price=11.50
Trading Volume	9(08)	4	25-28	0x00 0x00 0x06 0x50	Accumulative Trading Volume=650 sheets
Checksum	X(01)	1	29-29	0x0E	Checksum2~23 Byte XOR VALUE
TERMINAL-CODE	X(02)	2	30-31	0x0D 0x0A	HEXACODE: 0D 0A

Format 10 : Information of TWSE-compiled Indices

Length (RL): Fixed length 26 bytes

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	“01”
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	“01”
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(6)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 common stock transactions on stock market in PACK BCD “01” (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. “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) 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 TWSE. New indices established in the future will also be transmitted in this format. Please refer to Format 21, for details.

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.

Format 12 : Information of Auction Opening (Closing) Price of Common Stocks on TWSE

Length (RL): Fixed length 374 Bytes

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	“01”
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	“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 common stock transactions on stock market in PACK BCD “01” (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 spaces; whiles 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 common 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 common 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 common 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 common stocks in the market.
(2) If the closing time is “999999999999” when the market is closed, the closing price of the auction of common 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.

Format 12 transmits 922 entries of data every cycle (e.g. there are 921 stocks on the market during 09:00-13:30)

Transmission Time: 09:05:00

Field Name/Description	Attribute	Entry 1	Entry 2	· · · ·	· · · ·	Entry 92
ESC-CODE	X(01)					
Information Length	9(04)	0374	0374			0374
Business Type	9(02)	01	01			01
Transmission Format Code	9(02)	12	12			12
Transmission Format Version	9(02)	03	03			03
Transmission S/N	9(08)	**00000001**	**00000002**			**00000092**
Stock Entries	9(02)	10	10			10
Stock Code (01)	X(06)	1101	1201			9933
Opening Price (01)	9(5)V9(4)	000125000	000093000			000125000
Highest Trading Price (01)	9(5)V9(4)	000128000	000098000			000128000
Lowest Trading Price (01)	9(5)V9(4)	000124000	000094000			000124000
Recent trading price (01)	9(5)V9(4)	000125000	000095000			000125000
Accumulative Trading Volume (01)	9(8)	00000008	00000218			00000048
Time (01)	9(6)	091003	091011			091003
Stock Code (02)	X(06)	1102	1202			9934
Opening Price (02)	9(5)V9(4)	000145000	000105000			000145000
Highest Trading Price (02)	9(5)V9(4)	000148000	000108000			000148000
Lowest Trading Price (02)	9(5)V9(4)	000144000	000104000			000144000
Recent trading price (02)	9(5)V9(4)	000145000	000105000			000145000
Accumulative Trading Volume (02)	9(8)	00000022	00000062			00000022
Time (02)	9(6)	091005	091015			091005
·	·	·	·	·	·	·
·	·	·	·	·	·	·
Stock Code (09)	X(06)	1109	1215			9938
Opening Price (09)	9(5)V9(4)	000095000	000055200			000095000
Highest Trading Price (09)	9(5)V9(4)	000098000	000058500			000098000
Lowest Trading Price (09)	9(5)V9(4)	000094000	000054500			000094000
Recent trading price (09)	9(5)V9(4)	000094000	000054500			000094000
Accumulative Trading Volume (09)	9(8)	00000010	00000310			00000010
Time (09)	9(6)	091023	091003			091023
Stock Code (10)	X(06)	1110	1216			9939
Opening Price (10)	9(5)V9(4)	000072200	000142200			000072200
Highest Trading Price (10)	9(5)V9(4)	000073400	000143400			000073400
Lowest Trading Price (10)	9(5)V9(4)	000072100	000142100			000072100
Recent trading price (10)	9(5)V9(4)	000072300	000142300			000072300
Accumulative Trading Volume (10)	9(8)	00000148	00000077			00000328
Time (10)	9(6)	091053	091003			091053
Checksum	X(01)					

TERMINAL-CODE	X(02)					

Field Name/Description	Attribute	Entry 93				
ESC-CODE	X(01)					
Information Length	9(04)	**0374**				
Business Type	9(02)	01				
Transmission Format Code	9(02)	12				
Transmission Format Version	9(02)	01				
Transmission S/N	9(08)	**00000093**				
Stock Entries	9(02)	**2**				
Stock Code (01)	X(06)	9945				
Opening Price (01)	9(5)V9(4)	000045000				
Highest Trading Price (01)	9(5)V9(4)	000048000				
Lowest Trading Price (01)	9(5)V9(4)	000044000				
Recent trading price (01)	9(5)V9(4)	000045000				
Accumulative Trading Volume (01)	9(8)	00000042				
Time (01)	9(12)	091010117873				
Stock Code (02)	X(06)	***000000***				
Opening Price (02)	9(5)V9(4)	000000000				
Highest Trading Price (02)	9(5)V9(4)	000000000				
Lowest Trading Price (02)	9(5)V9(4)	000000000				
Recent trading price (02)	9(5)V9(4)	000000000				
Accumulative Trading Volume (02)	9(8)	00000000				
Time (02)	9(12)	000000000000				
Stock Code (03)	X(06)					
Opening Price (03)	9(5)V9(4)	000000000				
Highest Trading Price (03)	9(5)V9(4)	000000000				
Lowest Trading Price (03)	9(5)V9(4)	000000000				
Recent trading price (03)	9(5)V9(4)	000000000				
Accumulative Trading Volume (03)	9(8)	00000000				
Time (03)	9(12)	000000000000				
. . . . .	. . . . .	. . . . .				
. . . . .	. . . . .	. . . . .				
Stock Code (10)	X(06)					
Opening Price (10)	9(5)V9(4)	000000000				
Highest Trading Price (10)	9(5)V9(4)	000000000				
Lowest Trading Price (10)	9(5)V9(4)	000000000				
Recent trading price (10)	9(5)V9(4)	000000000				
Accumulative Trading Volume (10)	9(8)	00000000				
Time (10)	9(6)	000000				
Checksum	X(01)					
TERMINAL-CODE	X(02)					

1. In Entry 93 of every cycle, there are no data for stocks 3-10; attribute X is expressed in spaces and 9 in low-value.
2. After the market is closed, the time value is “999999999999”, and data of the closing price (recent trading price) and in related fields are displayed repeatedly until the transmission ends.

…….Transmission time after market closed: 13:40-end of transmission

Field Name/Description	Attribute	Entry 1	Entry 2	· · · ·	· · · ·	Entry 92
ESC-CODE	X(01)					
Information Length	9(04)	0374	0374			0374
Business Type	9(02)	01	01			01
Transmission Format Code	9(02)	12	12			12
Transmission Format Version	9(02)	03	03			03
Transmission S/N	9(08)	**00000001**	**00000002**			**00000092**
Stock Entries	9(02)	10	10			10
Stock Code (01)	X(06)	1101	1201			9933
Opening Price (01)	9(5)V9(4)	000125000	000093000			000125000
Highest Trading Price (01)	9(5)V9(4)	000128000	000098000			000128000
Lowest Trading Price (01)	9(5)V9(4)	000124000	000094000			000124000
Recent trading price (01)	9(5)V9(4)	000125000	000095000			000125000
Accumulative Trading Volume (01)	9(8)	00002208	00001218			00003348
Time (01)	9(12)	**999999999999**	**999999999999**			**999999999999**
Stock Code (02)	X(06)	1102	1202			9934
Opening Price (02)	9(5)V9(4)	000145000	000105000			000145000
Highest Trading Price (02)	9(5)V9(4)	000148000	000108000			000148000
Lowest Trading Price (02)	9(5)V9(4)	000144000	000104000			000144000
Recent trading price (02)	9(5)V9(4)	000145000	000105000			000145000
Accumulative Trading Volume (02)	9(8)	00003422	00005552			00005512
Time (02)	9(12)	**999999999999**	**999999999999**			**999999999999**
.	.	.	.	.	.	.
.	.	.	.	.	.	.
Stock Code (09)	X(06)	1109	1215			9938
Opening Price (09)	9(5)V9(4)	000095000	000055200			000095000
Highest Trading Price (09)	9(5)V9(4)	000098000	000058500			000098000
Lowest Trading Price (09)	9(5)V9(4)	000094000	000054500			000094000
Recent trading price (09)	9(5)V9(4)	000094000	000054500			000094000
Accumulative Trading Volume (09)	9(8)	00001210	00006310			00004110
Time (09)	9(12)	**999999999999**	**999999999999**			**999999999999**
Stock Code (10)	X(06)	1110	1216			9939
Opening Price (10)	9(5)V9(4)	000072200	000142200			000072200
Highest Trading Price (10)	9(5)V9(4)	000073400	000143400			000073400
Lowest Trading Price (10)	9(5)V9(4)	000072100	000142100			000072100
Recent trading price (10)	9(5)V9(4)	000072300	000142300			000072300
Accumulative Trading Volume (10)	9(8)	00001148	00003377			00008848
Time (10)	9(12)	**999999999999**	**999999999999**			**999999999999**
Checksum	X(01)					
TERMINAL-CODE	X(02)					

