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HYPERCOM®

MESSAGE SPECIFICATION

"THE SYSTEM"

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1. DOCUMENT MODIFICATION HISTORY

Date	Version	Description of Change
February 1, 1994	3.00	Document Formatted from v2.32. Added the reconciliation totals to private use field 63, Additional Data.
February 28, 1994	3.01	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
March 17, 1994	3.02	Added definitions for all the fields used in the Hypercom® implementation of ISO 8583.
April 12, 1994	3.03	Added example to illustrate the decoding of an ISO-8583 message including the bit map.
April 28, 1994	3.04	Added message format, in private use field 63, to support CPS 2000 and a variable length, host formatted reference data.
May 17, 1994	3.05	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.
May 25, 1994	3.06	Added private use field definition for additional prompts data.
July 7, 1994	3.07	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.
August 8, 1994	3.08	Corrected initialization processing code.
October 6, 1993	3.09	Changed the additional prompt data definition to provide the prompt length. Added MACing logic. Removed logon response field defined in the field 63 section. Logon on response is supported in field 62.
October 24, 1994	3.10	Marked all transactions with optional MAC field, field 64. Length for Track I data was corrected from 75 to 76. In the Message Type / Processing Code table, changed definition "Adjust, Debit" to "Adjust, Sale" and "Adjust, Credit" to "Adjust Refund." Corrected message type definition of 0200 to 0220 for field Original Amount. Added HCT implementation of field 48, additional data - private. Added HCT implementation of logon data request to private use field 60. Defined private use field 63, table id 29, additional host print data.
December 7, 1994	3.11	Updated field 63, Additional Host Print Data and Signature Data definitions.
January 4, 1995	3.12	Added field descriptions to all private use fields. Added surcharge amount to field 63. Correct the response code field of the batch upload transaction (message type 0320). It was marked manatory, should have been optional.
April 24, 1995	3.13	Added signature capture code '15' for mail / phone order transactions. Defined the authorization totals as optional in the reconciliation request totals fields. Added POS condition codes 05, 51, & 52. Added message formats for down loading an open batch to a terminal. Message type 0500/0510 and 0300/0310.
August 17, 1995	3.14	Moved check data to additional data section. Corrected the message format example. Added private use field 63 table ids: 53, miscellaneous amount, 54, AVS data, and 55, AVS response. Corrected original amount definitions for adjust and void message formats. Added descriptions for use of message formats. Made corrections to field 63 subfields 23, 24, 53, 54, & 55 total length values. Add duration to the CPS 2000 table id. in

Date	Version	Description of Change
		field 63. Printer types in signature data table, field 63, were incorrect. Added new printer type F2.
March 6, 1996	3.15	Corrected Initialization - T7 message format. Removed reference to 0120 and 0130 message types in section Message Type Identifier.
April 16, 1996	3.16	Added new Hypercom check service, check service 09, full micr number.
July 1, 1996	3.17	Updated private use field 63, subfield 24, GECC data. Added the following: Account select code '9' for EBT. POS condition code '04' for ECR interface. Captured cash advance totals to reconciliation request totals. Sub field "56", of private use field 63.
July 19, 1996	3.18	Added EBT to the Message Type / Processing Code Table.
August 12, 1996	3.19	Change requirement of card acquirer id in test message request from "M" to "O". Added field 53, security related control information. Added 3 new tables to private use 63, table id's 57-59.
September 5, 1996	3.20	Modified private field 63 table id 58, Micr Data, added Micr Entry type to field definition. Correct section heading "5.24.4.5.46 Driver's License Number (62)" to 5.24.4.5.46 State Code (62)".
November 25, 1996	3.21	Added private field 63, table id 66, Issuer Identification. Corrected title of section 5.24.4.5.44, Account Number. Corrected length of check number field, section 5.24.4.5.48. Added printer definitions to 5.24.4.5.33, Terminal Status. Changed length of voucher number from 10 to 15 in private use field 63, 47, "EBT terminal data.
December 5, 1996	3.22	Added private field 63, table ids 67 - 71.
April 30, 1997	3.23	Added private field 63, table id 72. Corrected private use field 60, software id field, DLL revision from "N 1" to "N 2". Added description of splitting initialization tables over multiple messages.
September 16, 1997	3.24	Modified statistics definitions. Corrected data length on private field 63, table id 47.
January 28, 1998	3.25	Added processing code 020000 to message type 0100 for re-auths. Added signature capture device code for ICE in field 63, signature data.
June 19, 1998	3.26	Private Use Fields table, took out Reconciliation Response Text from field 62. There is no definition for response text in field 62. Response text is supported in field 63. Added supported AVS codes to the AVS table.
January 18, 1999	3.27	Added ACH Check transactions to support Electronic Check Acceptance (ECA) which is also known as check truncation. Modified the account type selection code in the Message Type/Processing Code table from 'a0' to 'aa' to correspond to the revised ISO definition of that field. Modified the Account Selection table values to reflect the new two-digit 'aa' code format. Added account selection code 96 for EBT Cash Benefit and 98 for EBT Food Stamp Benefit. Reformatted the document to allow document mapping and to clarify the special use fields.
January 21, 1999	3.28	Added the Phone Card Activation transaction.
April 15, 1999	3.29	Added additional transaction descriptions. Corrected and updated the Lodging transaction messages. Re-formatted document and added index.
April 30, 1999	3.30	Modified the 3.29 release for corrections and comments from the document reviewers.

Date	Version	Description of Change
July 26, 1999	3.31	Added documentation for CVV2 and Level II Commercial Card support. Re-positioned the Application Data Structure section in the Message Structure section to be consistent with the order of the components. Added definitions and re-formatted the Data Attributes section to reflect the ISO definitions. Added and corrected Response Code Text table. Added items to the Terminal Generated Error Text table.
March 23, 2000	3.32	Add documentation for support of chip card transactions compliant to EMV '96 specifications (refer to EMV ' 96, Version 3.1.1, May 31, 1998 specifications). Added description of the Private Data Sub-elements used in the Chip Card Data field. Added PrePaid card transaction support. Combined the Phone Card Activation transaction into the PrePaid card transaction set. Updated ERC message specifications. Added ERC transaction format definitions.

2. RELATED DOCUMENTS

Hypercom® "The System" Terminal Message Flows
Document No.: TRANFLOW.DOC

Hypercom® T7 Standard Software Initialization Parameters
Document No.: T7INI.DOC

3. INTRODUCTION

Services of the financial industry include the exchange of electronic messages relating to financial transactions. Traditionally, agreements on application specifications 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 formats and message discipline and the associated end-to-end high level communications protocols -

> 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.

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.

4. 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			var			2	

4.1. HEADER

The Header contains message and routing information. It consists of the following data, which is described in the following sections:

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			var			2	

4.1.1. 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			var			2	

4.1.1.1. 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.

4.1.1.2. 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.

4.2. 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	

4.2.1. 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:

Message type definition:

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 Identifier	Application
0100 0110	Authorization Request Authorization Request 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 0420 0430	Reversal Request Reversal Request Response Reversal Request Partial Reversal Request Response Partial
0500 0510	Card Acceptor Reconciliation Request Card Acceptor Reconciliation Request Response
0800 0810	Network Management Request Network Management Request Response

4.2.2. 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	Bit 2	Bit 3	Bit 4	•••••	Bit 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

4.2.3. DATA ELEMENTS

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

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 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.
- The variable length Primary Account Number field, field 2, with an odd length is left justified within the field and “F” filled.

