HYPERCOM
“THE SYSTEM”

MESSAGE SPECIFICATIONS

VERSION 3.07

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HYPERCOM ASIA LTD.

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AMENDMENT RECORD

No.	Version	Date of Release	Amendment Details
1	3.00	1/2/94	Document Formatted from version 2.32. Added the reconciliation totals to private use field 63, Additional Data.
2	3.01	28/2/94	The processing code table in section 5.1 incorrectly showed the initialization processing code as 90 00 00. Changed to correct value of 93 00 00
3	3.02	17/3/94	Added definitions for all the fields used in the Hypercom® implementation of ISO 8583.
4	3.03	12/4/94	Added example to illustrate the decoding of an ISO-8583 message including the bit map.
5	3.04	28/4/94	Added message format, in private use field 63, to support CPS 2000 and a variable length, host formatted reference data.
6	3.05	17/5/94	Added private use field 63 definition for signature capture data. Redefined table id.'s for private use field 63's CPS 2000 data host reference data and signature data.
7	3.06	25/5/94	Added private use field definition for additional prompts data.
8	3.07	7/7/94	Removed Reconciliation Response Text section in Private Use Field 62 definition. Added Private Use field 62 definition for obtaining debit and MAC key in a logon response.

CONTENTS

1. INTRODUCTION

Services of the financial industry include the exchange of electronic messages relating to financial transactions. Traditionally, agreements on applications are usually at a private level. Proprietary formats and network interfaces result in higher equipment and transaction costs for all users and apparent competitive advantages are fleeting.

There are compelling reasons (of reliability, cost reduction, flexibility, response time improvement and networking options to minimize on-going communications costs) for supporting an International standard format and message discipline and the associated end-to-end high level communications protocols -

Few networks today have more than 10% of their eventual terminal numbers deployed and, therefore, format and protocol conversion is not the major overhead it will become when terminal populations increase by more than 900% and transaction volumes by many times that percentage, particularly at peak times;

Standardization of terminal interface specifications enables continuing refinement and improvement and results in lower cost equipment from all suppliers for all purchasers while not weakening the competitive aspects of terminal design, function, and cost - the network interface is the standard; and

As incorporation of EFT facilities in retailers' POS systems becomes the norm, as opposed to stand-alone terminals, the need for a standard network interface becomes even more critical.

Hypercom® terminals use an implementation of the International Organization For Standardization's International Standard **ISO 8583 - Bank Card Originated Messages - Interchange Message Specifications - Content For Financial Transactions.** Versions of this implementation have been in use with Hypercom® customers since 1984.

1.1. About This Manual

This document specifies the message structure and data elements, and their values, required for an effective interface for electronic value (and other) financial transaction messages between card accepting POS (Point Of Service) and card acquiring organizations.

2. MESSAGE STRUCTURE

The structure of a terminal/host message consists of three major parts; the header, application data, and the CRC. The header and CRC envelop the application data and is used for routing and message integrity.

HEADER					APPLICATION DATA			CRC	
ADR	CB	TPDU			Msg. Type	Bit Map	Data Elements		
		Id	Destination Address	Originator Address					
		1	2	2	2	8	0-230		bytes
1	1	5			10-240			2	

2.1. Header

ADR HDLC (SDLC) poll address (Normally 30h)
CB HDLC control byte
TPDU Transport Protocol Data Unit

HEADER					APPLICATION DATA			CRC	
ADR	CB	TPDU			Msg. Type	Bit Map	Data Elements		
		Id	Destination Address	Originator Address					
		1	2	2	2	8	0-230		bytes
1	1	5			10-240			2	

2.1.1. Transport Protocol Data Unit (TPDU)

The TPDU contains addressing information related to both the transaction destination (host application process or network address) and the transaction originating device (Terminal or POS system). The TPDU is a 5-byte header that precedes the application data.

HEADER					APPLICATION DATA			CRC	
ADR	CB	TPDU			Msg. Type	Bit Map	Data Elements		
		Id	Destination Address	Originator Address					
		1	2	2	2	8	0-230		bytes
1	1	5			10-240			2	

Request TPDU

TPDU Id	Identifies TPDU type 60h - Transactions 68h - NMS/TNMS
Destination Address	Network International Identifier
Originator Address	Identifies the individual terminal or process originating the transaction.

Response TPDU

TPDU Id	Identifies TPDU type - Same value as in the request message.
Destination Address	Same as Originator address from request message.
Originator Address	Same as Destination address in request message.

2.2. CRC

CRC HDLC checksum (CCITT CRC)

HEADER					APPLICATION DATA			CRC	
ADR	CB	TPDU			Msg. Type	Bit Map	Data Elements		
		Id	Destination Address	Originator Address					
		1	2	2	2	8	0-230		bytes
1	1	5			10-240			2	

2.3. Application Data Structure

Each application message consists of three components in the following sequence; Message Type Identifier, Bit Map, and a variable number of data elements. The maximum data content of a message is 240 bytes.

HEADER					**APPLICATION DATA**			CRC	
ADR	CB	TPDU			Msg. Type	Bit Map	Data Elements		
		Id	Destination Address	Originator Address					
		1	2	2	2	8	0-230		bytes
1	1	5			10-240			2	

2.3.1. Message Type Identifier

The Message Type Identifier (Msg. Type) consists of four (4) digits and is used to define the message type of the transaction.

The first and second digits identify the class of message. The third and fourth digits identify the message function and transmission mode:

Digits 1 and 2	Message Class	Digits 3 and 4	Transmission Mode
01	Authorization	00	Interactive request
02	Financial	10	Interactive response
03	File update/transfer	20	Non-interactive advice
04	Reversal	30	Non-interactive advice response
05	Reconciliation control		
06	Administrative		
08	Network management		

The following Message Type Identifiers are used:

Message Type	Application
0100 0110 0120 0130	Authorization Request Authorization Request Response Authorization Advice Authorization Advice Response
0200 0210 0220 0230	Financial Transaction Request Financial Transaction Request Response Financial Transaction Advice Financial Transaction Advice Response
0320 0330	File Update/Transfer Advice File Update/Transfer Advice Response
0400 0410	Reversal Request Reversal Request Response
0500 0510	Card Acceptor Reconciliation Request Card Acceptor Reconciliation Request Response
0800 0810	Network Management Request Network Management Request Response

2.3.2. Bit Map

ISO 8583 uses a concept called "bit map", where each data element is assigned a position indicator in a control field, or bit map. The presence of a data element in a specific message is indicated by a one (1) in the assigned position; the absence of a data element is indicated by a zero (0) in the assigned position.

Each application transaction includes one (1) bit map. A bit map consists of 64 bits numbered from the left starting with bit 1.