Field Name/Description	Attribute	Entry 93				
ESC-CODE	X(01)					
Information Length	9(04)	**0374**				
Business Type	9(02)	01				
Transmission Format Code	9(02)	12				
Transmission Format Version	9(02)	03				
Transmission S/N	9(08)	**00000093**				
Stock Entries	9(02)	**2**				
Stock Code (01)	X(06)	9902				
Opening Price (01)	9(5)V9(4)	000045000				
Highest Trading Price (01)	9(5)V9(4)	000047000				
Lowest Trading Price (01)	9(5)V9(4)	000044000				
Recent trading price (01)	9(5)V9(4)	000047000				
Accumulative Trading Volume (01)	9(8)	00002342				
Time (01)	9(12)	**999999999999**				
Stock Code (02)	X(06)	***000000***				
Opening Price (02)	9(5)V9(4)	000000000				
Highest Trading Price (02)	9(5)V9(4)	000000000				
Lowest Trading Price (02)	9(5)V9(4)	000000000				
Recent trading price (02)	9(5)V9(4)	000000000				
Accumulative Trading Volume (02)	9(8)	00000000				
Time (02)	9(12)	000000000000				
Stock Code (03)	X(06)					
Opening Price (03)	9(5)V9(4)	000000000				
Highest Trading Price (03)	9(5)V9(4)	000000000				
Lowest Trading Price (03)	9(5)V9(4)	000000000				
Recent trading price (03)	9(5)V9(4)	000000000				
Accumulative Trading Volume (03)	9(8)	00000000				
Time (03)	9(12)	000000000000				
. . . . .	. . . . .	. . . . .				
. . . . .	. . . . .	. . . . .				
Stock Code (10)	X(06)					
Opening Price (10)	9(5)V9(4)	000000000				
Highest Trading Price (10)	9(5)V9(4)	000000000				
Lowest Trading Price (10)	9(5)V9(4)	000000000				
Recent trading price (10)	9(5)V9(4)	000000000				
Accumulative Trading Volume (10)	9(8)	00000000				
Time (10)	9(12)	000000000000				
Checksum	X(01)					
TERMINAL-CODE	X(02)					

Format 13: Real-time Odd Lot Transaction Information on Stock Market

Length (RL): Fixed length 44 bytes

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	“01”
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			11-35		
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 trail 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. Please refer to Format 13, Transmission Sequence, Appendix A for details of the transmission sequence of information concerning odd lot transactions.
E. 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 common stock transactions on stock market in PACK BCD “01”

(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. Refer to Appendix B for stock coding rules.

(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 (3.5) and Selling Price are expressed in individual bits (3.6)

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 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 612 types of tradable odd lots whose trial matching is displayed at 14:25:00. A total of 5011 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 00005011.

(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/N00005012-00005623) are displayed until the end of trading message is transmitted (Transmission S/N 00005624).

(4) Data of Transmission S/N 00005012-00005624 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			
			. . . .		. . . .			
			00005003		142958			
			00005004		142958			
			00005005		142958			
			00005006		142959			
			00005007		142959			
			00005008		142959			
			00005009		142959			
			00005010		142959			
			00005011		142959			
Match trading data			00005012		143000			
			00005013		143000			
			00005014		143000			
			00005015		143000			
			00005016		143000			
			. . . .					
			00005619		143000			
			00005620		143000			
			00005621		143000			
			00005622		143000			
			00005623		143000			
			00005624	000000	999999			

Repeated transmission

End of transmission

Format 14 : Full-name Information of Callable Bull(Bear) Contracts on the Stock Market

Length (RL): Fixed length 69 bytes

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	"01"
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 common stock transactions on stock market in PACK BCD "01" (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 everyday, 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). See Stock coding rules, Appendix B, for details.

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
TSMC Fubon 73 Put 01		—	TSMC□□	20080320	Euro	Put	Down	Blank

TSMC Fubon 75 Call 02		—	TSMC□□□	20080520	Am	Call	Up	Blank
Taiwan Index Fubon 78 Put 03		—	Taiwan Index□	20080820	Euro	Put	□	Blank
TSMC Fubon 79 Bull 04		—	TSMC□□	20080920	Am	Call	Bull	Blank
TSMC Fubon 7B Bear 05		—	TSMC□□	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". [□= 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.

Format 15 :Information of Suspended Stocks on the Stock Market

Length (RL): Fixed length 20 bytes

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	“01”
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 common stock transactions on stock market in PACK BCD “01” (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. See Stock coding rules, Appendix B for details.
   (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- 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.

Format 16: Quote Transmission System HeartBeat Data on Stock Market

Length (RL): Fixed length 17 bytes

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	“01”
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 common stock transactions on stock market in PACK BCD “01” (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

(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 TWSE 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 TWSE. 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.

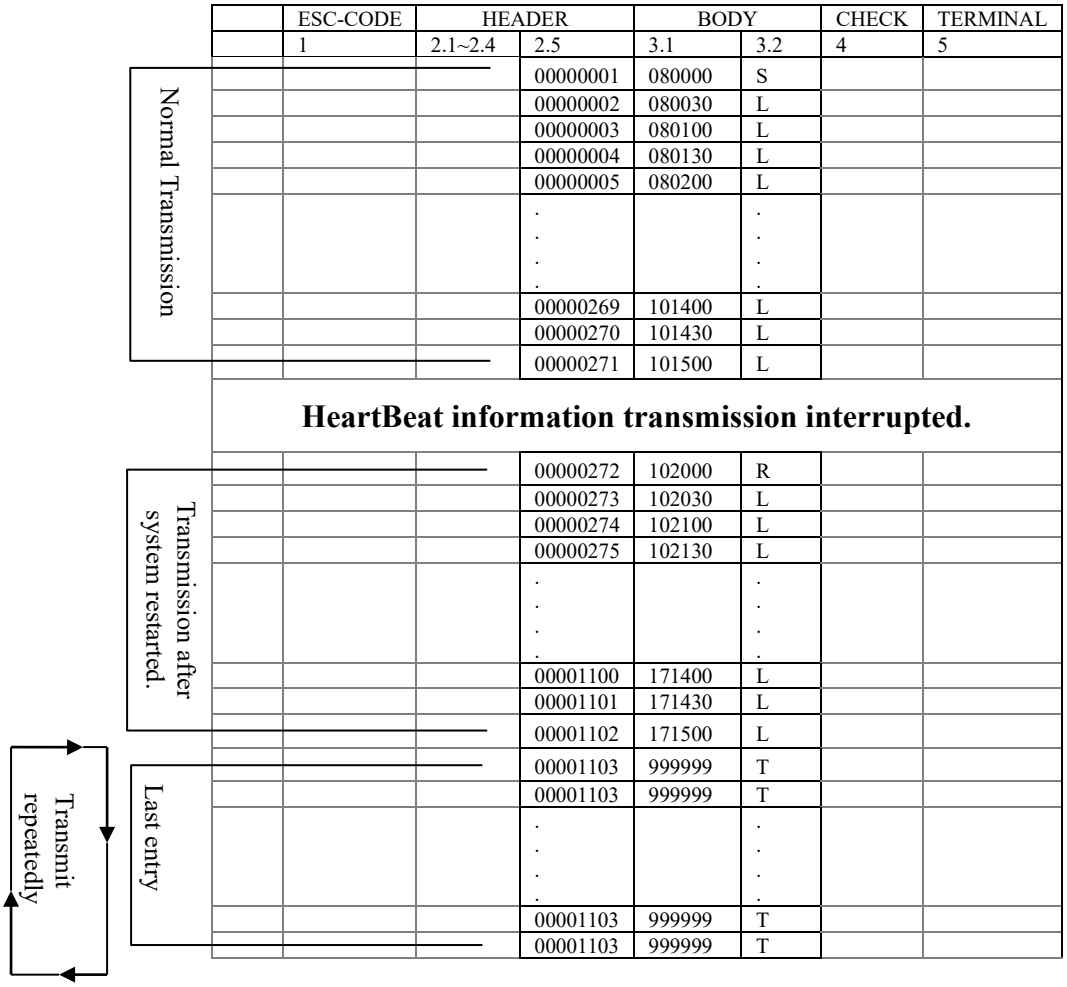
Attachment: Description of Transmission S/N in Format 16

(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
			00000001	080000	S		
			00000002	080030	L		
			00000003	080100	L		
			00000004	080130	L		
			00000005	080200	L		
			. . . .		. . . .		
			00000269	101400	L		
			00000270	101430	L		
			00000271	101500	L		
	HeartBeat information transmission interrupted.						
			00000272	102000	R		
			00000273	102030	L		
			00000274	102100	L		
			00000275	102130	L		
			. . . .		. . . .		
			00001100	171400	L		
			00001101	171430	L		
			00001102	171500	L		
			00001103	999999	T		
			00001103	999999	T		
			. . . .		. . . .		
			00001103	999999	T		
			00001103	999999	T		

Format 17 : Real-time Auction Quotes of call (put) warrant on TWSE Market

Length (RL): Variable Length 32-131 Byte

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	“01”
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(05)V9(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 common stock transactions on stock market in PACK BCD “01” (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. Once the serial number reaches 99999999, the next sequence will reset to 0 for subsequent numbering.