4.3. 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	

5. 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 ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16			
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
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.

5.1. DATA ATTRIBUTES

The "**Attribute**" column 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 that's maximum length is 999 data elements.) The following table defines each attribute.

Attribute Abbreviation	Meaning	Size
a	Alphabetic characters (a-z, A-Z)	Each data element represents 1 byte
n	Numeric digits (0-9)	Each data element represents 1 nibble (2 data elements = 1 byte)
s	Special Characters	Each data element represents 1 byte
an	Alphabetic and numeric characters (0-9, a-z, A-Z)	Each data element represents 1 byte
as	Alphabetic and special characters	Each data element represents 1 byte
ns	Numeric and special characters	Each data element represents 1 byte
ans	Alphabetic, numeric and special characters (All characters)	Each data element represents 1 byte
MM	Month	
DD	Day	
YY	Year	
hh	Hour	
mm	Minute	
ss	Second	
LL,LLL	Length of variable field that follows	
VAR	Variable length field	
3	Fixed length of three characters	
..17	Variable length up to maximum 17 characters. All variable length fields will in addition contain two or three positions at the beginning of the field to identify the number of positions following to the end of that field.	
x	"C" for credit, "D" for debit and must always be associated with a numeric amount data element, i.e., x + n16 in amount, net settlement means prefix "C" or "D" and 16 digits of amount, net settlement.	
b	Binary data	Each data element represents 1 bit. (8 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)

5.2. DATA REQUEST/RESPONSE CODES

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:

Code	Meaning
M	Mandatory

O	Optional
C xx	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 used 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 I and/or track II will be included.
07	Transaction performed from a terminal with ICC capabilities performing an EMV compliant credit or debit transaction.

5.3. MESSAGE TYPE / PROCESSING CODE TABLE

The following is a table specifying the message type and processing code for each transaction type. In the Processing Code column, a = Account Selection and x = Processing / Flow control

Transaction	Message Type	Processing Code
Authorization	0100	00 aa 0x
Pre-Authorization		30 aa 0x
Balance Inquiry		31 aa 0x
Check Verification		04 aa 0x
Card Verification		38 aa 0x
Re-Auth		02 00 0x
Sale	0200	00 aa 0x
Refund		20 aa 0x
PrePaid Card Issue/Re-Issue		20 aa 0x
Cash		01 aa 0x
Sale & Cash		09 aa 0x
Void, Sale, on-line		02 aa 0x
Payment		21 aa 0x
Payment Reversal		22 aa 0x
Void, Refund, on-line		22 aa 0x
Available Funds		30 aa 0x
Balance Inquiry		31 aa 0x
Off-line Sale	0220	00 aa 0x
Off-line Refund		20 aa 0x
Sales Completion		00 aa 0x
Adjust, Sale		02 aa 0x
Adjust, Refund		22 aa 0x
Guaranteed Late Arrival		90 aa 0x
Reversal	0400	*Same as original transaction*
Settlement Request	0500	92 00 0x
Settlement, after upload		96 00 0x
Batch Down Line Load		95 00 0x
Batch upload	0320	*Same as original transaction*
Signature Data	0320	90 00 0x
Statistics	0800	91 00 0x
Logon		92 00 0x
Initialization		93 00 0x
Test Transaction		99 00 0x
Please Wait Advice	0830	90 00 0x
EBT Food Stamps	0200	00 98 0x
EBT Cash Card Purchase		00 96 0x
Prior EBT		00 98 0x
EBT Cash w/Cash Back		09 96 0x
EBT Cash Only		01 96 0x
EBT Food Stamp Return		20 98 0x
EBT Balance Inquiry	0100	31 00 0x
PrePaid Card Activation	0300	48 00 0x
PrePaid Card Deactivation	0300	49 00 0x
ACH Check	0200	04 aa 0x
ACH Check Refund		24 aa 0x
ACH Check Void		06 aa 0x
ACH Check Refund Void		26 aa 0x
ACH Check Offline	0220	04 aa 0x

Transaction	Message Type	Processing Code

6. TRANSACTION DATA FIELDS

The following sections describe the ISO 8583 fields implemented in the Hypercom® family of terminals.

6.1. 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 transactions (i.e. adjust, off-line, etc.).

6.2. 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 Message Type / Processing Code Table section for processing code definitions.)

6.2.1. ACCOUNT SELECTIONS

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

Code	Account Selected
00	Default Account
10	Savings Account
20	Checking Account
30	Credit Facility
40	Universal Account
96	EBT Cash Benefit
98	EBT Food Stamp Benefit

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.

6.2.2. 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 using 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*	Reply not required

2	Initialize After Transaction	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	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. The host can use this indicator to detect the end of the batch upload.

6.3. AMOUNT, TRANSACTION, FIELD 4

The transaction amount is the total amount 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.

6.4. 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 the terminal uses it 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.

6.5. 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).

6.6. 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).

6.7. DATE, EXPIRATION, FIELD 14

This is the expiration date of the PAN. It 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.).

6.8. 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 and 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
05	ICC read		
80	Magnetic stripe even though it is ICC capable		

6.9. NETWORK INTERNATIONAL IDENTIFIER (NII), FIELD 24

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

6.10. POINT OF SERVICE (POS) CONDITION CODE, FIELD 25

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

Code	Meaning	
00	Normal presentment	
01	Customer not present	Not implemented
03	Merchant suspicious	
04	ECR Interface	
05	Card not present	
06	Pre-authorized request	
08	Mail and/or telephone order	
51	Open Tab	
52	Frequency transaction	
71	Card present mag stripe bad	
87	Store and forward	

6.11. 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.

6.12. RETRIEVAL REFERENCE NUMBER (RRN), FIELD 37

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

6.13. AUTHORIZATION IDENTIFICATION RESPONSE, FIELD 38

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

6.14. 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 the Response Code Text section for a full description of the response code values.

6.15. 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.

6.16. CARD ACCEPTOR ACQUIRER ID., FIELD 42

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

6.17. CARD ACCEPTOR ACQUIRER NAME, FIELD 43

This field is 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.

6.18. 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.

6.19. ADDITIONAL DATA - PRIVATE, FIELD 48

Used to update MAC and PIN key during transaction processing. This field may be returned in any 0210, 0510, or 0810 message for updating the encryption keys. Terminal updates the current acquirer table entry.

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	'0016' - BCD length of data to follow
eKTM(KMAC)	b	64	8	MAC key.
eKTM(KPP)	b	64	8	PIN encryption key

6.20. 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.

6.21. SECURITY RELATED CONTROL INFORMATION, FIELD 53

The security related control information is used to identify the terminal to the host. Its use is application dependent.

6.22. ADDITIONAL AMOUNTS, FIELD 54

The Additional Amounts field contains other amounts associated with the transaction. When processing restaurant transactions this field contains the tip. Because of conflicts in earlier applications, the cashback amount, if present, is sent in Private Use Field 63, Table 41.