The first bit of the bit map represents a secondary bit map. The Hypercom® terminal does not support secondary bit map processing, therefore, the first bit of the bit map is always '0'.

bit	**1**	**2**	**3**	**4**	**••••**	**64**
	Field 1 Secondary bit map Always '0'	Field 2 Primary Acct No.	Field 3 Processing Code	Field 4 Amount, Trans		Field 64 Message Auth Code

2.3.3. Data Elements

Data Element characteristics - names, formats, attributes, conditional code values - are described fully in the ISO 8583 specifications.

The following rules apply to the data elements within a message:

- All data elements begin on a byte boundary.
- Fixed length "n" type fields with an odd length are right-justified to a byte boundary, and zero-filled on the left. For example, a field type "n3" field will occupy 2 bytes, and the most significant nibble of the first byte will be 0.
- All lengths for variable length fields are represented in binary coded decimal (BCD), right-justified to a byte boundary, and zero-filled on the left. For example, an 'LLVAR' field with a length of 15 will have a length indicator of '15h' occupying one byte. An 'LLLVAR' field with a length of 15 will have a length of 15 and have a length indicator of '0015h', occupying two bytes.
- The length indicator for a variable length field is a count of the number of data elements to follow. It does not include the length of the length indicator.
- Variable length n fields with an odd length are left justified within the field, and zero-filled.

3. TRANSACTION DATA FORMATS

The following table shows the fields from the ISO 8583 specification implemented in the Hypercom® family of terminals. This section will describe the use of the following table and define each field.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4			
	Bit Map	b 64			
02	Primary Acct. Num.	n ..19			
03	Processing Code	n 6			
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6			
12	Time, Local Trans.	n 6			
13	Date, Local Trans.	n 4			
14	Date, Expiration	n 4			
22	POS Entry Mode	n 3			
24	NII	n 3			
25	POS Condition Code	n 2			
35	Track 2 Data	z ..37			
37	Retrieval Ref. No.	an 12			
38	Auth. Id. Response	an 6			
39	Response Code	an 2			
41	Terminal Id	ans 8			
42	Card Acq. Id	ans 15			
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..75			
52	PIN Data	b 64			
54	Additional Amounts	an ...120			
60	Private Use	ans ...999			
61	Private Use	ans ...999			
62	Private Use	ans ...999			
63	Private Use	ans ...999			
64	Message Auth. Code	b 64			

The first two columns, (Bit, Data Element Name) show the data element assignment to a bit position, refer to Table 2 ISO 8583. The following sections will define the use of each field.

The Attribute lists the format and size of the data element. The size of the field is the number of data elements contained in the field. Variable length fields are shown with preceding "." characters indicating the number of variable length digits. (...999 defines a field whose maximum length is 999 data elements.) The following table defines each attribute.

Attribute	Meaning
a	Alpha characters (a-z, A-Z) Each data element represents 1 byte
an	Alpha-numeric characters (1-9, a-z, A-Z) Each data element represents 1 byte
ans	Alpha-number and special characters (All characters) Each data element represents 1 byte
b	Binary data Each data element represents 1 bit. (8 data elements = 1 byte)
n	Numeric data Each data element represents 1 nibble (2 data elements = 1 byte)
z	Track 2 data, as read from the magnetic strip. Each data element represents 1 nibble (2 data elements = 1 byte)

The "Request" and "Response' columns show the contents of the terminal request and response messages comprising a transaction. These contents can be one of the following:

M	Mandatory
O	Optional
Cxx	Conditional field, where xx is:
01	The Primary account number is included when the transaction is entered manually via the keyboard.
02	The expiration date field will be included if the card number was entered manually, and the card processing options are set to accept a date, expiration to be entered.
03	For on-line transactions when the account number is read from the magnetic stripe reader track I and/or track II will be included.
04	Terminal only stores the primary account number and expiration date from a track read. Any transactions processed other than an on-line transaction will include the primary account number and expiration date.
05	The first two digits of the POS entry mode will be set to '02' if the card is read by the card reader, and '01' if the card number is entered via the keyboard. The last digit will indicate the PIN entry capability of the terminal. It will have a value of '1' if there is PIN entry capability, and '2' if there is no PIN entry capability. This information should be treated as additional transaction information, and not use to determine which field to use for the card number.
06	Some check guarantee services use primary account numbers for data. If account number is entered manually the bit 2 will be included in the request. If the account number is read via the magnetic card reader then either track 1 and/or track II will be included.

3.1. Message Type / Processing Code Table

The following is a table specifying the message type and processing code for each transaction type.

Transaction	Message Type	Processing Code
Authorization Pre-Authorization Balance Inquiry Card Verification	0100	00 a0 0x 30 a0 0x 31 a0 0x 38 a0 0x
Sale Refund Cash Sale & Cash Void, debit, on-line Void, credit, on-line	0200	00 a0 0x 20 a0 0x 01 a0 0x 09 a0 0x 02 a0 0x 22 a0 0x
Off-line Sale Off-line Refund Sales Completion Adjust, Debit Adjust, Credit Guaranteed Late Arrival	0220	00 a0 0x 20 a0 0x 00 a0 0x 02 a0 0x 22 a0 0x 90 a0 0x
Reversal	0400	Same as original transaction
Settlement Request Settlement, after upload	0500	92 00 0x 96 00 0x
Batch upload Signature Data	0320 0320	Same as original transaction 90 00 0x
Initialization Statistics Logon Test Transaction	0800	90 00 0x 91 00 0x 92 00 0x 99 00 0x
Please Wait Advice	0830	90 00 0x

a = Account Selection
x = Processing / Flow control

3.2. Primary Account Number, Field 2

The Primary Account Number (PAN) contains the card account number when track I or track II is not available. The terminal does not store the track information in the journal, therefore, the PAN is sent on all advice messages (i.e. adjust, off-line, etc.).

3.3. Processing Code, Field 3

The processing code is used in conjunction with the message type to define the type of transaction being sent by the terminal to the host. It also includes account selection information. (See the previous section Message Type / Processing Code Table for processing code definitions).

3.3.1. Account Selections

The account information is represented in the third digit of the processing code. The following values are used:

Code	Account Selected
0	Default Account
1	Savings Account
2	Checking Account
3	Credit Facility
4	Universal Account

If the account select option is set on for the card, the customer is prompted for an account selection on the PIN pad. The code selected by the customer is included in digit 3 of the processing code.

If the account select option is set off for the card, the terminal includes the default account type from the card definition table in digit 3 of the processing code.

3.3.2. Processing / Flow Control Definition

In responses from the host to the terminal, the host normally uses the processing code from the request message in the response message. However, there is provision for the host to convey extra information to the terminal in the processing code in the response message. This information may be conveyed using the bits of the last digit of the processing code. The host should only set one of these bits at a time.