3. BODY: Variable length from 19-118 bytes.

3.1 Stock Code

(1) In ASCII 6 Bytes. Refer to Appendix B for stock coding rules

(2) 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 common stocks are being transmitted.

3.2 Matching Time

(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 common 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: 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 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.
iv. For government bonds, only data of the consigned purchasing price/volume (unit) of one bond are 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 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.

iv. For government bonds, only data of the consigned selling price/volume (unit) of one bond are displayed; i.e. Disclosed Item Remarks Bit 3-1=001.

(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.

Format 18: Information of Auction Opening (Closing) Price of call (put) warrants on TWSE Market

Length (RL): Fixed length 374 bytes

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	“01”
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	X(28)	360		OCCURS 10 TIMES	
3.21	Stock code	X(06)	6	?-?	ASC II	
3.22	Opening Price	9(5)V9(4)	5	?-?	PACK BCD	
3.23	Highest Trading Price	9(5)V9(4)	5	18-?	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	Accumulated 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 common stock transactions on stock market in PACK BCD “01” (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 = 361bytes)

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; whiles others are in low-value.

3.2 Data Content: length360 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 common 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 5bytes, to record the highest trading price of the auction of common 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 common 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 common stocks in the market.

(2) If the closing time is “999999999999” when the market is closed, the closing price of the auction of common 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.

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

Format 19: Data on Stocks Suspended/Resumed for trading in TWSE

Length (RL): Fixed length 26 bytes

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	"01"
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)	

Note:

I. 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 "01" represents common stock transactions in TWSE (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. Refer to Appendix B for stock coding**

rules.

(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:

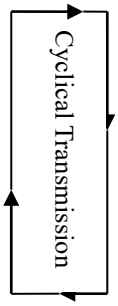
- C: Cyclical transmission of the data on stocks suspended/resumed for trading of the day.
- I: Immediate transmission of the data on stocks suspended/resumed for trading of the day.

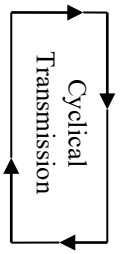
(2) Format 19: data on stocks suspended/resumed for trading of the day will be transmitted once every 10 minutes, which will be denoted by status C. Whenever there are newly added data on stocks suspended/resumed for trading of the day, data transmission will take place immediately denoted by status 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).

II. Example:

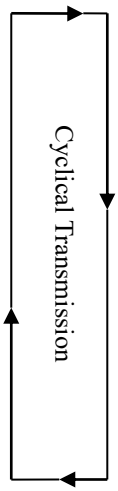
1. Format 19 starts to transmit at 08:00. Assuming there is no data on stocks suspended/resumed for trading at the beginning of the day, and Stock 2330 and Stock 2417 were suspended for trading at 09:12:00 and Stock 2330 resumed for trading at 11:57:00 while Stock 2417 did not resume trading on the same day, the transmission of data is shown below:

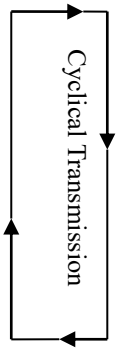




Transmission time	ESC-CODE	HEADER		BODY				CHECK	TERMINAL
	1	2.1~2.4	2.5	3.1	3.2	3.3	3.4	4	5
09:12:00			**00000001**	**2330**	**091200**	**999999**	**I**		
09:12:00			**00000002**	**2417**	**091200**	**999999**	**I**		
09:12:00			**00000003**	**000002**	**999999**	**999999**	**I**		
09:20:00			00000001	2330	091200	999999	C		
09:20:00			00000002	2417	091200	999999	C		
09:20:00			00000003	000002	999999	999999	C		
09:30:00			00000001	2330	091200	999999	C		
09:30:00			00000002	2417	091200	999999	C		
09:30:00			00000003	000002	999999	999999	C		
-……									
11:20:00			00000001	2330	091200	999999	C		
11:20:00			00000002	2417	091200	999999	C		
11:20:00			00000003	000002	999999	999999	C		
11:27:00			**00000001**	**2330**	**091200**	**115700**	**I**		
11:27:00			**00000002**	**000001**	**999999**	**999999**	**I**		
11:30:00			00000001	2330	091200	115700	C		
11:30:00			00000002	2417	091200	999999	C		
11:30:00			00000003	000002	999999	999999	C		
……									
17:00:00			00000001	2330	091200	115700	C		
17:00:00			00000002	2417	091200	999999	C		
17:00:00			00000003	000002	999999	999999	C		

2. Format 19 starts transmission at 08:00. Assuming Stock 2330, Stock 2331, Stock 2417, Stock 2882 were suspended from trading at the beginning of the day and Stock 2330 resumed trading before the beginning of transmission, Stock 2331 resumed trading at 08:12:00, Stock 2417 resumed trading at 09:43:00, and Stock 2882 did not resume trading on the day, the transmission of data will be shown below:





Transmission time	ESC-CODE	HEADER		BODY				CHECK	TERMINAL
	1	2.1~2.4	2.5	3.1	3.2	3.3	3.4	4	5
08:00:00			**00000001**	**2330**	**080000**	**080000**	**I**		
08:00:00			**00000002**	**2331**	**080000**	**081200**	**I**		
08:00:00			**00000003**	**2417**	**080000**	**999999**	**I**		
08:00:00			**00000004**	**2882**	**080000**	**999999**	**I**		
08:00:00			**00000005**	**000004**	**999999**	**999999**	**I**		
08:10:00			**00000001**	**2330**	**080000**	**080000**	**C**		
08:10:00			**00000002**	**2331**	**080000**	**081200**	**C**		
08:10:00			**00000003**	**2417**	**080000**	**999999**	**C**		
08:10:00			**00000004**	**2882**	**080000**	**999999**	**C**		
08:10:00			**00000005**	**000004**	**999999**	**999999**	**C**		
……									
09:10:00			00000001	2330	080000	080000	C		
09:10:00			00000002	2331	080000	081200	C		
09:10:00			00000003	2417	080000	999999	C		
09:10:00			00000004	2882	080000	999999	C		
09:10:00			00000005	000004	999999	999999	C		
09:13:00			**00000001**	**2417**	**080000**	**094300**	**I**		
09:13:00			**00000002**	**000001**	**999999**	**999999**	**I**		
09:20:00			00000001	2330	080000	080000	C		
09:20:00			00000002	2331	080000	081200	C		
09:20:00			00000003	2417	080000	094300	C		
09:20:00			00000004	2882	080000	999999	C		
09:20:00			00000005	000004	999999	999999	C		
……									
17:00:00			00000001	2330	080000	080000	C		
17:00:00			00000002	2331	080000	081200	C		
17:00:00			00000003	2417	080000	094300	C		
17:00:00			00000004	2882	080000	999999	C		
17:00:00			00000005	000004	999999	999999	C		

Format 20: Snapshot Data on Stocks for continuous trading in TWSE

Length (RL): Fixed length 47-146 bytes

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	“01”
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	StockCode	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 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.

I. 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 common stock transactions on stock market in PACK BCD “01” (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. Once the serial number reaches 99999999, the next sequence will reset to 0 for subsequent numbering.

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. 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 (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: 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 3.10 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 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.

iv. For government bonds, only data of the consigned purchasing price/volume (unit) of one bond are 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 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.

iv. For government bonds, only data of the consigned selling price/volume (unit) of one bond are displayed; i.e. Disclosed Item Remarks Bit 3-1=001.