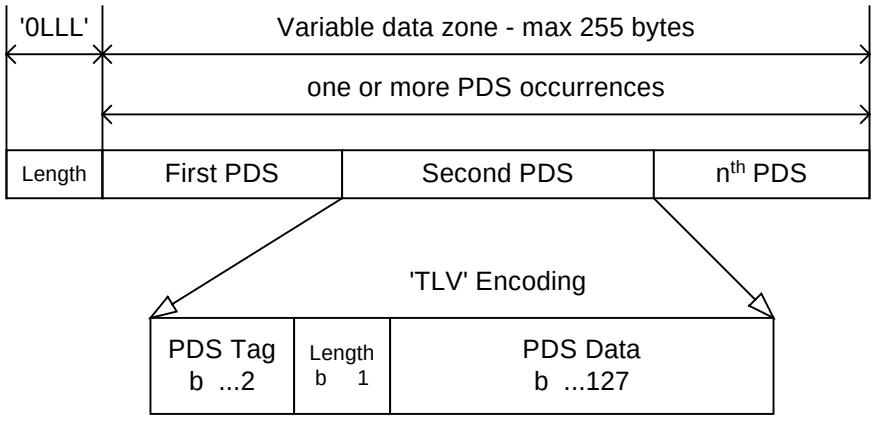
Field	Attribute	Bytes	Values
Length Attribute	n 3	2	'0012' - BCD length of data to follow
Additional Amount	an 12	12	Depends on application, could be tip amount.

6.23. ICC SYSTEM RELATED DATA, FIELD 55

The ICC System Related Data field contains the information required by the acquirer to complete an EMV compliant debit or credit transaction with an issuer. Examples of these transactions include MCPA and Visa Smart Credit/Debit. This field is present in authorization (100 and 200) and authorization advice messages (120 and 220). The data is taken from a chip card presented by a cardholder at the POS device or from the device itself.

ICC System Related Data (DE 055) is used to transport chip-specific data over a network. It is used for Chip Full Grade transactions whether the ICC data is EMV compliant and in e-commerce transactions where the ICC data may be EMV compliant or issuer specific.

- For issuer specific ICC data, the data zone of DE 055 is considered as a block of binary data with no specific format.
- For EMV compliant ICC data, DE 055 has its own generic structure and may contain one or more Private Data Sub-elements (PDS's), as shown in the figure below.



Structure of DE 055, containing PDS's with 'TLV' encoding

Each PDS within DE 055 consists of three sub-fields:

1. PDS Tag: Contains the tag identifying the EMV data object transported in this PDS (e.g. PDS '9F26' corresponds to the EMV tag '9F26'). The PDS Tag consists of either one or two bytes, represented as hexadecimal. The second byte is provided only if the continuation indicator in the first byte is set. Refer to the EMV 98 Specifications for the structure and definition of the EMV tags and definition of the continuation indicator.
2. PDS Length: Specifies the length (in bytes) of the PDS data, expressed as a binary number in the range 1 to 127.
3. PDS Value: Contains the actual data from the corresponding EMV data object, as identified by the PDS Tag.

PDS's can appear in any order in DE 055. Member processing systems must therefore scan the full length of DE055 to ensure that all PDS's are captured during message processing.

Field/PDS	Attribute		Bytes	Values
Length Attribute	n	3	2	0LLL - BCD length of data to follow, maximum 255 bytes.
Tag ‘5F2A’ - Mandatory	b	16	2	Transaction Currency Code – Tag ‘5F2A’ - Taken from terminal initialization table or chip card.
Tag ‘71’ – Optional (Response)	n	..8	4	Issuer Script Template 1 – Tag ‘71’ - (Response Message) - Scripts from the issuer sent to the terminal for delivery to the ICC.
Tag ‘72’ – Optional (Response)	n	..8	4	Issuer Script Template 2 – Tag ‘72’ - (Response Msg) - Scripts from the issuer sent to the terminal for delivery to the ICC.
Tag ‘82’ - Mandatory	b	16	2	Application Interchange Profile – Tag ‘82’ - Specifies the application functions that is supported by the card. The terminal attempts to execute only those functions that the ICC supports.
Tag ‘84’ – Optional	b	Var	..16	Application Identifier (AID) / Dedicated File (DF) Name – Tag ‘84’ - Taken from the application (application specific data)
Tag ‘91’ – Optional (Response)	b	Var	16	Issuer Authentication Data – Tag ‘91’ - (Response Message) - Sent by the issuer if on-line issuer authentication is required.
Tag ‘95’ - Mandatory	b	40	5	Terminal Verification Result (TVR) – Tag ‘95’ - Status of the different functions as seen by the terminal during the processing of a transaction.
Tag ‘9A’ - Mandatory	n	6	3	Transaction Date – Tag ‘9A’ - Formatted as ‘YYMMDD’. Taken from terminal clock.
Tag ‘9C’ - Mandatory	n	2	1	Transaction Type – Tag ‘9C’ - Taken from the transaction data
Tag ‘9F02’ - Mandatory	n	12	6	Transaction Amount – Tag ‘9F02’ - Taken from transaction data
Tag ‘9F03’ – Mandatory for cashback and if ‘9F03’ was provided by terminal	n	12	6	Amount Other – Tag ‘9F03’ - A secondary amount associated with the transaction representing a cashback amount
Tag ‘9F09’ – Optional	b	16	2	Terminal Application Version Number – Tag ‘9F09’ - Taken from the application (application specific data)
Tag ‘9F10’ – Mandatory if provided	b	Var	..32	Issuer Application Data (IAD) – Tag ‘9F10’ - Retrieved from the card
Tag ‘9F1A’ - Mandatory	n	3	2	Terminal Country Code – Tag ‘9F1A’ - Taken from terminal initialization table or chip card.
Tag ‘9F1E’ – Optional	an	8	8	Interface Device (IFD) Serial Number – Tag ‘9F1E’ - Unique and permanent serial number assigned to the Interface Device by the manufacturer.
Tag ‘9F26’ – Mandatory	b	64	8	Application Cryptogram (AC) – Tag ‘9F26’ - Used to approve offline transactions
Tag ‘9F27’ - Mandatory	b	8	1	Cryptogram Information Data – Tag ‘9F27’ - Used to approve offline transactions
Tag ‘9F33’ - Optional	b	40	5	Terminal Capabilities – Tag ‘9F33’ - Specifies the capabilities of the terminal
Tag ‘9F34’ – Optional	b	18	3	CVM Results – Tag ‘9F34’ - Result of the last cardholder verification method
Tag ‘9F35’ – Optional	n	2	1	Terminal Type – Tag ‘9F35’ - Specifies the type of terminal
Tag ‘9F36’ - Mandatory	b	16	2	Application Transaction Counter (ATC) – Tag ‘9F36’ - from the card
Tag ‘9F37’ - Mandatory	b	32	4	Unpredictable Number – Tag ‘9F37’ - Value to provide variability and uniqueness to the generation of the application cryptogram.
Tag ‘9F41’ – Optional	n	..8	4	Transaction Sequence Counter – Tag ‘9F41’ - Counter maintained by the terminal that is incremented by one for each transaction
Tag ‘9F53’ – Optional	an	1	1	Transaction Category Code / Merchant Category Code – Tag ‘9F53’ - Usually provided by the acquirer

6.24. 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 Logon Request	0500 0800 0320 0810 0220 0800
61	Product Codes Card Definition Tables (T4/T6)	0100, 0200, 0220, 0320 0810
62	Invoice/ECR Reference Number Product codes (T4/T6 Table Load to Terminal) Logon Response	0100, 0200, 0220, 0320 0810 0810
63	Reconciliation Request Totals Terminal Statistics Additional Data	0500 0800 0100, 0200, 0220, 0320, 0110, 0210, 0310, 0510, 0810

6.25. PRIVATE USE FIELD 60

The following sections define the use of each private use field 60.