Bit	Bit Definition	Description
MSB 3	unused	
2	Initialize After Transaction	This bit, when set, instructs the terminal to perform an Initialization transaction at the first possible opportunity. This bit can be used by the host to force the terminal to request a new parameter load when updates have been made to the database.
1	Force Close Batch Request	This bit, when set, causes the terminal to display a message to the merchant that the batch should be closed. The merchant is not allowed to perform transactions, and is only allowed to close the batch. Failure to close the batch may cause discrepancies between Host batch totals and Terminal batch totals.
0	More Messages Indicator	Indicates that there are more messages to be sent. This is used in the Initialization response to the terminal to tell the terminal to send another Initialization request message to allow the host to load the next block of the initialization data to the terminal. This bit should be clear in the last block from the host. When the terminal is uploading a batch to the host, the terminal will also set this bit in all upload transactions, except the last one, which will have the bit clear. This indication can be used by the host to detect the end of the batch upload.

3.4. Amount, Transaction, Field 4

The transaction amount is the total of the transaction. When processing in the restaurant environment, the base amount of the transaction is calculated by subtracting the tip amount from the transaction amount.

3.5. Systems Trace Audit Number, Field 11

The systems trace audit number (STAN) is generated automatically by the terminal. It is incremented for each transaction processed. The STAN is required in the response as it is used to validate the response. The STAN should be used only as a method of identifying a transaction. The STAN should not be used as a means of determining lost messages as the reversal processing handles transactions that time out. The terminal will never generate a STAN of 000000.

3.6. Time, Local Transaction, Field 12

The time stamp of the transaction when it originally was entered. This time stamp is permanent, it does not change on subsequent transactions (i.e. adjust).

3.7. Date, Local Transaction, Field 13

The date stamp of the transaction when it originally was entered. This date stamp is permanent, it does not change on subsequent transactions (i.e. adjust).

3.8. Date, Expiration, Field 14

The expiration date of the PAN. This is included when the track I or track II data is not present. The expiration date is included as part of the track data when track data is present. The terminal does not store the track information in the journal, therefore, the PAN is sent on all advice messages (i.e. adjust, off-line, etc.).

3.9. Point of Service (POS) Entry Mode, Field 22

The POS entry mode is used to indicate how the primary account number was entered into the terminal.

Positions 1 & 2	PAN entry mode	Position 3	PIN entry capability
00	Unspecified	0	Unspecified
01	Manual	1	PIN entry capability
02	Magnetic stripe	2	No PIN entry capability

3.10. Network International Identifier (NII), Field 24

The NII is used to identify the acquiring host. It is set in the acquirer initialization table.

3.11. Point of Service (POS) Condition Code, Field 25

The POS condition code is used to identify the condition which the transaction takes place.

Code	Meaning
00	Normal presentment
06	Pre-authorized request Sales Completion
08	Mail and/or telephone order

3.12. Track II Data, Field 35

The track II data field is present when valid track II is used to initiate the transaction. It contains the track II image excluding the start sentinel, end sentinel and LRC characters.

When the transaction is placed in the journal, the PAN and expiration date is extracted from the track data and stored.

3.13. Retrieval Reference Number (RRN), Field 37

The RRN is assigned by the host. The terminal stores the reference number and includes it on any advice transactions. If an advice receives a new RRN the terminal will replace the old RRN with the new value.

3.14. Authorization Identification Response, Field 38

Usually referred to as the "approval code." Assigned by the authorization host when the transaction is approved.

3.15. Response Code, Field 39

Returned to the terminal from the authorization host to indicate the status of the transaction. A '00' response code indicates an approval status. All other values are non-approval or error responses. Refer to section 6 for valid response codes.

3.16. Card Acceptor Terminal Id., Field 41

The terminal id used to uniquely identify the terminal. It is loaded to the terminal in the acquirer table.

3.17. Card Acceptor Acquirer Id., Field 42

The merchant number assigned to the terminal. It is loaded to the terminal in the acquirer table.

3.18. Card Acceptor Acquirer name, Field 43

The name of the establishment. This field is typically not used. The name and address for the printer is loaded in the terminal configuration table.

3.19. Track I Data, Field 45

The track I data field is present when valid track II is used to initiate the transaction. It contains the track I image excluding the start sentinel, end sentinel and LRC characters.

When the transaction is placed in the journal, the PAN and expiration date is extracted from the track data and stored.

3.20. Personal Identification Number (PIN) Data, Field 52

PIN data as received from the PIN pad. The terminal is not itself a secure device, therefore, the terminal does not process PIN data. The terminal simply passes the PIN data as received from the PIN pad.

3.21. Additional Amounts, Field 54

The additional amounts field contains other amounts associated with the transaction. When processing restaurant transactions this field contains the tip. When processing debit transactions with cash back processing this field contains the cash back amount.

3.22. Private Use Fields

Use has been made of private fields to provide for Data Elements not included in ISO 8583 and these are defined in the following section, and referenced in the message format section.

Field	Name	Applicable Message Type
60	Batch Number Software ID Original Message Data Terminal Configuration Parameters (T4/T6) Original Amount	0500 0800 0320 0810 0220
61	Product Codes Card Definition Tables (T4/T6)	0100, 0200, 0220, 0320 0810
62	Invoice/ECR Reference Number Logon Data Product codes (T4/T6 Table Load to Terminal)	0100, 0200, 0220, 0320 0810 0810
63	Check Data Host Response Text Reconciliation Request Totals Terminal Statistics Lodging Details Additional Data	0100 0110, 0210, 0510 0500 0800 0220 0100, 0200, 0220, 0320, 0110, 0210, 0230, 0310, 0500, 0510, 0810

3.22.1. Private Use Field 60

The following defines the use of each private use field 61.

Batch Number

Message Type: 0500

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	0LLL - BCD length of data to follow
Batch Number	ans	6	6	

Software ID

Message Type: 0800

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	0LLL - BCD length of data to follow
Software Name	ans	7	7	
Revision Level	ans	3	3	
DLL Revision	n	1	1	From last initialization

Original Message Data

Message Type: 0320

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	0LLL - BCD length of data to follow
Original Message Type	an	4	4	Message type of original transaction
Original System Trace Audit Number	an	6	6	Trace number of original transaction
Reserved	an	12	12	Space fill - Reserved for future use.

Terminal Configuration Parameters (T4/T6)

Message Type: 0810

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	0LLL - BCD length of data to follow
Initialization data				See Initialization document for details

Original Amount

Message Type: 0220

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	0LLL - BCD length of data to follow
Original Amount	an	12	12	Original amount of the transaction being adjusted

3.22.2. Private Use Field 61

The following defines the use of each private use field 61.