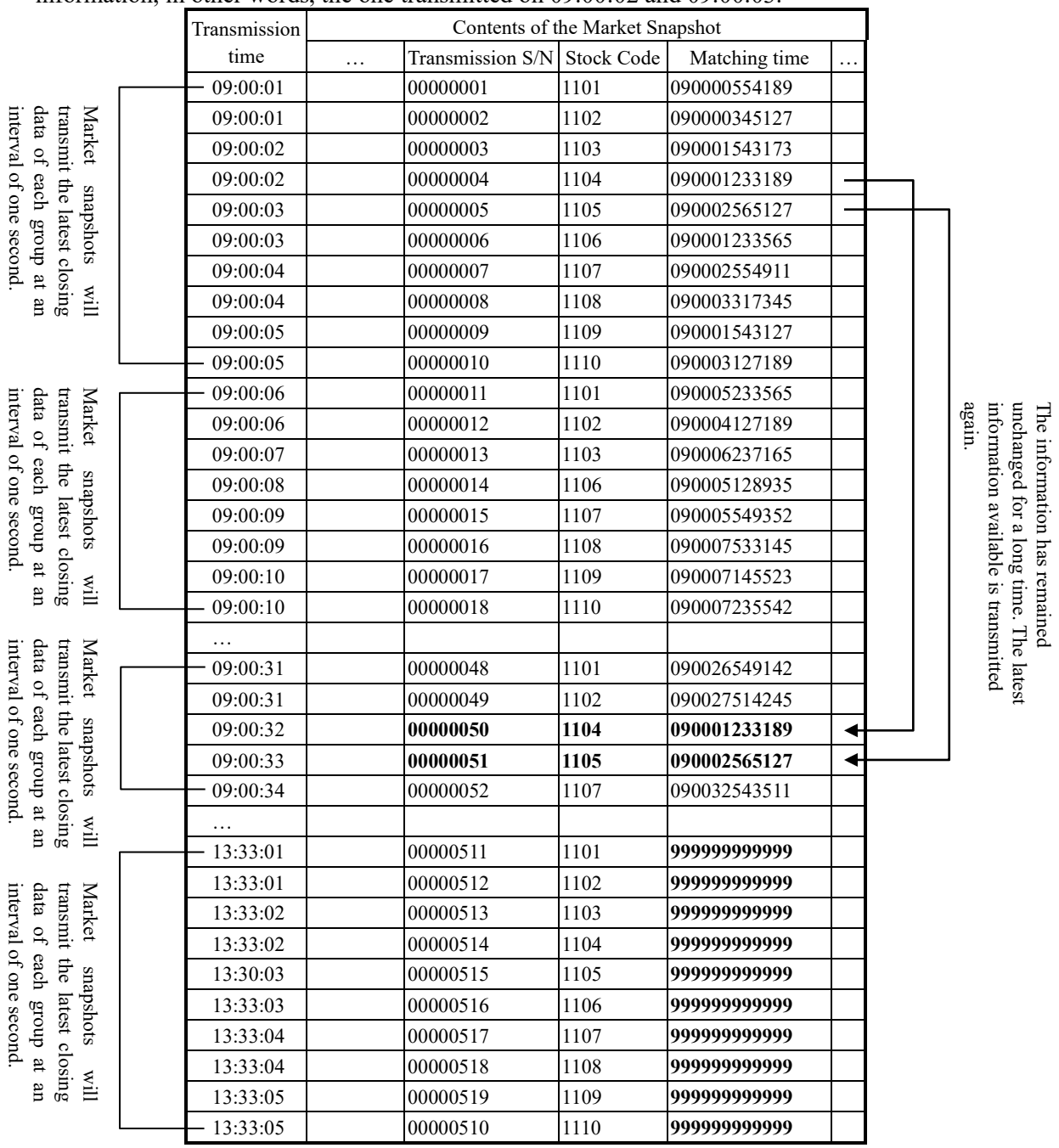
(5) For a trial match i.e. Status Remark Bit 7 = 1, the Real-time Quotes data is at the trial stage.

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.

II. Example:

1. Let's assume there are total 10 stocks traded in the stock market during the period of 08:30 to 13:30. The stock codes are, respectively, 1101, 1102, 1103…1110.
2. To optimize the transmission speed of the snapshots, the stocks will be grouped in pairs. There will be five groups in total. The data for each group will be transmitted at an interval of one second.
3. During the period of 09:00:01 to 09:00:05, the snapshots for ten stocks have been transmitted.
4. On 09:00:05, there is no change to the market information of stocks 1104 and 1105. No transmission is made.
5. During the period of 09:00:31 to 09:00:35 the market information of stocks 1104 and 1105 has remained unchanged for more than 30 seconds. The system therefore retransmitted the latest information, in other words, the one transmitted on 09:00:02 and 09:00:03.



Transmission time	Contents of the Market Snapshot				
	…	Transmission S/N	Stock Code	Matching time	…
09:00:01		00000001	1101	090000554189	
09:00:01		00000002	1102	090000345127	
09:00:02		00000003	1103	090001543173	
09:00:02		00000004	1104	090001233189	
09:00:03		00000005	1105	090002565127	
09:00:03		00000006	1106	090001233565	
09:00:04		00000007	1107	090002554911	
09:00:04		00000008	1108	090003317345	
09:00:05		00000009	1109	090001543127	
09:00:05		00000010	1110	090003127189	
09:00:06		00000011	1101	090005233565	
09:00:06		00000012	1102	090004127189	
09:00:07		00000013	1103	090006237165	
09:00:08		00000014	1106	090005128935	
09:00:09		00000015	1107	090005549352	
09:00:09		00000016	1108	090007533145	
09:00:10		00000017	1109	090007145523	
09:00:10		00000018	1110	090007235542	
…					
09:00:31		00000048	1101	090026549142	
09:00:31		00000049	1102	090027514245	
09:00:32		**00000050**	**1104**	**090001233189**	
09:00:33		**00000051**	**1105**	**090002565127**	
09:00:34		00000052	1107	090032543511	
…					
13:33:01		00000511	1101	**999999999999**	
13:33:01		00000512	1102	**999999999999**	
13:33:02		00000513	1103	**999999999999**	
13:33:02		00000514	1104	**999999999999**	
13:30:03		00000515	1105	**999999999999**	
13:33:03		00000516	1106	**999999999999**	
13:33:04		00000517	1107	**999999999999**	
13:33:04		00000518	1108	**999999999999**	
13:33:05		00000519	1109	**999999999999**	
13:33:05		00000510	1110	**999999999999**	

Format 21: Realtime Index Definition of TWSE

Length (RL): Fixed length 116 bytes

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	“01”
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	ASCII	
3.3	Index name in English	X (44)	44	61-104	ASCII	
3.4	Yesterday closing index	9 (06)V99	4	105-108	PACK BCD	
3.5	Opening index time	9 (04)	2	109-110	PACK BCD	
3.6	Closing index time	9 (04)	2	111-112	PACK BCD	
3.7	Format code of transferring index	9 (02)	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)	

Note:

I. 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: PACK BCD “01” represents common stock transactions in TWSE (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 everyday, and every format is numbered individually. All of the realtime index definitions of TWSE 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 TWSE 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 TWSE 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 “03”, it indicates that the realtime index is transferred by format 3: Statistics on Auction Indices of Common Stocks on the Stock Market. If the value is “10”, it indicates that the realtime index is transferred by format 10: Information of TWSE-compiled 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).

Format 22 : Basic Data of Intraday odd lot trading Stocks

Length (RL): Fixed length 60 bytes

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	“01”
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: 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 common stock transactions on stock market in PACK BCD "01" (length: 1 byte).

   2.3 Transmission Format Code: Expresses Format 22 in PACK BCD "22" (length: 1 byte).

   2.4 Transmission Format Version
      (1)Expressed in PACK BCD "08", where "08" means version 8 (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 common stocks on stock market are transmitted repeatedly with Format 1 before the market opens; and the basic data of new common 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 100 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 TWSE 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 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 Taiwan Stock 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: 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.

Format 23:Real-time Market Data of Intraday odd lot trading stock

Length (RL): Variable Length 34 ~ 155 Bytes

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	“01”
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	StockCode	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: 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 common stock transactions on stock market in PACK BCD “01” (length: 1 byte).
   2.3 Transmission Format Code: Expresses Format 23 in PACK BCD “23” (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. Once the serial number reaches 99999999, the next sequence will reset to 0 for subsequent numbering.

3. BODY: Variable length from 21 to 142 bytes.

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 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.

Format 24: Snapshot Data on call (put) warrant for continuous trading in TWSE

Length (RL): Fixed length 47-146 bytes

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	“01”
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	StockCode	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.

2.2 Business Type: Expresses common stock transactions on stock market in PACK BCD “01” (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. Once the serial number reaches 99999999, the next sequence will reset to 0 for subsequent numbering.

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.

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 (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: 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 3.10 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 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.

iv. For government bonds, only data of the consigned purchasing price/volume (unit) of one bond are 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 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.

iv. For government bonds, only data of the consigned selling price/volume (unit) of one bond are displayed; i.e. Disclosed Item Remarks Bit 3-1=001.

(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.

Format 25: Available Balance for Securities borrowing and lending

Length (RL): Fixed length 32 bytes

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	“01”
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)	

Description

I. 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: Common stock transactions on stock market is expressed in PACK BCD

“01” (length: 1 byte).

2.3 Transmission Format Code: Format 25 is expressed in PACK BCD “25” (length: 1 byte).

2.4 Transmission Format Version:

(1) Expressed in PACK BCD “01”, where “01” means version 1 (length: 1 byte).

(2) Versions are numbered from 1, and every format has an individual number.

2.5 Transmission S/N:

(1) The transmission S/N is expressed in PACK BCD (length: 4 bytes).

(2) Serial numbers are assigned in sequence from 1 every day, and each format is numbered independently.

3. BODY: A total length of 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(HHMMSSmmmμμμ).

(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.