6.25.1. BATCH NUMBER

The batch number is sent to the host in the settlement request message (message type 0500). The terminal assigns the batch number when the batch is closed. Batch numbers may be set during terminal initialization.
Message Type: 0500

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	'0006' - BCD length of data to follow
Batch Number	ans	6	6	

6.25.2. SOFTWARE ID

The software ID is sent to the host in each initialization request message. The software ID is the software application name.
Message Type: 0800

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	'0011' - BCD length of data to follow
Software Name	ans	7	7	
Revision Level	ans	3	3	
DLL Revision	n	2	1	From last initialization

6.25.3. ORIGINAL MESSAGE DATA

The original message data is used to carry data in the transaction upload (message type 0320) of the original transaction, since the message type and system trace audit number of the 0320 is not the same as the original transaction.
Message Type: 0320

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	'0022' - BCD length of data to follow
Original Message Type	an	4	4	Message type of original transaction
Original Systems Trace Audit Number	an	6	6	Trace number of original transaction
Reserved	an	12	12	Space filled - Reserved for future use.

6.25.4. TERMINAL CONFIGURATION PARAMETERS (T4/T6)

Only used by the Hypercom® T4 and t6 terminals. No longer a supported field.
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*

6.25.5. ORIGINAL AMOUNT

The original amount field is used to carry the amount of the transaction prior to a void or adjustment.
Message Type: 0220 and 0420

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	'0012' - BCD Length of data to follow
Original Amount	an	12	12	Original amount of the transaction being adjusted

6.25.6. LOGON REQUEST

Message Type: 0800

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	'0015' - BCD length of data to follow
PIN Pad Id (PPID)	n	16	8	Current PIN Pad Id (serial number)
eKTM(PPID)	b	32	4	The most significant 32 bits of the PIN key.
PIN Pad Software Version Number	n	6	3	PIN pad software version number.

6.26. PRIVATE USE FIELD 61

The following sections define the use of each private use field 61.

6.26.1. PRODUCT CODES

The product codes field is used to carry the descriptive information of the items purchased. The terminal may deliver a maximum of four product codes per transaction. The two digit product codes are loaded to the terminal during parameter initialization.

If this is a lodging transaction, a "01" will be placed in the Field 61, Product Codes, to indicate the industry code for the transaction
In the Standard Lodging application, 01 is always sent as the product code unless extra charges are prompted for and entered. The following product codes indicate the extra charge codes for American Express:
If a terminal is configured as a lodging application, the user will be prompted for program ID information.
01 = Lodging
02 = Gift Shop
03 = Restaurant
04 = No Show
05 = Card Deposit
06 = Delay Charge

If the associated card is a Visa card, additional lodging information will be placed in Field 63, table 30

Message Type: 0100, 0200, 0220, and 0320

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	'0008' - 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

6.26.2. CARD DEFINITION TABLES (T4/T6)

Only used by the Hypercom® T4 and T6 terminals. No longer a supported field.
Message Type: 0800

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

6.27. PRIVATE USE FIELD 62

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

6.27.1. INVOICE/ECR REFERENCE NUMBER

Message Type: 0100, 0200, 0220, 0320

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	'0006' - 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.

6.27.2. LOGON RESPONSE - ENCRYPTED WORKING KEY/MAC KEY

Used to update the encrypted working key or encrypted MAC key in response to a log on request.
Message Type: 0810

Field	Attribute		Bytes	Values
Length Attribute	n	3	2	'00LL' - BCD Length of data to follow
Encrypted Working Key	b	64	8	Replaces current encryption key. This key is encrypted under the master key.
MAC Key	b	64	8	Replaces current MAC Key.
Receipt Line 2	an	23	23	Optional field, replaces Receipt Line 2 of the terminal configuration table
Receipt Line 3	an	23	23	Optional field, replaces Receipt Line 3 of the terminal configuration table
Default Merchant Name	an	23	23	Optional field, replaces merchant name of the terminal configuration table.

6.27.3. PRODUCT CODES (T4/T6 TABLE LOAD TO TERMINAL)

Only used by the Hypercom® T4 and t6 terminals. No longer a supported field.
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*

6.28. PRIVATE USE FIELD 63

The following sections define the use of each private use field 63,

6.28.1. RECONCILIATION REQUEST TOTALS

The reconciliation totals are sent to the host in the settlement message (message type 0500). The totals are the capture, debit and authorized totals of the current open batch. In the case of multi-host applications, the totals are only those totals associated with each acquirer.
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	12	12	$$$$$$$$$$¢¢
Refund Count	an	3	3	000-999
Refund Amount	an	12	12	$$$$$$$$$$¢¢
Debit Sales Count	an	3	3	000-999
Sales Amount	an	12	12	$$$$$$$$$$¢¢
Refund Count	an	3	3	000-999
Refund Amount	an	12	12	$$$$$$$$$$¢¢
Authorize Sales Count	an	3	3	000-999 Optional: See note 12 below
Sales Amount	an	12	12	$$$$$$$$$$¢¢ Optional: See note 12 below
Refund Count	an	3	3	000-999 Optional: See note 12 below
Refund Amount	an	12	12	$$$$$$$$$$¢¢ Optional: See note 12 below
Cash Adv. Sales Count	an	3	3	000-999 Optional: See note 13 below
Sales Amount	an	12	12	$$$$$$$$$$¢¢ Optional: See note 13 below
Refund Count	an	3	3	000-999 Optional: See note 13 below
Refund Amount	an	12	12	$$$$$$$$$$¢¢ Optional: See note 13 below

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.*
12. *The authorization totals fields are compatibility fields. The older T4/T6 terminals kept totals for authorization totals. The T7 families of terminals do not normally count these transactions because they are not stored in the transaction journal.*
13. *The cash advance totals fields are application dependent. If an application requires these fields, the authorization fields are required, but may be 0 filled.*

6.28.2. TERMINAL STATISTICS

Terminal statistics are sent to the host immediately following a successful settlement.
Message Type: 0800

Field Name	Type	Length	Description
Length Attribute	n	2	0LLL - BCD Length of data to follow
NMS Message Type	n	1	Value: 0Fh - Terminal Statistics Response
Message Sequence Number	n	2	Value: Same as request
Program Name	a	10	7 character program name, 3 character version
Terminal Status	n	1	00h
Messages In	n	2	Incremented for each message sent by the terminal. Includes all messages, software loads, initializations, and transactions.
Messages Out	n	2	Incremented for each message received by the terminal. Includes all messages, software loads, initializations, and transactions.
Transaction Count	n	2	Incremented for each authorization / financial transaction processed by the terminal.
Redials	n	2	Incremented for each dial attempt, excluding the initial dial attempt for a transaction or function.
Comms Errors	n	2	Incremented for each transaction failure due to exhausting all dial attempts without a connection. “Please Try Again - CE”
Transaction Timeouts	n	2	Incremented for each transaction that fails to receive a response after sending a request, including reversal timeouts.
Timeouts Due to Reversal Pending	n	2	Incremented for each reversal request that fails to receive a response.
Retransmits	n	2	Incremented for each FRMR or I frame that is retransmitted.
Receive Errors	n	2	Incremented when one of the following occurs: CRC error on the received SDLC frame Receive data overrun error - 3 bytes were received before the first byte could be read from the serial I/O device Polling “P” bit is not set in the received SDLC frame.
SNRM's In	n	2	Incremented for every SNRM frame received
SNRM's Out	n	2	*Not used*
RNR's In	n	2	Incremented for every RNR frame received.
RNR's Out	n	2	*Not used*
TEST's In	n	2	Incremented for every TEST frame received.
TEST's Out	n	2	Incremented for every TEST frame sent.
DM's In	n	2	Incremented for every DM frame received.
DM's Out	n	2	Incremented for every DM frame sent.
UA's In	n	2	*Not used*
UA's Out	n	2	Incremented for every UA frame sent.
FRMR's In	n	2	Incremented when the SDLC protocol enters error recovery state. SDLC enters error recovery state if one of the following occurs after a SNRM frame has been received Invalid SDLC frame is received A frame that does not support an I field is received containing an I field. Received I field is too big for the receive buffer. Received frame contains an invalid receive sequence number (Nr)
FRMR's Out	n	2	Incremented for every FRMR frame sent.