Product Codes

Message Type: 0100, 0200, 0220, 0320

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	0LLL - BCD length of data to follow
Product Code 1	ans	2	2	1st selected descriptor code
Product Code 2	ans	2	2	2nd selected descriptor code, space fill if none
Product Code 3	ans	2	2	3rd selected descriptor code, space fill if none
Product Code 4	ans	2	2	4th selected descriptor code, space fill if none

Card Definition Tables (T4/T6)

Message Type: 0810

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	0LLL - BCD length of data to follow
Initialization data				*See initialization document for details*

3.22.3. Private Use Field 62

The following sections define the use of each private use field 62.

Invoice/ECR Reference Number

Message Type: 0100, 0200, 0220, 0320

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	0LLL - BCD length of data to follow
Invoice/ECR reference number	an 6	6	Invoice number as entered by the operator or generated automatically by the terminal.

Logon Data

Message Type: 0810

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	0LLL - BCD Length of data to follow
PIN Working Key	b 64	8	Encrypted with terminal master key. If this field is ' 00000000' then the current PIN working key is unaffected
MAC Working Key	b 64	8	Encrypted with terminal master key. If this field is '00000000' then the current PIN working key is unaffected
Merchant Name	ans 69	69	Printable ASCII characters for the first three lines and address of the receipt; each line has 23 characters. No carriage return or line feed characters are to be included. If the first character is 00h, the terminal's merchant name and address are left unchanged.

Product Codes (T4/T6 Table Load to Terminal)

Message Type: 0810

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	0LLL - BCD length of data to follow
Initialization data			*See initialization document for details*

3.22.4. Private Use Field 63

The following defines the use of each private use field 63.

Check Data

Message Type: 0100

Driver's License Method

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	0LLL - BCD length of data to follow
Verification Method	ans 2	2	'02' - Telecheck '08' - Telecredit
State Code	ans 2	2	
Birth Date	ans 6	6	mmddyy
Driver's License Number	ans 24	24	

MICR Number Method

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	0LLL - BCD length of data to follow
Verification Method	ans 2	2	'01' - Telecheck '04' - JBS
MICR Number	ans 15	15	

Account Number Method (Account number is included in field 35, 45, or 2.)

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	0LLL - BCD length of data to follow
Verification Method	ans 2	2	'03' - Telecheck '07' - Bank Card

Host Response Text

Message Type: 0110, 0210, 0510

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	0LLL - BCD length of data to follow
Host Response Text	ans ..80	..80	

Reconciliation Request Totals

Message Type: 0500

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	0LLL - BCD Length of data to follow
Captured Sales Count	an 3	3	000-999
Sales Amount	an 2	12	$$$$$$$$$$¢¢
Refund Count	an 3	3	000-999
Refund Amount	an 2	12	$$$$$$$$$$¢¢
Debit Sales Count	an 3	3	000-999
Sales Amount	an 2	12	$$$$$$$$$$¢¢
Refund Count	an 3	3	000-999
Refund Amount	an 2	12	$$$$$$$$$$¢¢
Authorize Sales Count	an 3	3	000-999
Sales Amount	an 12	12	$$$$$$$$$$¢¢
Refund Count	an 3	3	000-999
Refund Amount	an 12	12	$$$$$$$$$$¢¢

The Reconciliation Totals are calculated using the following rules:

1. Capture Cards are those cards that are processed using processing method 1 in the T4/T6 card tables, or those cards that are processed with the Capture Transactions Issuer Flag on, and the Debit Transactions Issuer Flag off in a T7.
2. Debit Cards are those cards that are processed using processing method 2 in the T4/T6 card tables, or those cards that are processed with the Capture Transactions Issuer Flag on, and the Debit Transactions Issuer Flag on in the T7.
3. Authorize Cards are those cards that are processed using processing method 0 in the T4/T6 card tables, or those cards that are processed with the Capture Transactions Issuer Flag off in the T7.
4. The Sale Count is a count of all non- VOIDed transactions that would cause funds to transfer from the cardholder to the merchant.
5. The Sale Amount is the total amount of all non-VOIDed transactions that would cause funds to transfer from the cardholder to the merchant.
6. The Refund Count is a count of all non-VOIDed transactions that would cause funds to transfer from the merchant to the cardholder.
7. The Refund Amount is the total amount of all non-VOIDed transactions that would cause funds to transfer from the merchant to the cardholder.
8. An ADJUST of a transaction will affect the amount, but not the count.
9. A VOID of a transaction will affect the amount, and decrement the count.
10. Any transaction that the host receives that has a value of $0.00 is a VOIDed transaction, and should not be included in the count.
11. The terminals will never allow an ADJUST to $0.00, so there can be no confusion with a VOIDed transaction.

Terminal Statistics

Message Type: 0800

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	0LLL - BCD Length of data follow
Terminal Status Response	n	2	1	'0Fh'
Terminal Status	n	2	1	
Messages From Line	n	4	2	
Messages To Line	n	4	2	
Total Transactions	n	4	2	
Terminal Re-dials	n	4	2	
Comms errors	n	4	2	
Transaction Time-outs	n	4	2	
Reversal time-outs	n	4	2	
Re-transmits	n	4	2	
Receive frame errors	n	4	2	
SNRMs in	n	4	2	
SNMRs out	n	4	2	
RNRs in	n	4	2	
RNRs in	n	4	2	
TESTs in	n	4	2	
TESTs out	n	4	2	
DMs in	n	4	2	
DMs out	n	4	2	
UAs in	n	4	2	
UAs out	n	4	2	
FRMRs in	n	4	2	
FRMRs out	n	4	2	
Response Time Counts	n	2	1	'44'
Boundary 1	n	4	2	100 mSecond units
Boundary 2	n	4	2	100 mSecond units
Boundary 3	n	4	2	100 mSecond units
Boundary 4	n	4	2	100 mSecond units
Count 1	n	4	2	Responses received within boundary 1
Count 2	n	4	2	Responses received within boundary 2
Count 3	n	4	2	Responses received within boundary 3
Count 4	n	4	2	Responses received within boundary 4
Total Up Time	n	6	3	Minutes
Total Down Time	n	6	3	Minutes
Restarts	n	4	2	Error recovery restarts
Delivery Errors	n	4	2	Message delivery errors
Mode of Operation	a	1	1	'E' - EPROM operation 'R' - RAM operation
Alarm Types	a	1	1	'N' - No, minor alarms 'Y' - Yes, minor alarms
Transactions, Primary	n	4	2	Count using primary telephone number
Transactions, Secondary	n	4	2	Count using secondary telephone number
Field	**Attribute**		**Bytes**	**Values**

Re-dials, Primary	n	4	2	
Re-dials, Secondary	n	4	2	
Card Read Errors	n	4	2	
Host Comms Errors	n	4	2	
Time Off-line	n	6	3	Minutes
Card Reads	n	4	2	
Reserved	n	12	6	
ECR Baud Rate	n	2	1	
Telephone Dial Options	b	8	1	
Password	n	4	2	
Amount Dual Entry	n	2	1	
Terminal Options	b	8	1	
Terminal Local Options	b	8	1	
Reserved	n	4	2	

Additional Data

Message Type: 0100, 0200, 0220, 0320, 0500, 0110, 0210, 0230, 0310, 0510, 0810

The additional data can consist of one or more of the following fields immediately following each other. Each of the fields contain its own length indicator to allow any fields that are not recognized by the host to be stepped over and ignored, with any following fields still being processed successfully.