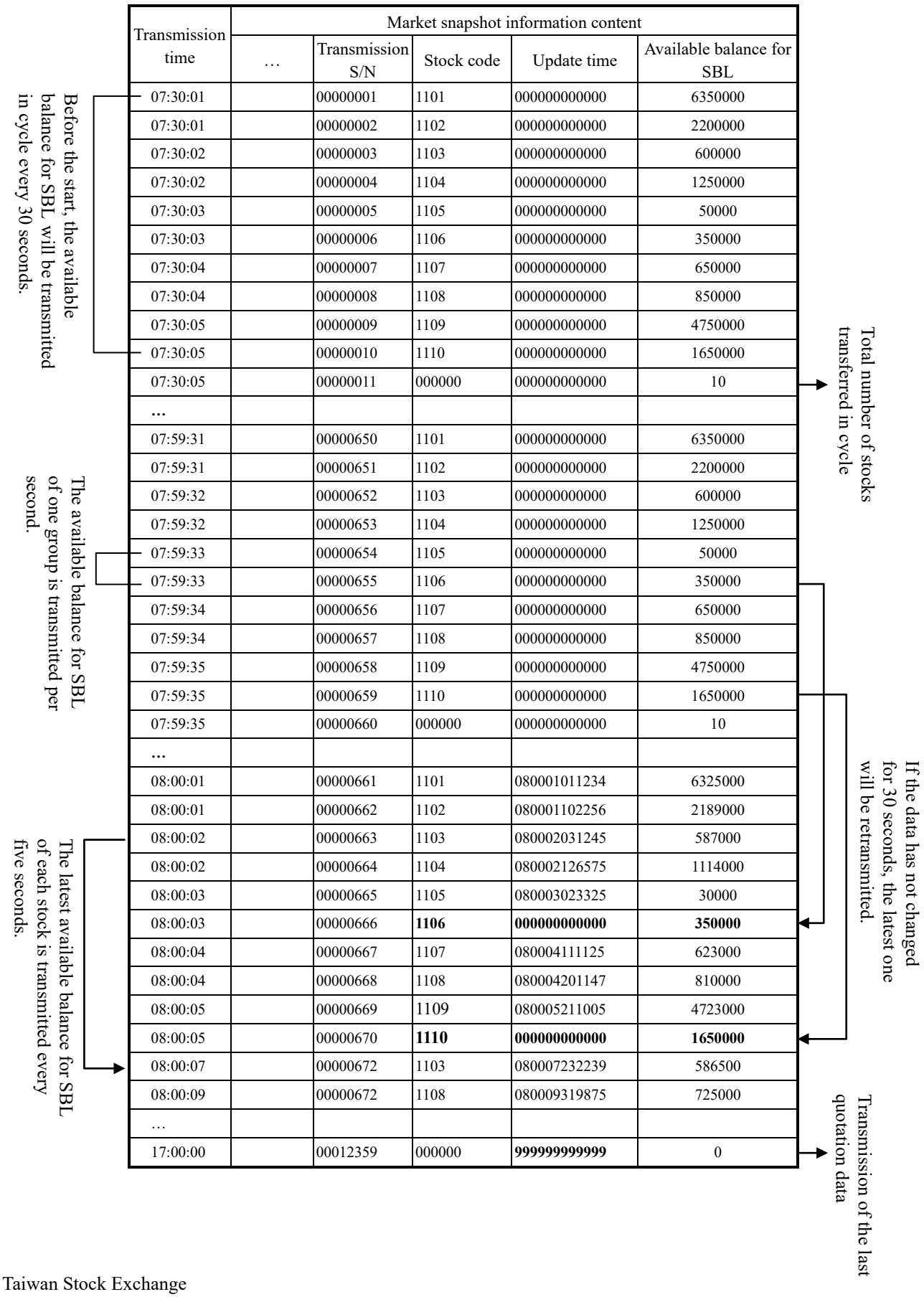
3.3 Available balance for SBL: 14 digits, expressed in PACK BCD (length: 7 bytes).

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

5. TERMINAL-CODE: The ending byte of every record, with the fixed value of HEXACODE:0D 0A.

II. Example:

1. Assume that there are 10 stocks in the stock market from 07:30 to 17:00, with stock codes of 1101, 1102, 1103.....1110 respectively.
2. Before 08:00, the available balance for SBL is transmitted in cycle, and the update time is "000000000000". If the stock code is "000000", it indicates the total number of stocks transmitted in cycle.
3 During the period of Market Data transmission, the available balance for 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 is not changed for a long time, then the latest information will be retransmitted within 30 seconds.
4. From 08:00:01 to 08:00:05, the information about the available balance for SBL of stocks 1101, 1102, 1103, 1104, 1105, 1107, 1108 and 1109 after the change is transmitted.
5. If the stock information of 1106 and 1110 transmitted at 07:59:33 and 07:59:35 has not changed for more than 30 seconds, then the latest available balance for SBL will be retransmitted at 08:00:03 and 08:00:05.
6. At 17:00:00, the last quotation data of the stock "000000" is transmitted, and the update time is "999999999999".


Transmission time
Market snapshot information content
…
Transmission S/N
Stock code
Update time
Available balance for SBL
07:30:01 00000001 1101 000000000000 6350000
07:30:01 00000002 1102 000000000000 2200000
07:30:02 00000003 1103 000000000000 600000
07:30:02 00000004 1104 000000000000 1250000
07:30:03 00000005 1105 000000000000 50000
07:30:03 00000006 1106 000000000000 350000
07:30:04 00000007 1107 000000000000 650000
07:30:04 00000008 1108 000000000000 850000
07:30:05 00000009 1109 000000000000 4750000
07:30:05 00000010 1110 000000000000 1650000
07:30:05 00000011 000000 000000000000 10
…
07:59:31 00000650 1101 000000000000 6350000
07:59:31 00000651 1102 000000000000 2200000
07:59:32 00000652 1103 000000000000 600000
07:59:32 00000653 1104 000000000000 1250000
07:59:33 00000654 1105 000000000000 50000
07:59:33 00000655 1106 000000000000 350000
07:59:34 00000656 1107 000000000000 650000
07:59:34 00000657 1108 000000000000 850000
07:59:35 00000658 1109 000000000000 4750000
07:59:35 00000659 1110 000000000000 1650000
07:59:35 00000660 000000 000000000000 10
…
08:00:01 00000661 1101 080001011234 6325000
08:00:01 00000662 1102 080001102256 2189000
08:00:02 00000663 1103 080002031245 587000
08:00:02 00000664 1104 080002126575 1114000
08:00:03 00000665 1105 080003023325 30000
08:00:03 00000666 1106 000000000000 350000
08:00:04 00000667 1107 080004111125 623000
08:00:04 00000668 1108 080004201147 810000
08:00:05 00000669 1109 080005211005 4723000
08:00:05 00000670 1110 000000000000 1650000
08:00:07 00000672 1103 080007232239 586500
08:00:09 00000672 1108 080009319875 725000
…
17:00:00 00012359 000000 999999999999 0
Before the start, the available balance for SBL will be transmitted in cycle every 30 seconds.
The available balance for SBL of one group is transmitted per second.
The latest available balance for SBL of each stock is transmitted every five seconds.
Total number of stocks transferred in cycle
If the data has not changed for 30 seconds, the latest one will be retransmitted.
Transmission of the last quotation data

4. Version Update Log

Data Format Version Update Log

Data/Version/Data Format	Format 1	Format 2	Format 3	Format 4	Format 5	Format 6	Format 7	Format 8	Format 9
2002/7/1	1	1	1	1	1	1	1	1	1
2003/5/5	2								
2004/1/3			2						
2008/12/8	3								
2009/07	4								
2010/07		2		2					
2011/03	5					2			2
2011/10	6								
2015/06						3			
2015/07	7								
2020/03	8					4			3
2021/06	9	3		3					
Data/Version/Data Format	Format 10	Format 11	Format 12	Format 13	Format 14	Format 15	Format 16	Format 17	Format 18
2002/7/1	1								
2003/ 6		1							
2003/12			1						
2005/09				1					
2008/07					1	1	1		
2009/07								1	1
2010/07									
2011/03				2				2	
2015/06			2					3	2
2016/06					2				
2020/03			3	3				4	3
Data/Version/Data Format	Format 19	Format 20	Format 21	Format 22	Format 23	Format 24	Format 25		
2011/03	1								
2019/12			1						
2020/03		1		1	1				