Field Name	Type	Length	Description
RTM Table Count	n	1	Value: 44h Terminal supports 4 response time boundaries. Response times are measured form the last field enter to receiving a host response.
Response Time Boundary 1	n	2	Value: 0080 (100 msec units)
Response Time Boundary 2	n	2	Value: 0160 (100 msec units)
Response Time Boundary 3	n	2	Value: 0450 (100 msec units)
Response Time Boundary 4	n	2	Value: 0900 (100 msec units)
Response Time Count 1	n	2	Transactions count < 8 seconds
Response Time Count 2	n	2	Transactions count < 16 seconds
Response Time Count 3	n	2	Transactions count < 45 seconds
Response Time Count 4	n	2	Transactions count < 90 seconds
Uptime in Minutes	n	3	*Not used*
Downtime in Minutes	n	3	*Not used*
Error Recovery Restarts	n	2	*Not used*
Delivery Errors	n	2	*Not used*
Mode of Operation	a	1	'E' - EPROM 'R' - RAM
Alarm Type	a	1	'N' - No Minor Alarms 'Y' - Minor Alarms
Transactions on Primary Telephone Number	n	2	Incremented for each authorization / financial transaction processed using the primary telephone number
Transactions on Secondary Telephone Number	n	2	Incremented for each authorization / financial transaction processed using the primary telephone number
Primary Redials	n	2	Incremented for each primary telephone number dial attempt, excluding the initial dial attempt for a transaction or function.
Secondary Redials	n	2	Incremented for each secondary telephone number dial attempt, excluding the initial dial attempt for a transaction or function.
Card Reader Errors	n	2	Incremented for each card read error.
Host Not Available Count	n	2	*Not used*
Time in Offline Mode	n	3	*Not used*
Card Reads	n	2	Incremented for each card read attempt, includes card read errors.
Reserved	n	6	*Not used*
ECR Baud Rate	n	1	*Not used*
Telephone Dial Options	n	1	See Initialization Parameters document for details
Merchant Password	n	2	Current terminal merchant password. See Initialization Parameters document for details
Amount Dual Entry Option	n	1	*Not used*
Operating Options	n	1	*Not used*
Local Terminal Options	n	1	See Initialization Parameters document for details
Reserved	n	2	*Not used*
Terminal Serial Number	a	8	Terminal serial number, as defined by function 2.
Last NMS Transmit Time	n	6	Value: YYMMDDHHMMSS Set by applications. This field is present depending on

Field Name	Type	Length	Description
			application loaded.

6.28.3. CHECK DATA

The check data fields are used to carry information to the check service. There are a number of check services supported by the terminal and several check data formats, depending on the service. Additional data is not valid with check services.
Message Type: 0100, Processing Code 04xxxx

6.28.3.1. DRIVER'S LICENSE METHOD

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	'00LL' - 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	

6.28.3.2. MICR NUMBER METHOD

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	'00LL' - BCD Length of data to follow
Verification Method	ans 2	2	'01' - Telecredit '04' - JBS
MICR Number	ans var	var	

6.28.3.3. ACCOUNT NUMBER METHOD

The field is optional since the account number data is included in field 35, 45, or 2.

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	'0002' - BCD Length of data to follow
Verification Method	ans 2	2	'03' - TeleCheck '07' - Bank Card

6.28.3.4. FULL MICR NUMBER METHOD

Field	Attribute	Bytes	Values
Length Attribute	n 3	2	0LLL - BCD Length of data to follow
Verification Method	ans 2	2	'09' - Full Micr Number
MICR Data	ans var	var	One or two data elements on MICR data. This field will either be the contents of the check reader or the manually entered account and route numbers

			The MICR data field is made up of 3 possible subfields. Each subfield has a 1 byte BCD length and a sub field id, as follows: Subfield Attr Len Values Length n 2 1 BCD length of subfield data Id ans 1 1 "C" - Check reader data "A" - Manual account data "R" - Manual route number data Data ans var Subfield data

6.28.4. ADDITIONAL DATA

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

The additional data can consist of one or more of the following fields immediately following each other. Each of the fields contains 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 the data to follow.
Additional Data (1)		var	First additional data element
Additional Data (2)		var	Second additional data elements
: : :	: : :	: : :	The additional data can be any number of data elements in any order. Each data element contains its own identifier and length. Unknown elements may be skipped over.
Additional Data (x)		var	

6.28.4.1. CASHIER DATA (10)

Cashier data is used to carry the clerk and till information.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0010' - BCD length of the data to follow
Table Id	ans 2	2	'10' - Cashier/Till information
Cashier Number	ans 4	4	Entered during transaction input
Till Number	ans 4	4	Entered during cashier sign-on

6.28.4.2. LODGING DETAILS (11)

The lodging details are additional fields associated with a lodging transaction. (Not CPS 2000 compliant). This information is not required at Check-In.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0026' - BCD length of the data to follow
Table Id	ans 2	2	'11'-Lodging details
Arrival Date	an 6	6	yymmdd (zero fill if not available)
Departure Date	an 6	6	yymmdd (zero fill if not available)
Room Rate	an 12	12	$$$$$$¢¢ (zero fill if not available)

6.28.4.3. DRIVER NUMBER (12)

The driver number is used by custom applications that may require additional information depending on the application.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0010' - BCD length of the data to follow
Table Id	ans 2	2	'12' - Driver number (Super Shuttle only)
Driver Number	an 8	8	Right justified, zero filled

6.28.4.4. PROGRAM ID (13)

The program ID is used for the Amex program ID

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0003' - BCD length of the data to follow
Table Id	ans 2	2	'13' – Program ID
Driver Number	an 1	1	Right justified, zero filled

6.28.4.5. LODGING FOLIO NUMBER (14)

This field is used is used in the Lodging Industry to pass the room folio number information..