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	0LLL - BCD Length of data follow
Cashier Data			
Length	n 4	2	'00 06' - BCD length of table data
Table Id	ans 2	2	'10' - Cashier information
Cashier Number	ans 4	4	Entered during transaction input
Petroleum Product Detail Request			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'19' - Petroleum Product Details Request information
Contents	----------	-------	Proprietary to Caltex Singapore
Petroleum Product Detail Response			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'20' - Petroleum Product Details Response information
Contents	----------	-------	Proprietary to Caltex Singapore
New PIN Block details			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'21' - New PIN BLock details information
Contents	----------	-------	Proprietary to Caltex Singapore
Response Data			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'22' - Response Data information
Response Data	ans ...999	...999	Response Data, used in Caltex Singapore

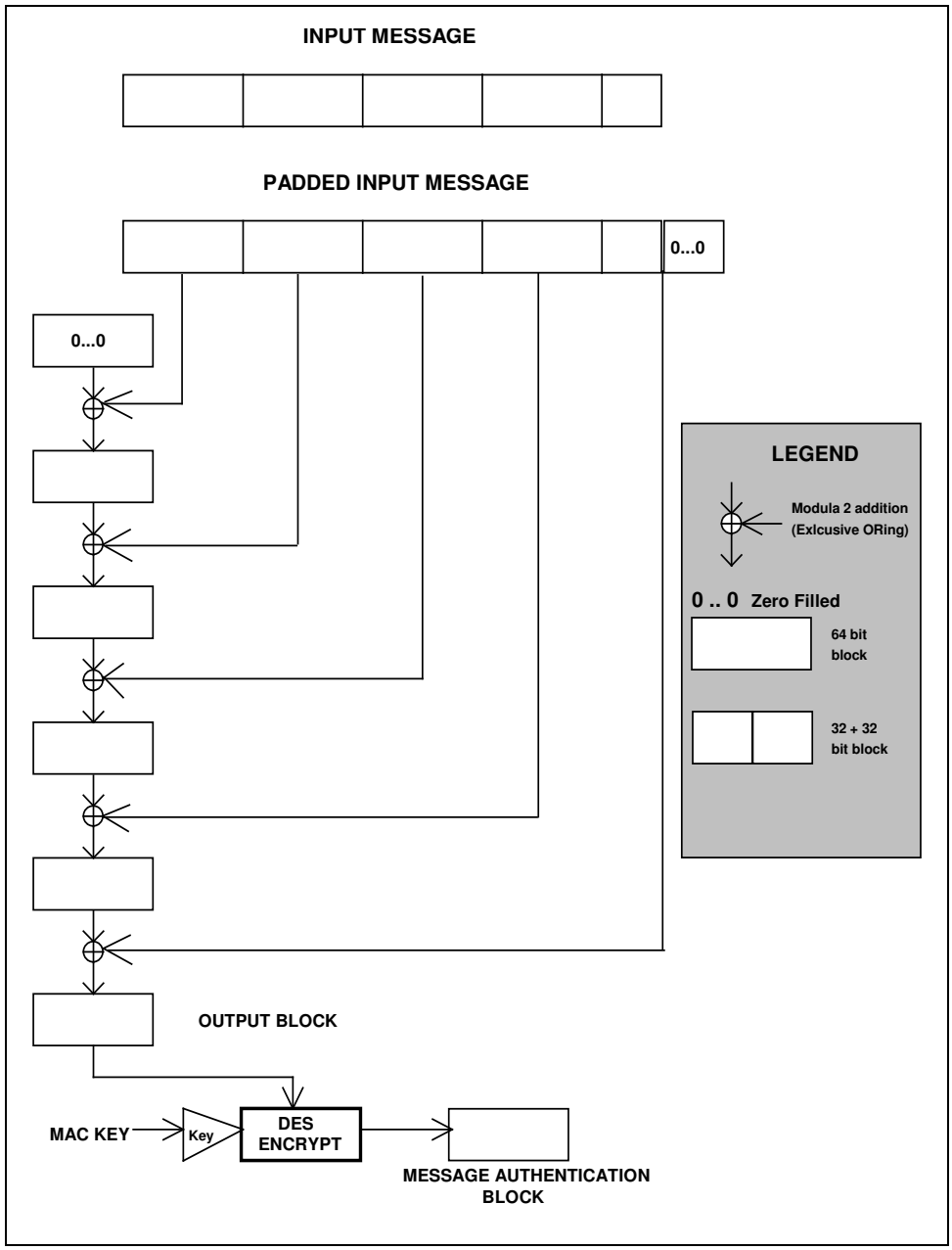
Field	Attribute	Bytes	Values
New petroleum Product Detail Request			

Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'23' - New Petroleum Product Detail Request information
Contents	----------	-------	Proprietary to Caltex Singapore
UOB Token Information Request			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'24' - Token Information Request info.
Contents	----------	-------	Proprietary to UOB Singapore
UOB Token Information Response			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'25' - Token Information Response information
Contents	----------	-------	Proprietary to UOB Singapore
UOB Card Adjustment Information Request			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'26' - Card Adjustment Information Request information
Contents	----------	-------	Proprietary to UOB Singapore
UOB Card Adjustment Information Response			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'27' - Card Adjustment Information Response information
Contents	----------	-------	Proprietary to UOB Singapore
Account Transfer Information			
Length	n 4	2	'00 XX' - BCD length of table data
Table Id	ans 2	2	'28' - Account Transfer information
Credit Account Length	n 2	1	BCD Length of credit account ('00' if credit account is PAN, SAN1 or SAN2)
Credit Account	an ..20	..20	Conditional (if credit account is not PAN, SAN1 or SAN2)
Barcode Information			
Length	n 4	2	'00 xx' - BCD length of table data
Table Id	ans 2	2	'29' - Barcode information
Contents	----------	-------	Proprietary to Turkish Retirement Fund
SSS Information			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'30' - SSS information
Contents	----------	-------	Proprietary to Social Security System (SSS) Philippines
OCBC Token Information Request			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'31' - OCBC Token Information Request Information
Contents	----------	-------	Proprietary to OCBC Singapore
OCBC Token Information Response			
Length	n 4	2	'XX XX' - BCD length of table data
Table Id	ans 2	2	'32' - OCBC Token Information Response Information
Contents	----------	-------	Proprietary to OCBC Singapore