2022/06						1	1		

Information Transmission Manual Update Log

Version	Date	Update Contents
	21/02/99	Changed index calculation cycle from 5 minute to 1 minute once.
B.03	19/08/99	Format 5: In addition to general announcements, the transmission of emergency announcements was added, using S/N to classify general and emergency announcements: general announcement S/N began from “1” and emergency announcement S/N from “9001”.
B.04	28/01/00	Defines the transmission rules of after-hour fixed-price transaction information. No format was changed, except the addition of display time and description of meanings of information in different fields in all formats.
B.04.01	18/05/00	(1) Format 1: Added Stock Disposition Code (using the reserved bit) (2) Format 4: Produced statistics on the intraday consignment volume every minute. (3) Added government bond transaction information (originally Formats 1 and 6). (4) No format was changed; except the addition of display time and description of meanings of information in different fields in all formats.
B.04.02	24/07/00	Revised part of Format 6 to ensure every entry of data transmitted in Format 6 contain at the same time the purchasing, selling and trading prices at the same time to enhance information transformation efficiency.
B.04.03	12/10/00	Revised part of Format 7 to display the weighted index of non-electronic industry stocks in terms of 20 index items.
B.04.04	06/08/01	Revised Format 6 on 17 April 2001) to display purchasing, selling and trading prices and volume (sheet). The revised version was implemented officially on 6 August 2001.
B.05	01/07/02	1. Coordinating with the instantaneous price stabilizing policy, Format 6 was revised to display held match information and the best purchasing/selling price/volume. The revised Format 6 was implemented officially on 1 July 2002. 2. Coping with the needs of displaying the top five positions and high-speed information transmission, in addition to adding the HEADER field, the original formats 1-8 were combined to formats 1-6. The policy was implemented in the beginning of 2003.
B.05.01	02/06/03	1. The Stock Industry Category Cross-reference Table was revised to cope with the new stock coding rules. 2. As some stocks contain meanings that cannot be identified directly from the stock code (e.g. call/Callable Bear Contracts which were classified into proportional and un-proportional call/Callable Bear Contracts based on the original conversion ratio), the Stock Category field was added to identify such stocks. 3. The Strike Ratio field in Format 1 was enlarged. 4. Description of Statistics Time=999999 in formats 2 and 3 was revised. 5. The ETF Net Value field was added to Format 11.

B.05.02	12/03	Added Format 12 Information of Auction Opening (Closing) Price of Common Stocks on Stock Market.
B.05.03	20/10/04	1. Revised the government bond description in formats 1 and 6 and Appendix B and Appendix C: Stock coding rules to cope with the transaction rule change and exchange bond issue of government bonds. 2. Corrected text description in Format 10.
B.05.04	Revised on 03/01/05 Implemented on 01/03/05	1. Revised relevant descriptions in Format 3 after the issue of the Non-Financial and Non-Electronic Stocks Issuing Volume Weighted Index. 2. Revised the stock coding rules of Call/Callable Bear Contracts. 3. Revised the stock coding rules and descriptions of Government Bonds.
B.05.05	Revised on 29/04/05 Implemented in June 2004	Revised the description of Stock Anomaly Code and added flexible disposition judgment code.
B.05.06	Revised on 5/9/05 Implemented on 2/1/06	Revised the description in Format 3 for the termination of producing and transmitting Integrated Stock Price Average and Industrial Stock price Average.
B.06	Revised on 23/9/05 Implemented on 19/12/05	Added Format 13 Odd Lot Transaction Information on Stock Market.
B.06.01	Revised on 15/9/06 Implemented in 1/07	Updated Index Code Table, Appendix 5; added TWEI (Taiwan Eight Industries Index) and TWDP (Taiwan Dividend Plus Index).
B.07	Revised on 12/01/07 Implemented in 7/07	Adjusted the sequence of transmission index items and fields in Format 3 to cope with the re-allocation and adjustment of the industry categorization of listed companies.
B.08	Revised on 07/07/08 Implemented in October 2008	1. Revised Format 1 and added Stock Category field and definitions to cope with the listing of foreign enterprises in the TWSE. 2. Added the Full Name of Callable Bull(Bear) Contract data on stock market in Format 14. 3. Added Format 15 Information of Suspended Stocks on the Stock Market. 4. Added Format 16 Data Transmission System HeartBeat Data on Stock Market. 5. Cancelled the transmission of Format 11 and removed the format from the specification since the implementation of ETF net value calculation by investment trust.
B.08.01	Revised in December 2008 Implemented in March 2009	Revise the message length, format version, strike price and exercise rate fields in Format I for indexed warrants.
B.08.02	Revised in April 2009 Implemented in July 2009	Revise the definition of the offshore stock trading volume in Format I as the units in each stock transaction in the centralized market in supporting the trading of overseas ETF in less than 1,000 units as a trading lot in the future. The definitions of trading and trade order volume from “lot (1,000 shares) to “quantity” in Format II, IV, VI, VII, VIII, IX, and XII. The quantity of trade is the trading units of stock.

B. 09	Revised on 98/07	1. Revision of Appendix B on the Rules for Stock Code for the addition of subscription warrants. 2. Revision of Format 1, with the addition of Format 17 and Format 18 for the transaction of subscription warrants by transaction. (1)Revision of the message length, format version field of market information transmission Format 1, with the addition of the field for notes on market information line. (2)Addition of Format 17, 2nd IP on real time market information on trading of common stocks in the centralized market though bidding. (3)Addition of Format 18, 2nd IP on information on price at opening (close) on the trading of common stocks in the centralized market through bidding. (4)Addition of Attachment 6 in the table of Online Transmission Format.
B.09.01	Revised in November 2009 Implemented in December 2009	Revise Appendix B on the rules of stock code in supporting the addition of product code for beneficiary certificates, ETF and TDR products.
B.09.02	Implemented in April 2010	In the field "Corresponding Stock Code Sequential Number" of format 1, 6, 9, and 17, the method of using the sequential number is changed. When a specific stock was delisted, its code will be used by another stock when listing on the TSE.
B.09.03	Effective May 2010	Amendment to the attached Securities Codification Rules and notes to the fields of Format XIV in line with the newly added "Callable Bull(Bear) Contracts with foreign underlying assets" products and "extension of the codification of warrants".
B.09.04	Implemented in January 2011	Transmission rate of newly added format II and IV statistics and revised format II, III, and IV is adjusted to 15 seconds in responding to the "disclosure of index and consigned trade statistical information at 15 seconds" and " type of transaction and statistical information ".
B.09.05	Revised on January 2011 Implemented in March 2011	Updated version of Appendix E "TWSE-Compiled Index Table" with the addition of "EMP99, Taiwan Employment 99 Index"
B.10	Revised in March 2011 Implemented in August 2011	1. The field of "Stock Order Number" in Format 1, Format 6, Format 9, Format 13, and Format 17 has been adjusted, and replaced by "Stock Code". 2. Format 6 has been altered with the addition of trial calculation on matching and disclosure of delayed close of market. 3. Addition of Format 19- "Data on stocks suspended for trading" and adjustment of Appendix F in supporting the function of suspended/resumed trade during the trading hours. 4. Adjustment of Appendix B – "Stock coding rules" with the addition of Callable Bull/Bear Contracts".
B.10.01	Revised in October 2011 Implemented in January 2012	1. In order to accommodate the disclosures of "Stocks under the influences of abnormal recommendations on cable television", "Abnormal securities", and "Foreign companies' first listings on TSE with face values other than $10 per share", three new fields were added to Format 1, namely 3.1.10 – "Non-$10 face value indicator", 3.1.11 – "Abnormal recommendation indicator", and 3.1.12 – "Abnormal securities indicator". The version of the revised format was adjusted to 06, with record length adjusted to 76 Bytes. 2. Adjusted Appendix B: Stock Coding Rules
B.10.02	Revised in October 2012 Implemented in December 2012	Adjusted Appendix E: TWSE-Compiled Index Table increasing Taiwan RAFI(r) CO101 Index

B.10.03	Revised in January 2013	Following stock codification rules change, amending convertible bonds, exchangeable corporate bonds, and exchangeable financial bonds codes.
B.10.04	Revised in January 2014 Implemented in February 2014	Format 2, 3, 4, and 10 have been amended for transmitting frequence change from 15 seconds to 10 seconds.
B.10.05	Revised in March 2014 Implemented in May 2014	Adjusted Appendix E: TWSE-Compiled Index Table adding FORMOSA Index
B.10.06	Revised in June 2014 Implemented in August 2014	Adjusted Appendix E: TWSE-Compiled Index Table adding Taiwan HC 100 Index
B.10.07	Revised in July 2014 Implemented in July 2014	With the revision of "Principles for Assignment of Ticker Symbols in the Republic of China Securities Markets," Open-end Callable Bull and Bear Contracts, leveraged ETFs, inverse ETFs, and futures trust ETFs are added to Appendix II: Principles for Assignment of Ticker Symbols.
B.10.08	Revised in December 2014 Implemented in December 2014	Format 2, 3, 4, and 10 have been amended for transmitting frequence change from 10 seconds to 5 seconds.
B.10.09	Revised in January 2015 Implemented in April 2015 Revised in April 2015 Implemented in June 2015	1. The definition in the fields of Foreign Stock ID and Trading Currency Code in format 1 has been adjusted.(implemented in April 2015) 2. To remove the item of Foreign Stocks from Appendix B. (implemented in April 2015) 3. To increase Appendis G – Trading Currency Code. (implemented in April 2015) 4. To revise Appendix E-TWSE-Compiled Index Table, adding 2 kinds of index of "TWSE Electronics Daily Return Leveraged 2X Index" and "TWSE Electronics Daily Return Inverse -1X Index"
B.11	Revised in January 2015 Revised in April 2015 Implemented in June 2015	1. Formats 6,12,17,and 18 have been amended, focusing on disclosing trial trading price/volume and 5 best bid/ask price/volume data before market open and close. 2. Format 19 has been amended with adding the definition of the Full Market Suspension. 3. To revise Appendix E-TWSE-Compiled Index Table, adding an index of "TWSE Corporate Governance 100 Index" and deleting "TWSE RAFI® Taiwan Corporate Operation 101 Index".