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0027' - BCD length of the data to follow
Table Id	ans 2	2	'14' - Lodging Folio Number Indicator
Folio Number	an 25	25	Lodging Folio Number

6.28.4.6. LEVEL II COMMERCIAL CARD INDICATOR (15)

This table is used for both the Request and Response processing for Level II Commercial Card support in the Hypercom Host in the SPOS application only. Level II Commercial cards are the cards included in the Business, Corporate, and Purchase card categories. This table is used to ask whether a particular card is one of these three types of commercial cards. When the response indicates that the card is in the commercial grouping, the terminal will optionally prompt for additional data for the transaction. (see Table 73 - Level II Commercial Card Data)
This table contains information that is equivalent to the Visa Group 3 Version 1.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0003' - BCD length of the data to follow
Table Id	ans 2	2	'15' - Level II Commercial Card Indicator
Request Processing			
Request Code	an 1	1	Commercial card request indicator 0 - no request 1 - request card type
Response Processing			

Field	Attribute	Bytes	Values
Response Code	an 1	1	Commercial card response indicator B - Business Card R - Corporate Card S - Purchasing Card 0 (zero) - Non-Commercial Card " " (space) - Invalid request indicator received

6.28.4.7. CVV2 DATA (16)

This table is used for both the Request and Response processing for CVV2 support (Card Verification Value Two) in the Hypercom Host. CVV2 is a six-character field used to authenticate the physical presence of a card when the cardholder is not present at the time of the transaction. The CVV2 value appears as additional digits printed on the card signature line following the credit card account number. Response processing has not yet been implemented in the SPOS application.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0LLL' - BCD length of the data to follow
Table Id	ans 2	2	'16' - CVV2 data
Request Processing			
Request Value	an 6	6	The 6 character CVV2 Request Value sent to the Host **Position 1** 0 - CVV2 Value is intentionally not provided 1 - CVV2 Value is Present 2 - CVV2 Value is Present but illegible 9 - Cardholder states that no CVV2 value is imprinted **Position 2** 0 - Only the normal Response Code should be returned 1 - Both the Response Code and the CVV2 Result Code should be returned **Positions 3-6** The CVV2 Value as imprinted on the card (right-justify and space fill the entry) If position 1 = 0, 2, or 9, positions 3-6 should be space filled
Response Processing			
Result Code	an 1	1	The 1 character CVV2 Result Code returned from the Host M - CVV2 Match N - CVV2 No Match P - Not Processed S - Merchant has indicated that CVV2 is not present on card U - Issuer is not certified and/or has not provided Visa encryption keys

6.28.4.8. PAYMENT SERVICES 2000 (20)

If received in an authorization response, the terminal will store the PS2000 data and send it in the upload.

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0026' - BCD length of the data to follow
Table Id	ans	2	2	'20' - Payment Services 2000 Indicator
PS2000 Indicator	ans	1	1	Generated by acquirer
Transaction Identifier	ans	15	15	Generated by VISA
Validation Code	ans	4	4	Generated by VISA
VISA Response Code	ans	2	2	Response code from VISA
POS Entry Mode	ans	2	2	POS Entry mode sent to VISA by acquirer

6.28.4.9. PS2000 TERMINAL GENERATED DATA (21)

Terminal generated data required for PS2000 qualification. The authorized amount is that amount used to obtain the original on-line authorizations. It will not change when the transaction is adjusted or voided.

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0014' - BCD length of the data to follow
Table Id	ans	2	2	'21' - PS2000 Terminal Generated Data Indicator
Authorized Amount	an	12	12	Original authorized amount of the transactions. 12 digits, right justified, zero filled

6.28.4.10. ALTERNATE HOST RESPONSE (22)

The alternate host response field may be used to provide an alternate response display to the terminal. The default processing of display text is to format a terminal display based on the transaction response code. This field, when returned from the host in a response message, will be displayed instead of the terminal generated response.

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0042' - BCD length of the data to follow
Table Id	ans	2	2	'22' - Alternate Host Response indicator
Response Text	an	40	40	Alternate text to display as the host response

6.28.4.11. FLEET CARD DATA (23)

The fleet card data is used in oil and gas applications.

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0117' - BCD length of the data to follow
Table Id	ans	2	2	'23' - Fleet Card Data indicator
Driver Id	an	6	6	Left-justified, space filled
Odometer Reading	an	6	6	Right-justified, zero filled
Vehicle Number	an	5	5	Right-justified, zero filled
Product Restriction	an	2	2	'00' - Fuel card only '01' - Unrestricted card
Product 1	an	2	2	Product descriptor

Field	Attribute	Bytes	Values
Product 1 Gallon Amount	an 12	12	Right-justified, zero filled, three implied decimal places. The price per gallon for fuel
Product 1 Total Gallons	an 6	6	Right justified, zero filled, two implied decimal places
Product 1 Total Amount	an 12	12	Total amount for the first product descriptor
Product 2	an 2	2	Product descriptor
Product 2 Gallon Amount	an 12	12	Right-justified, zero filled, three implied decimal places. The price per gallon for fuel
Product 2 Total Gallons	an 6	6	Right justified, zero filled, two implied decimal places
Product 2 Total Amount	an 12	12	Total amount for the second product descriptor
Product 3	an 2	2	Product descriptor
Product 3 Gallon Amount	an 12	12	Right-justified, zero filled, three implied decimal places. The price per gallon for fuel
Product 3 Total Gallons	an 6	6	Right justified, zero filled, two implied decimal places
Product 3 Total Amount	an 12	12	Total amount for the third product descriptor

6.28.4.12. GECC DATA (24)

This data field is used in a custom application and should not be used in other applications.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0056' - BCD length of the data to follow
Table Id	ans 2	2	'24' - GECC specific information
Promotion Code	ans 2	2	Promotion code as entered during transaction (space filled if not available)
Promotion End Date	ans 4	4	mmyy (space filled if not available)
Cash Price	ans 8	8	$$$$$$¢¢ (space filled if not available)
Dept./LID Code	ans 8	8	Department codes, 4 bytes numeric, repeated up to 7 times
Sale Date	ans 6	6	mmddyy (space filled if not available)
Plan Code	ans 2	2	Plan code (space filled if not available)
P.O Number	ans 20	20	
Auth. User Number	ans 4	4	

6.28.4.13. NATIONAL CARD, OPTIONAL PROMPT 1 (25)

This data field is used in a custom application and should not be used in other applications.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0022' - BCD length of the data to follow
Table Id	ans 2	2	'25' National Card optional prompt 1
Optional Prompt 1	ans 20	20	Optional data as entered during transaction (left justified, blank filled)

6.28.4.14. NATIONAL CARD, OPTIONAL PROMPT 2 (26)

This data field is used in a custom application and should not be used in other applications.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0022' - BCD length of the data to follow
Table Id	ans 2	2	'26' National Card optional prompt 2
Optional Prompt 2	ans 20	20	Optional data as entered during transaction (left-justified, blank filled)

6.28.4.15. NATIONAL CARD DRIVER'S LICENSE NUMBER (27)

This data field is used in a custom application and should not be used in other applications.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0034' - BCD length of the data to follow
Table Id	ans 2	2	'27' - National Card Driver's License Number
Driver's License	ans 32	32	Driver's License number as entered during transaction (left-justified, blank filled)

6.28.4.16. RECONCILIATION TOTALS (28)

An alternate method to sending and receiving batch totals. This method allows totals to be sent on any message instead of just the settlement request message.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0LLL' - BCD length of the data to follow
Table Id	ans 2	2	'28' - Reconciliation Totals indicator
Capture Cards Sale Count	an 3	3	'000-999' - Total count of captured cards
Sales Amount	an 12	12	'$$$$$$$$$$¢¢'
Refund Count	an 3	3	'000-999'
Refund Amount	an 12	12	'$$$$$$$$$$¢¢'
Debit Cards Sale Count	an 3	3	'000-999' - Total count of debit cards
Sales Amount	an 12	12	'$$$$$$$$$$¢¢'
Refund Count	an 3	3	'000-999'
Refund Amount	an 12	12	'$$$$$$$$$$¢¢'
Authorize Cards Count	an 3	3	'000-999' - Total count of authorized cards Optional
Authorize Amount	an 12	12	'$$$$$$$$$$¢¢' Optional
Refund Count	an 3	3	'000-999' Optional
Refund Amount	an 12	12	'$$$$$$$$$$¢¢' Optional
Cash Adv. Sales Count	an 3	3	000-999 Optional
Sales Amount	an 12	12	$$$$$$$$$$¢¢ Optional
Refund Count	an 3	3	000-999 Optional
Refund Amount	an 12	12	$$$$$$$$$$¢¢ Optional