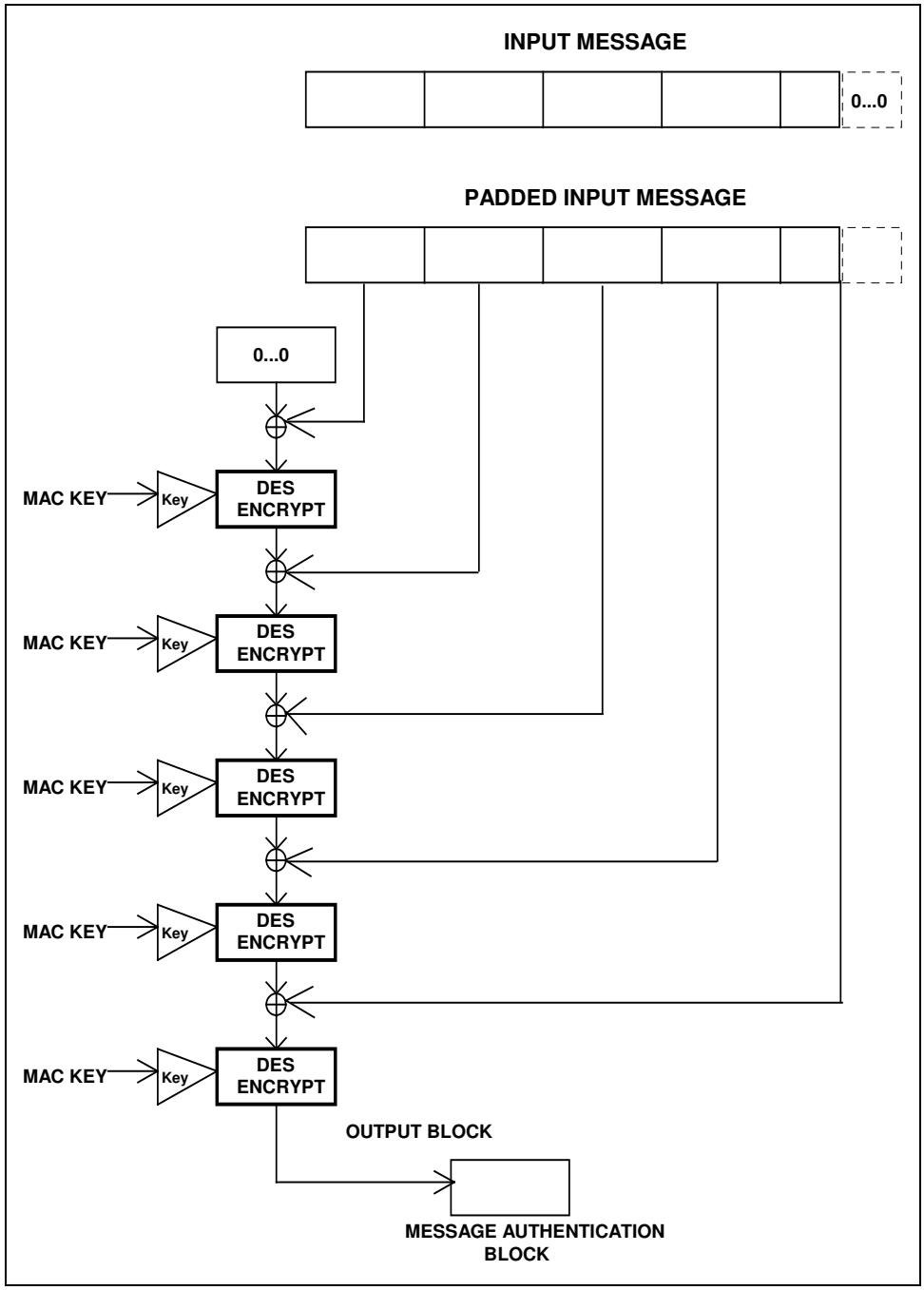
3.23. Message Authenticator Code, Field 64

Two kinds of Message Authenticator Code (MAC) are implemented, ECB and ANSI X9.9. Diagrams below show the algorithms for MAC block generation.

3.23.1. ECB MAC Generation



3.23.2. ANSI X9.9 MAC Generation



4. TRANSACTION FORMAT DEFINITIONS

4.1. Authorization

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0100	0110	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	C01		For manual card number entry, when allowed (see field 14)
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		O	
13	Date, Local Tran.	n	4		O	
14	Date, Expiration	n	4	C01		For manual entry of Expiry Date (see field 02)
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond. Code	n	2	00		
35	Track 2 Data	z	..37	C02		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc.ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.2. Balance Inquiry

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0100	0110	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	C01		For manual card number entry, when allowed
03	Processing Code	n	6	31A00X	31A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12		M	Available Balance
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	C01		For manual entry of Expiry Date, when allowed
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond. Code	n	2	00		
35	Track 2 Data	z	..37	C02		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc.ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
54	Additional Amts	an	...120		O	Daily limit balance
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.3. Card Verification

The Card Verification transaction is typically used in an environment where the merchant needs to verify that a card is not stolen, and possibly to obtain an approval code for a specific amount, prior to knowing the actual transaction amount. The amount entry step is optional, and may be omitted if the amount is not required. The amount field is always included, but may have a zero value.

This transaction is not saved in the batch, and does not affect the totals.

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0100	0110	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	C01		For manual card number entry, when allowed
03	Processing Code	n	6	38A00X	38A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		Amount may be $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	C01		For manual entry of Expiry Date, when allowed
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond. Code	n	2	00		
35	Track 2 Data	z	..37	C02		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc.ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.4. Sale/Debit

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	C01		For manual card number entry, when allowed
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	C01		For manual entry of Expiry Date, when allowed
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond. Code	n	2	00		
35	Track 2 Data	z	..37	C02		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - information purposes only
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.5. Void - Sale

The Void transaction is used to inform the host that a transaction previously performed at the terminal has been canceled.

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Void of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		Amount of original transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond. Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.6. Refund

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	C01		For manual card number entry, when allowed
03	Processing Code	n	6	20A00X	20A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	C01		For manual entry of Expiry Date, when allowed
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
35	Track 2 Data	z	..37	C02		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.7. Void - Refund

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	22A00X	22A00X	Void of credit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		Amount of original transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.8. Cash

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	C01		For manual card number entry, when allowed
03	Processing Code	n	6	01A00X	01A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	C01		For manual entry of Expiry Date, when allowed
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond. Code	n	2	00		
35	Track 2 Data	z	..37	C02		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc.ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.9. Void - Cash

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Void of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		Amount of original transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond. Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc.ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.10. Offline Sale

It is important that the bit map for the 0230 response is exactly as specified, or the terminal will not process the response.