B.11.01	Revised in July 2015 Implemented in September 2015 Implemented in October 2015	1. Updated Appendix E "TWSE Compiled Index Table", added "TAIEX Leveraged 2X Index" and "TAIEX Inversed -1X Index". (Implemented in September 2015) 2. Revised Format 1, Expanded the field length of the stock abbreviation in Chinese, added fields of " Day Trading Indicator", "Exemption of Unchanged Market Margin Sale Indicator", "Exemption of Unchanged Market Securities Lending Sale Indicator", "Matching Cycle Seconds", "Upper Limit Price", "Lower Limit Price" and "Maturity Date". (Implemented in October 2015) 3. Adjusted Format 6, 17 "Status Remarks" Field Definition, added Disclosure Open Close Remarks. (Implemented October 2015).
B.11.02	Revised in November 2015. Implemented in December 2015.	Updated Appendix E "TWSE Compiled Index Table", added " TWSE TAIEX Small-Cap 300 Sub-Index ". (Implemented in December 2015)
B.11.03	Revised in December 2015. Implemented in January 2016.	Updated Appendix E "TWSE Compiled Index Table", added "Finance Leveraged 2X Index " and “Finance Inverse-1X Index”. (Implemented in January 2016)
B.11.04	Revised in March 2016, Implemented in June 2016.	Coordinating with the securities abbreviation bytes expansion program, update the Field Description of the "Full-name Information of Callable Bull (Bear) Contracts on the Stock Market" (Format 14). (Implemented in June 2016)
B.11.05	Revised in July 2016, Implemented in July 2016.	Due to adding a new Index of “TIP TAIEX+ Dividend Appreciation 150 Index”, appendix 5 of TWSE-Compiled Index Table will be updated accordingly. (Implemented in July 2016)
B.11.06	Revised in August 2016, Implemented in August 2016.	Due to adding a new Index of “TIP TAIEX+ Dividend Appreciation 100 Index”, appendix 5 of TWSE-Compiled Index Table will be updated accordingly. (Implemented in August 2016)

B.11.07	Revised in December 2016, Implemented in January 2017.	Due to adding 6 new Indices of "TIP TAIEX+ Blue Chip 30 Index", " TIP TAIEX+ Industry Elite 30 Index", " TIP TAIEX+ IT Elite 30 Index", " TIP TAIEX+ Low Volatility Select 30 Index", " TIP TAIEX+ Low Beta 100 Index", and " TIP TAIEX+ Blue Chip 30 Index Daily Return Inverse -1X Index", appendix 5 of TWSE-Compiled Index Table will be updated accordingly. (Implemented in January 2017)
B.11.08	Revised in March 2017, Implemented in March 2017.	Due to adding 2 new Indices of "TIP TAIEX+ Small/Mid-Cap Select 50 Index", and " TIP TAIEX+ Small/Mid-Cap Alpha Momentum 50 Index", appendix 5 of TWSE-Compiled Index Table are updated accordingly. (Implemented in March 2017)
B.11.09	Revised in June 2017, Implemented in July 2017.	1.Due to adding 2 new Indices of "TIP TAIEX^{+} Customized High Dividend Minimum Variance Index", and " TIP Taiwan Market Biotechnology and Medical Care Index", appendix E of TWSE-Compiled Index Table are updated accordingly. (Implemented in July 10, 2017) 2.Due to ETF product code expansion, revising appendix B of Stock Coding Rules (Implemented in July 31, 2017).
B.11.10	Revised in August 2017, Implemented in September 2017.	Due to adding a new Index of "TIP TAIEX+ Industry Elite 30 Index Daily Return Inverse -1X Index" in th file spec, appendix E of TWSE-Compiled Index Table is updated accordingly. (Implemented in September 11, 2017)
B.11.11	Revised in November 2017, Implemented in December 2017.	Due to adding 2 new Indices of "TIP Customized Domestic Demand High Yield Price Index", and " FTSE4Good TIP Taiwan ESG Index" in the file spec, appendix E of TWSE-Compiled Index Table is updated accordingly. (Implemented in December 11 and 18, 2017, respectively)
B.11.12	Revised in January 2018, Implemented in March 2018.	Due to "Principles for Assignment of Ticker Symbols in the Republic of China Securities Markets" revised, the appendix B was updated accordingly. 1.Certificates of payment for shares, certificates of entitlement to new shares, certificates of entitlement to new shares from convertible bonds: A single English letter, from X to Z, is added following the four-digit ticker symbol. 2.Preferred stocks: An English letter, from A to W, is added following the four-digit ticker symbol.

B.11.13	Revised in April 2018, Implemented in May 2018.	Due to adding 3 new Indices of the “TIP Taiwan Market Small/Mid cap Corporate Governance Index,” “TIP Taiwan Market IPO Index”and ”TIP Value Investing 30 Index,” appendix E of TWSE-Compiled Index Table in the file spec is updated accordingly. (Implemented in May, 2018)
B.11.14	Revised in October, 2018, Implemented in April 2019.	Due to adding “exchange-traded note (ETN)”, the appendix B : Stock coding rules was updated accordingly.
B.11.15	Revised in November 2018, Implemented in December 2018.	1.Due to adding 5 new Indices of “DVA 150 Total Return Index”, “TIP H20 EWTR Index”,” TIP APL TR Index”,” TIP TWSM 300 Index”and ” TIP TWSM 300 TR Index”, appendix E of TWSE-Compiled Index Table in the file spec is updated accordingly. (Implemented in December, 2018)
B.11.16	Revised in January 2019, Implemented in February 2019.	1.Due to adding 2 new Indices of “ TIP PSHD 20 TR Index” and ” TIP Cap.Top 500 TR Index”, appendix E of TWSE-Compiled Index Table in the file spec is updated accordingly. (Implemented in February, 2019)
B.11.17	Revised in February 2019, Implemented in March 2019.	1.Due to adding 2 new Indices of “TIP FS 50 TR Index” and ” ITE 30 Total Return Index”, appendix E of TWSE-Compiled Index Table in the file spec is updated accordingly. (Implemented in March, 2019) 2. Due to some of indices names change, the appendix E of TWSE-Compiled Index Table updated accordingly.
B.11.18	Revised in September 2019, Implemented in December 2019.	1.Add a new format 21: Realtime Index Definition of TWSE 2.Appendix E: TWSE-Compiled Index Table is removed. The index information can be retrieved from the website of TWSE or TIP. 3.Due to adding the new Indices of “Taiwan Strategy Series Indices”, the transmission Sequence for the format 10 of the appendix A is updated accordingly.

B.12.00	Revised in October 2018, Revised in January 2019, Implemented in March 2020.	Revised in October, 2018 Implemented according to the expansion of each transaction and price field 1.Revised Formats 1, 6, 9, 12, 13, 17 and 18, expanding the price fields as 9(5)V9(4) 2.Added the description of market order price in Formats 6 and 17 3.Added the snapshot of stock market in Format 20 Revised in January, 2019 1. Revised Format 20, add 3 fields of opening price, the highest trading price and lowest trading price.
B.12.01	Revised in April, 2020 Implemented in October 2020.	According to the Intraday odd lot trading 1. Added format 22 : Basic Data of Intraday odd lot trading Stocks. 2.Added format 23 : Real-time Market Data of Intraday odd lot trading stock. Added appendix: Table of Transmission Setting. Removed appendix: TWSE-Compiled Index Table.
B.12.02	Revised in March 2021, Implemented in June, 2021.	According to the Taiwan Innovation Board 1. Added new field “Board Code” in format 1. 2. Added statistical information of Taiwan Innovation Board in format 2 and format 4.
B.12.03	Revised in March 2022, Implemented in April 2022.	Due to “Principles for Assignment of Ticker Symbols in the Republic of China Securities Markets” revised, the appendix B was updated for the addition of Strategy ETN.