6.28.4.17. ADDITIONAL HOST PRINT DATA (29)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0LLL' - BCD length of the data to follow

Field	Attribute	Bytes	Values
Table Id.	ans 2	2	'29' - Additional Host Print Data indicator
Print Text	ans ..x	..x	Variable length print data. Data may include form feed (FF), carriage return (CR), line feed (LF) and ASCII characters between 20h and 7Ah. LF and CR behave in the same fashion. If 23 characters are sent without LF, CR, or FF, then an automatic CR is inserted. If the 24th character is LF or CR an additional blank line will be generated.

6.28.4.18. CPS 2000 DATA (30)

The CPS 2000 data field is used to carry data required for Visa CPS 2000 compliance in the Lodging Industry. This table is required only for Visa Cards.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0046' - BCD length of the data to follow
Table Id	ans 2	2	'30' - Reconciliation Totals indicator
ACI	an 1	1	Authorization Characteristics Indicator Request Values / Response Values Y = Normal — A = Qualified P = Preferred — E = Qualified check card I = Incremental — P = Qualified preferred I = Qualified incremental C = Qualified customer activated term. V = Qualified address verification N = Not qualified
Transaction Id	an 15	15	Value is returned by issuer on first response and needs to be echoed on succeeding requests.
Validation code	an 4	4	Value returned by issuer
Market specific data	an 1	1	Request Values / Response Values H = Hotel — H = Hotel approved A = Auto — A = Auto approved " "=None — N = invalid MS data
RPS	an 1	1	Requested payment service A = Retail 1 = Airline 1 2 = Airline 2 3 = Hotel preferred 4 = Hotel normal 5 = Auto preferred 6 = Auto normal 7 = Direct marketing 8 = Fuel
First auth amount	an 12	12	Amount used to obtain first authorization.
Duration of Stay	an 3	3	Length of stay. *This field added to the CPS 2000 definition 8/17/95. Check with acquirer for compatibility before implementing.*
Extra Charges Reason Code	an 1	1	0 = Not Applicable 1 = No Show *This field added to the CPS 2000 definition 04/15/99. Check with acquirer for compatibility before implementing*

Field	Attribute	Bytes	Values
Extra Charges	an 6	6	0 or space = Not Used 1 = Reserved 2 = Restaurant 3 = Gift Shop 4 = Mini-Bar 5 = Telephone 6 = Other 7 = Laundry *This field added to the CPS 2000 definition 04/15/99. Check with acquirer for compatibility before implementing*

6.28.4.19. HOST REFERENCE DATA (31)

Data is stored with the transaction in the journal. Terminal returns this data, in the same format, on adjustment advices and batch uploads. This data may be used by the host to provide reference data that must be retained with the transaction (i.e. CPS 2000) without requiring terminal application development. If this information is sent in the response to the terminal, the terminal will include the information in the upload.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'00LL' - BCD length of the data to follow
Table Id	ans 2	2	'31' - Host Reference Data indicator
Reference data	ans ..50	..50	Variable length

6.28.4.20. SIGNATURE DATA (32)

This field is used to pass signature data from the terminal to the host. If the signature data is longer than the largest buffer size, multiple transactions are required.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0LLL' - BCD length
Table Id	ans 2	2	'32' - Signature data
Batch record number	an 4	4	Unique transaction sequence number. Used to tie the signature data to the receipt and transaction data.
Equipment Type	an 2	2	'00'=NCR 5991 '01'=NCR 5981 '02'=Infowrite '04'=Hypercom® SigPad '05'=Hypercom® ICE
Signature capture code	an 2	2	'00' Signature data present '11' Customer refused to sign '12' Equipment down '13' Intentionally left blank '14' Signature on file at another store '15' Mail / phone order, no signature '16' Signature not applicable
Number of signature blocks	an 2	2	Total number of block that will be required to send the signature. Host uses this to anticipate the blocks following the transaction detail.

Field	Attribute	Bytes	Values
Signature length	an 3	3	Length of the signature segment to follow, this is not the total length of the signature data. Signature data, when uploaded in multiple blocks, will be concatenated by the host. This length will always be '00' in the financial record as signature data will follow in subsequent '0320' message type messages.
Signature data	b 700	...700	Variable length signature block.

6.28.4.21. DUK/PT KEY SERIAL NUMBER (33)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0022' - BCD length of the data to follow
Table Id	ans 2	2	'33' - DUK/PT data
DUK/PT Key Serial Number	ans 20	20	DUK/PT Key Serial Number (Terminal to host)

6.28.4.22. UPDATE DUK/PT INITIAL KEY (34)

Reserved for the unlikely event that DUK/PT initial keys are sent to the PIN pad.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0002' - BCD length of the data to follow
Table Id	ans 2	2	'34' - Update DUK/PT key

6.28.4.23. ADDITIONAL PROMPT DATA (35)

Provides information about the additional prompt data entered during the transaction process. The terminal may be set up, through initialization, to prompt for data not currently supported by the application.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'00LL' - BCD length of the data to follow
Table Id	ans 2	2	'35' - Additional Prompt Data. This field may contain multiple data fields, including the prompt length, prompt id. and additional data.
Prompt Length	n 2	4	Length of the data to follow.
Prompt Id.	a 2	2	Prompt Id as defined in the additional data prompt table entry.
Additional Data	ans ..30	..30	Data as entered by the user. For each data prompt there will be an additional prompt data field in the private use field. Data will be left justified in the max. field sized defined in additional prompt data. (see initialization specification)

6.28.4.24. AUTO CHECK VERIFICATION DATA (36)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0020' - BCD length of the data to follow
Table Id	ans 2	2	'36' - Auto check verification data.
Bank Code	ans 2	2	
Check Number	ans 16	16	

6.28.4.25. BATCH NUMBER (37)

Used to send the batch number to the host on every transaction.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0008' - BCD length of the data to follow

Field	Attribute	Bytes	Values
Table Id	ans 2	2	'37' - Batch number.
Batch Number	ans 6	6	

6.28.4.26. TIP AMOUNT (38)

An alternate method to sending the tip amount. The preferred method is to use field 54, additional amount, to send the tip amount. However, if the additional amounts field is used for other amounts, this method may be used.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0014' - BCD length of the data to follow
Table Id	ans 2	2	'38' - Tip amount
Tip Amount	ans 12	12	

6.28.4.27. TAX AMOUNT #1 (39)

Used to send a tax amount. The type of tax included is dependent on the application.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0014' - BCD length of the data to follow
Table Id	ans 2	2	'39' - Tax amount #1
Tax Amount	ans 12	12	

6.28.4.28. TAX AMOUNT #2 (40)

Used to send a tax amount if there is more than one tax amount to be sent. The type of tax included is dependent on the application.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0014' - BCD length of the data to follow
Table Id	ans 2	2	'40' - Tax amount #2
Tax Amount	ans 12	12	