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		Time original transaction was approved HHMMSS
13	Date, Local Tran.	n	4	M		Date original transaction was approved MMDD
14	Date, Expiration	n	4	O		If available from original transaction entry YYMM
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120			Contains TIP amount - Information purposes only
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.11. Void - Offline Sale

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction after adjustment If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.12. Void - Upload - Offline Sale

An 'UPLOAD' means an offline-type transaction is trickle-feed to the host after an on-line transaction is approved.

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.13. Sale - Below Floor Limit

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120			Contains TIP amount - Information purposes only
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.14. Void - Sale Below Floor Limit

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		Time original transaction was approved HHMMSS
13	Date, Local Tran.	n	4	M		Date original transaction was approved MMDD
14	Date, Expiration	n	4	O		If available from original transaction entry YYMM
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	Response code from original transaction
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction after adjustment
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.15. Void - Upload - Sale Below Floor Limit

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.16. Sales Completion

The Sales Completion transaction is used:

- To complete a Pre-authorization transaction when the exact amount is known.
- Following a voice referral, and subsequent voice approval.

It is important that the bit map for the 0230 response is exactly as specified, or the terminal will not process the response.

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		Time original transaction was approved HHMMSS
13	Date, Local Tran.	n	4	M		Date original transaction was approved MMDD
14	Date, Expiration	n	4	O		If available from original transaction entry YYMM
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond. Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	Response code from original transaction
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - Information purposes only
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.17. Void - Sales Completion

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		Time original transaction was approved HHMMSS
13	Date, Local Tran.	n	4	M		Date original transaction was approved MMDD
14	Date, Expiration	n	4	O		If available from original transaction entry YYMM
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	Response code from original transaction
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction after adjustment
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.18. Void - Upload - Sales Completion

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.19. Adjust - Sale

The Adjust transaction is used to notify the host that there has been a change to the amount of a previous transaction. An adjustment to $0.00 implies a void transaction.

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		New amount of transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Ent Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - Information purposes only
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.20. Void - Adjust - Sale

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Void of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		Amount of original transaction before adjustment
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.21. Void - Upload - Adjust - Sale

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Void of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		Amount of original transaction after adjustment
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.22. Adjust - Upload - Adjust - Sale

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		New amount of transaction after 2nd adjustment
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - Information purposes only
60	Original amount	ans	...999	M		Contains original amount of transaction after 1st adjustment If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	If Additional data is available
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.23. Void - Adjust - Upload - Adjust - Sale

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Void of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		Amount of original transaction after 1st adjustment
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	If Additional data is available
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.24. Adjust - Offline Sale

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		New amount of transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		Time original transaction was approved HHMMSS
13	Date, Local Tran.	n	4	M		Date original transaction was approved MMDD
14	Date, Expiration	n	4	O		If available from original transaction entry YYMM
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - Information purposes only
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.25. Void - Adjust - Offline Sale

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction after adjustment. If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.26. Void - Upload - Adjust - Offline Sale

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction after adjustment. If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.27. Adjust - Upload - Offline Sale

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		New amount of transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - Information purposes only
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.28. Void - Adjust - Upload - Offline Sale

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - Information purposes only
60	Original amount	ans	...999	M		Contains original amount of transaction before adjustment. If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.29. Adjust - Sale Below Floor Limit

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		New amount of transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - Information purposes only
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.30. Void - Adjust - Sale Below Floor Limit

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction after adjustment
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.31. Void - Upload - Adjust - Sale Below Floor Limit

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.32. Adjust - Upload - Sale Below Floor Limit

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		New amount of transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - Information purposes only
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.33. Void - Adjust - Upload - Sale Below Floor Limit

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.34. Adjust - Sales Completion

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		New amount of transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		Time original transaction was approved HHMMSS
13	Date, Local Tran.	n	4	M		Date original transaction was approved MMDD
14	Date, Expiration	n	4	O		If available from original transaction entry YYMM
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	Response code from original transaction
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - Information purposes only
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.35. Void - Adjust - Sales Completion

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	00A00X	00A00X	A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		Time original transaction was approved HHMMSS
13	Date, Local Tran.	n	4	M		Date original transaction was approved MMDD
14	Date, Expiration	n	4	O		If available from original transaction entry YYMM
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	Response code from original transaction
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction after adjustment
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.36. Void - Upload - Adjust - Sales Completion

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.37. Adjust - Upload - Sales Completion

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		New amount of transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP amount - Information purposes only
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.38. Void - Adjust - Upload - Sales Completion

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	02A00X	02A00X	Adjust of debit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		This amount is $0.00
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	06		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.39. Adjust - Refund

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0220	0230	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	22A00X	22A00X	Adjust of credit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		New amount of transaction
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6	M		
13	Date, Local Tran.	n	4	M		
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6	M		
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Original amount	ans	...999	M		Contains original amount of transaction If the transaction has been adjusted earlier, and the adjust has been sent to the host, this amount will be the amount prior to this adjustment.
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.40. Void - Adjust - Refund

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	22A00X	22A00X	Void of credit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		Amount of original transaction before adjustment
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.41. Void - Upload - Adjust - Refund

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0200	0210	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		
03	Processing Code	n	6	22A00X	22A00X	Void of credit transaction A-account selection, X-extra control bits
04	Amount, Trans.	n	12	M		Amount of original transaction after adjustment
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	O		If available from original transaction entry
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	00		
37	Retr. Ref. Num.	an	12	M	M	Request RRN is from original response Response RRN updates RRN for transaction in terminal batch
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.42. Reversal

The Reversal message is sent if the terminal sent a transaction request into the network, and did not receive a valid response before the transaction time-out period expired.

The reversal is sent persistently until a valid response to the reversal is received from the host.

Reversals will only be sent for on-line financial transaction messages.