B.12.04	Revised in May 2022, Implemented in June 2022.	Due to “Principles for Assignment of Ticker Symbols in the Republic of China Securities Markets” revised, the appendix B was updated accordingly. 1. Remove the item of New Share Entitlement Certificates, New Stock Right Certificates, Stock Share Payment Certificates. 2. Update the item of General Preferred Stocks: An English letter, from A to Y, is added following the four-digit ticker symbol. 3. Add the item of Exchangeable Preferred Stocks.
B12.05	Revision in February 2022, Implemented in June 2022.	Formats added 1. Format 24: Snapshot information of call (put) warrant auction trading in the centralized market. 2. Format 25: Available balance for SBL. Revised the format name. 1. Format 17: Real-time Auction Quotes of call (put) warrant on TWSE Market. 2. Format 18: Information of Auction Opening (Closing) Price of call (put) warrants on TWSE Market.
B.12.06	Revised in October 2022, Implemented in November 2022.	.Due to “Principles for Assignment of Ticker Symbols in the Republic of China Securities Markets” revised, the appendix B was updated accordingly. Update the item of Callable Bear Contract with domestic securities or index as underlying assets.

B.12.07	Revised in March 2023, Implemented in July 2023.	**Due to "Taiwan Stock Exchange Corporation Key Points for Classifying and Adjusting Categories of Industries of Listed Companies " is amended and takes effect on July 3, 2023.** **Appendix C:** ADD: 35.Green Energy and Environmental Services 36.Digital and Cloud Services 37.Sports and Leisure 38.Household UPDATE: 16. Tourism Industry to Tourism and Hospitality **Format 10:** Add transmission of Format 3 indices (including the newly added industry category index) **Format 3 :**maintains the current format **Format 21:**the value of format code of transferring index will be fixed 10
B.12.08	Revised in March 2024, Implemented in July 2024.	Format 3:" Statistics on Auction Indices of Common Stocks on the Stock Market" information have been transmitted in Format 10. The transmission of Format 3 has been cancelled, and removed the format from the specification
B.12.09	Revised in September 2024, Implemented in November 2024.	Due to “Principles for Assignment of Ticker Symbols in the Republic of China Securities Markets” revised, the appendix B was updated accordingly. Update the item of ETF(exchange traded fund): The ETF codes have been adjusted from five digits to six digits.
B.12.10	Revised in October 2024, Implemented in November 2024.	Due to “Principles for Assignment of Ticker Symbols in the Republic of China Securities Markets” revised, the appendix B was updated accordingly. Update the item of ETF(exchange traded fund): Adjust the starting code range for ETF codes.

B.12.11	Revised in January 2025, Implemented in March 2025.	Due to “Principles for Assignment of Ticker Symbols in the Republic of China Securities Markets” revised, the appendix B was updated accordingly. Adding stock type：Multi-Asset ETFs、Active ETFs and Bond Active ETFs.
B12.12	Revised in April 2026, Implemented in April 2026.	**Update the rule description for field "2.5 Transmission Serial Number" in Formats 6, 17, 20, 23, and 24:** Begins from 1 serially every day, and every format is numbered individually. Once the serial number reaches 99999999, the next sequence will reset to 0 for subsequent numbering.

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.07:40～08:50)
Format 2: System Time is transmitted once every 5 seconds.
Format 10: 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.07:40～08:50)

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.09:00～13:30）
Format 2: Trading information is transmitted once every 5 seconds.
Format 10: 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 12: Information of auction opening (closing) price of common stocks on stock market is transmitted at every 10 minutes intraday and every 5 minutes after hour (until 14:00).
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 the TWSE market 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.09:00～13:30)
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.

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 minutes 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 minutes.
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 10: New Taiwan indices are transmitted once every 5 seconds from 08:00-14:30.
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: Data of the full name of Callable Bull(Bear) Contracts on stock market are transmitted during 14:30-16:00. Data of the full name of Callable Bull(Bear) Contracts on stock market are transmitted once every 10 minutes after 14:30, until 16:00.

Format 16: The HeartBeat data of the stock market 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 stocks suspended/resumed for trading in TWSE will be transmitted during 08:00-17:00. Data 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

(1) A stock code is expressed in ASCII code, 6 bytes

Stock Type	Stock Code					
	byte 1	Byte 2	Byte 3	byte 4	byte 5	byte 6
Beneficiary Certificate (note 1)	0	0	0 | 3	0 | 9	0 | 9	0 | 9
ETF(exchange traded fund) (note 1)	0	0	4 | 9	0 | 9	0 | 9	0 | 9
ETF(denominated in foreign currencies)						K
Bond ETF						B
Bond ETF(denominated in foreign currencies)						C
Multi-Asset ETFs						T
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
Active ETFs						A
Bond Active ETFs						D
Real Estate Asset Trust Beneficiary Securities	0	1	0 | 9	0 | 9	0 | 9	P
Financial Asset Securitization Beneficiary Securities						S
Real Estate Investment Trust Beneficiary Securities						T
ETN	0	2	0 | 9	0 | 9	0 | 9	0 | 9
Bond ETN	0	2	0 | 9	0 | 9	0 | 9	B
Leveraged ETN						L
Inverse ETN						R
Strategy ETN						S
Callable Bull Contract with domestic securities or index as underlying assets.	0	3 | 8	0 | 9	0 | 9	0 | 9	0 | 9
Callable Bear Contract with domestic securities or index as underlying assets.	0	3 | 8	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
Common Stocks	1	0	0	0		

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	9	9	9	9		
Depository Receipt (note 1)	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
General Preferred Stocks	Original Code				A|Y	
Preferred Stocks with Warrants	Original Code				G	A|C
Debentures with Warrants	Original Code				G	D|L
Subscription warrants	Original Code				G	1|9
Cooperate Bonds of Performed Debentures with Warrants	Original Code				F	1|9
Exchangeable Preferred Stocks	Original Code				Z	1|9
Convertible Bonds	Original Code				1|9	Void, 0|9
Exchangeable Corporate Bonds, Exchangeable Financial Bonds	Original Code				0	1|9
Government Bonds	A C D	0|9	0|9	0|9	0|9	0|9
Foreign Securities	F	—	—	—	—	—

Note 1: The previous 6-digit principle of codification for close-end fund certificates, ETF, TDR is applicable to securities listed in the exchange after December 15 2009. Stock code previously

assigned is still in 4-digit. Stock code defined as 9201~9299 under TDR remains unchanged.

The ETF coding rule is applicable only to securities listed after November 18, 2024. The previously assigned security codes, including five-digit numbers (applicable to securities listed after June 24, 2014), as well as four-digit or six-digit numbers (applicable to securities listed before June 24, 2014), will remain their original coding rules without reassigning new codes.

(2) Government Bond Coding Rules (6 codes)

□□□□□□

1 2 3 4 5 6

1. Code 1 is a letter: A- Central Government Bond; C-Taipei City Government Bond; D-Kaohsiung City Government Bond
2. Codes 2-3 represent year, e.g. 93, 94, 95 etc.
3. Code 4 represents bond type.
4. Codes 5-6 represent period, e.g. 01, 02, 03 etc.

Note 2: The stock code starts 09 is preserved.

Appendix C: Stock Industry Category (Cf Format 1 3.1.3)

(1) Codes 1 and 4 of government bonds are the identity code of the bond's industry category.

(2) 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	Industry Category Code	Industry Category
01	Cement Industry	12	Automobile Industry	23	Oil, Gas and Electricity Industry	36	Digital and Cloud Services
02	Food Industry	14	Building Materials and Construction Industry	24	Semiconductor Industry	37	Sports and Leisure
03	Plastic Industry	15	Shipping and Transportation Industry	25	Computer and Peripheral Equipment Industry	38	Household
04	Textiles Industry	16	Tourism and Hospitality	26	Optoelectronic Industry		
05	Electric Machinery Industry	17	Finance and Insurance	27	Communications and Internet Industry		
06	Electrical and Cable Industry	18	Trading and Consumers Goods Industry	28	Electronic Parts/ Components Industry		
08	Glass and Ceramics Industry	19	General Industry	29	Electronic Products Distribution Industry		
09	Paper and Pulp Industry	20	Other Industry	30	Information Service Industry		
10	Iron and Steel Industry	21	Chemical Industry	31	Other Electronic Industry		
11	Rubber Industry	22	Biotechnology and Medical Care	35	Green Energy and Environmental Services		

Appendix D: Stock Category Code Table (Cf Format 1 3.1.4)

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	224.0.100.100	10000
		224.0.200.200	20000
2nd IP	Real-Time Market Data of Call (put) warrant and basic data	224.2.100.100	10002
		224.2.200.200	20002
3rd IP	Snapshot Data of stock、Call (put) warrant and basic data	224.4.100.100	10004
		224.4.200.200	20004
4th IP	Other Data (basic data、statistics、announcement、available balance for SBL…etc)	224.6.100.100	10006
		224.6.200.200	20006
5th IP	Real-Time Market Data and basic data of Intraday odd lot trading stock	224.8.100.100	10008
		224.8.200.200	20008

Appendix F: Table of Online Transmission Formats

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

Currency code	CNY	JPY	KRW	USD	CAD	GBP	EUR	SEK	AUD
Country	China	Japan	S.Korea	US	Canada	UK	Europe Zone	Sweden	Australia
Currency code	HKD	SGD							
Country	HK	Singapore							