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0400	0410	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	C01		For manual card number entry, when allowed
03	Processing Code	n	6	M	M	Same as for the transaction being reversed
04	Amount, Trans.	n	12	M		
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
14	Date, Expiration	n	4	C01		For manual entry of Expiry Date, when allowed
22	POS Entry Mode	n	3	C03		
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	M		Same as for the transaction being reversed
32	Acquir. Inst. ID	n	..11			
35	Track 2 Data	z	..37	C02		
37	Retr. Ref. Num.	an	12		M	
38	Auth. ID. Resp	an	6		O	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
52	PIN Data	b	64	O		If PINS are selected in this card definition table entry
54	Additional Amts	an	...120			Same as for transaction being reversed
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.43. Test Transaction

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0800	0810	
	Bit Map	b	64	M	M	
03	Processing Code	n	6	99000X	99000X	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
41	Terminal ID	ans	8	M	M	
42	Card Acc. ID	ans	15	O		From card acceptor ID field in card definition table entry

4.44. Initialization - T7

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0800	0810	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19			
03	Processing Code	n	6	93000X	93000X	
04	Amount, Trans.	n	12			
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6			
13	Date, Local Tran.	n	4			
14	Date, Expiration	n	4			
22	POS Entry Mode	n	3			
24	Network Int'l ID	n	3	M	M	
25	POS Cond.Code	n	2			
35	Track 2 Data	z	..37			
37	Retr. Ref. Num.	an	12			
38	Auth. ID. Resp	an	6			
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15			
43	Card Acq. Name	ans	40			
52	PIN Data	b	64			
54	Additional Amts	an	...120			
60	Initialization Table	ans	...999		O	
61	Private Use	ans	...999			
62	Private Use	ans	...999			
63	Private Use	ans	...999			
64	MSG. Auth. Code	b	64			

4.45. Logon

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0800	0810	
	Bit Map	b	64	M	M	
03	Processing Code	n	6	92000X	92000X	
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
62	Logon Data	ans	...999		O	See private field definition for details

4.46. Settlement

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0500	0510	
	Bit Map	b	64	M	M	
03	Processing Code	n	6	92000X 96000X	92000X 96000X	For initial settlement request After batch upload, if requested by host in response to initial settlement request
11	Systems Trace #	n	6	M	M	
12	Time, Local Tran.	n	6		M	
13	Date, Local Tran.	n	4		M	
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
37	Retr. Ref. Num.	an	12		M	
39	Response Code	an	2		M	
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
60	Batch Number	ans	...6	M		Batch number of batch being settled
62	Batch Totals	ans	...90	M		See private use field definitions
63	Response Text	ans	...40		O	May contain up to 2 lines of 20 characters of text for display and/or print
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

4.47. Batch Upload

Bit	Field Name	Attribute		Req.	Rsp.	Comments
	Message Type ID	n	4	0320	0330	
	Bit Map	b	64	M	M	
02	Primary Acc. Num	n	..19	M		From original transaction entry
03	Processing Code	n	6	M	M	Same as original transaction If last digit is 1, there are more to follow If last digit is 0, this is the last transaction
04	Amount, Trans.	n	12	M		From original transaction
11	Systems Trace #	n	6	M	M	For trace # of original transaction , see field 60
12	Time, Local Tran.	n	6	M	M	
13	Date, Local Tran.	n	4	M	M	
14	Date, Expiration	n	4	O		If available from original transaction
22	POS Entry Mode	n	3	C03		From original transaction
24	Network Int'l ID	n	3	M	M	From NII field entry in card definition table entry
25	POS Cond.Code	n	2	M		From original transaction
37	Retr. Ref. Num.	an	12	M	M	From original transaction
38	Auth. ID. Resp	an	6	O		If available from original transaction
39	Response Code	an	2	M	M	From original transaction
41	Terminal ID	ans	8	M	M	
42	Card Acc ID	ans	15	M		From card acceptor ID field in card definition table entry
54	Additional Amts	an	...120	O		Contains TIP or CASH component of amount. Information only
60	Original Data	ans	...999	O		Message type, Systems Trace No from original transaction
61	Product Codes	ans	...999	O		If product codes are selected for this card defn. table
62	Invoice/ECR Ref.	ans	...999	O		If Invoice/ECR Ref # is selected for this card defn. table
63	Additional Data	ans	...999	O	O	Request : Generic input data Response : Host response text
64	MSG. Auth. Code	b	64	O	O	If MACs are selected in this card definition table entry

5. RESPONSE CODE TEXT

The following table lists the response codes that may be sent to the terminal by the host in response to a request. Also listed is the text displayed by the terminal, and the ISO definition of the response code.

rsp cod	Terminal Display Text	Descriptions
00	APPROVAL XXXXXX	Approved
01	PLEASE CALL	Refer to card issuer
02	REFERRAL	Refer to card Issuer's special conditions
03	ERROR-CALL HELP-SN	Invalid merchant
04	PICKUP CARD	Pick-up
05	DO NOT HONOUR	Do not honour
12	ERR-CALL HLEP-TR	Invalid transaction
13	ERR-CALL HELP-AM	Invalid amount
14	ERR-CALL HELP-RE	Invalid card number
19	RE-ENTER TRANSACTION	Re-enter transaction
21	NO TRANSACTIONS	No Transactions
25	ERR-CALL HELP-NT	Unable to locate record on file
30	ERR-CALL HELP-FE	Format error
31	CALL HELP - NS	Bank not supported by switch
41	PLEASE CALL - LC	Lost card
43	PLEASE CALL - CC	Stolen card, pick up
51	DECLINED	Not sufficient funds
52	NO CHEQUE ACC	No chequing account
53	NO SAVINGS ACC	No savings account
54	EXPIRED CARD	Expired card
55	INCORRECT PIN	Incorrect PIN
56	NO CARD RECORD	No card record
58	INVALID TRANSACTION	Transaction not permitted to terminal
61	EXCEEDS LIMIT	Exceeds withdrawal amount limit
63	SECURITY VIOLATION	Security violation
75	PIN TRIES EXCEED	Allowable number of PIN tries exceeded
76	INVALID DESCRIPTOR	Invalid product code
77	RECONCILE ERROR	Reconcile error (or host text if sent)
78	TRANS. NOT FOUND	Trans. number not found
79	BATCH ALREADY OPEN	Batch already open
80	BAD BATCH NUMBER	Batch number not found
85	BATCH NOT FOUND	Batch not found
89	BAD TERMINAL ID	Bad Terminal ID
91	ERR-CALL HELP-NA	Issuer or switch inoperative
94	ERR-CALL HELP-SQ	Duplicate transmission
95	BATCH TRANSFER, WAIT	Reconcile error. Batch upload started
96	ERR-CALL HELP-SE	System malfunction
Locally Generated Error Messages		
LC	PLEASE TRY AGAIN -LC	Lost carrier
CE	PLEASE TRY AGAIN -CE	Communications error
ID	CALL HELP - ID	Invalid downline load
IA	CALL HELP - IA	Invalid amount
IR	CALL HELP IR	Invalid message type
IS	CALL HELP - IS	Invalid host sequence number
IM	CALL HELP - IM	Invalid MAC
TO	PLEASE TRY AGAIN -TO	No reply timeout
ND	PLEASE TRY AGAIN -ND	Advice / Reversal transactions not approved
**	ERROR - INVLD 39 rr	Unknown response code rr