6.28.4.29. CASH BACK AMOUNT (41)

An alternate method to sending the cash back amount. Earlier applications had a conflict when using Field 54, Additional Amounts, because the cash back and tip could not be sent in the same transaction.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0014' - BCD length of the data to follow
Table Id	ans 2	2	'41' - Cash back amount
Cashback Amount	ans 12	12	

6.28.4.30. SCHEDULE COMMAND (42)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0042' - BCD length of the data to follow
Table Id	ans 2	2	'42' - Schedule Command

Field	Attribute	Bytes	Values
Schedule Type	ans 2	2	'00' = No action '01' = Schedule Program Downline load '02' = Schedule Initialization
Schedule Date and Time	ans 12	12	Format YYMMDDHHMMSS 999999999999 instructs the terminal to take the action immediately.
Telephone Number Type	ans 2	2	'00' = Do not use telephone number information that follows '01' = Use the following temporary telephone number '02' = Use primary transaction telephone number from first acquirer table as a temporary telephone number '03' = Permanent change (*Not Implemented*)
Telephone Number	ans 24	24	Temporary telephone number to use for the schedule action. Left justified and space filled.

6.28.4.31. RECEIPT FACSIMILE DATA (43)

Used to send the receipt data to the signature capture host so that a facsimile receipt can be reproduced.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0LLL' - BCD length of the data to follow
Table Id	ans 2	2	'43' - Receipt Facsimile Data (Signature Capture Implementation)
Batch record number	an 4	4	Unique transaction sequence number. Used to tie the print data to the transaction and signature data.
Equipment Type	an 2	2	'00'=HC212 (P4) Cols 23 Preprinted '01'=HC215 (P7) Cols 23/31 Preprinted '02'=HC211 (P7 Roll) Cols 33/44 Roll '03'=VF250 Cols 40 Roll EOL=LF 'F0'=HC192 (T7P) Cols 40 Roll 'F1'=HC190 (T7P) Cols 24 Roll 'F2'=HC192 (T7P) Cols 40 Scaled signature
Print code	an 2	2	'00'=Print data present
Remaining blocks	an 2	2	Number of print blocks left.
Print length	an 3	3	Lengths of print text to follow.

Field	Attribute	Bytes	Values
Print data	b .700	...700	Variable length print text formatted as follows: The first portion of the **1st record** will contain the print text header. The remaining bytes and records will contain the print text. **Print Text Header for Version 1 (6 bytes):** Text Version an 2 '01' Version of formatted text. Sig Offset an 4 Byte count offset of signature **Print Text Header for Version 2 (10 bytes):** Text Version an 2 '02' Version of formatted text. Sig Offset an 4 Byte count offset of signature Dictionary ID an 4 Batch Record Number for reference receipt. If 0, then this receipt contains no dictionary references. **Print Text** Data will include ASCII printable characters, print control characters and escape sequences. Nulls (00h) should be treated as spaces. Valid print control and escape sequences: New Line LF or CR/LF New Page FF Condense on <Esc>k1 Condense off <Esc>k0 Double on <Esc>W1 or 0Eh or 1Eh Double off <Esc>W0 or 14h or 1Fh Once the maximum characters per column is filled, an automatic LF should be generated (unless noted by EOL=LF). The maximum characters per column depends on the printer type and print mode. (i.e. Normal/Condensed or Double Normal/Condensed).

6.28.4.32. SURCHARGE AMOUNT (44)

Used to pass the surcharge amount that may be associated with the transaction.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0014' - BCD length of the data to follow
Table Id	ans 2	2	'44' - Surcharge amount
Surcharge Amount	ans 12	12	

6.28.4.33. PAYMENT PLAN (45)

Used to select the payment plan and the number of payments for the items purchased. The actual values used in the "number of payments" and "pay plan" fields are defined by the acquirer.

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0006' - BCD length of the data to follow
Table Id	ans	2	2	'45' - Payment Plan
Number of Payments	an	2	2	Number of payments selected at the point of purchase.
Pay Plan	ans	2	2	The payment plan selected at the point of purchase.

6.28.4.34. EBT TERMINAL DATA (47)

Used to pass EBT specific data to the host.

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0043' - BCD length of the data to follow
Table Id	ans	2	2	'47' - EBT Terminal Data
Clerk Id	ans	10	10	Left justified, space filled
Supervisor Id	ans	10	10	Left justified, space filled
Voucher Number	ans	15	15	Left justified, space filled
Generation Number	an	6	6	Left justified, space filled

6.28.4.35. EBT RESPONSE DATA (48)

Used to pass EBT specific data from the host to the terminal in the SPOS application only.

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0026' - BCD length of the data to follow
Table Id	ans	2	2	'48' - EBT Response Data
EBT Food Balance	an	8	8	Right justified. Can contain leading "-"
EBT Cash Balance	an	8	8	Right justified. Can contain leading "-"
Case Number	an	8	8	Left justified, space filled

6.28.4.36. TERMINAL STATUS (49)

Provides more information about the terminal's current status.

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0016' - BCD length of the data to follow
Table Id	ans	2	2	'49' - Terminal Status
Batch Status	ans	1	1	"0" Journal is empty "1" Journal contains transactions
Initialization Table Status	ans	1	1	"0" Tables are good "1" Tables are corrupted
EPROM Version	an	10	10	Boot version
Printer Type	an	2	2	The printer type as defined in the boot record. "00" T7E "01" T7P "06" T77F "07" T77S

6.28.4.37. EXTENDED PRODUCT CODES (50)

Field	Attribute	Bytes	Values

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0021' - BCD length of the data to follow
Table Id	ans 2	2	'50' - Extended Product Codes. FNBABQ software only.
Product Code	ans 2	2	Prompt Id.
Units	ans 5	5	Number of units
Amount	ans 12	12	Unit amount

6.28.4.38. FREQUENCY DATA RESPONSE (51)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0008' - BCD length of the data to follow
Table Id	ans 2	2	'51' - Frequency Data Response
Program Id.	an 3	3	001 Premier dining and entertainment gold
Discount Percentage	an 3	3	Percentage to use when calculating the discount

6.28.4.39. FREQUENCY DATA REQUEST (52)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0020' - BCD length of the data to follow
Table Id	ans 2	2	'52' - Frequency Data Request
Program Id.	an 3	3	001 Premier dining and entertainment gold
Discount Percentage	an 3	3	Percentage to use when calculating the discount, obtained from host response.
Basis Amount	an 12	12	This is the amount that the discount was applied to.

6.28.4.40. MISCELLANEOUS AMOUNT (53)

Use dependant on terminal application.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0014' - BCD length of the data to follow
Table Id	ans 2	2	'53' -Miscellaneous Amount
Amount	an 12	12	

6.28.4.41. ADDRESS VERIFICATION DATA (54)

Sent to the host for mail order transactions requesting address verification. Uses of the data fields are host dependent.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0031' - BCD length of the data to follow
Table Id	ans 2	2	'54' - AVS Data Request
Zip Code	an 9	9	
Address	an 20	20	As entered at the "enter address" prompt

6.28.4.42. AVS RESPONSE (55)

Host response to address verification request.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	‘0005’ - BCD length of the data to follow
Table Id	ans 2	2	‘55’ - AVS Request
Address Match	an 1	1	“ ” - No response “N” - Street address does not match “Y” - Street address match “X” - Service unavailable or not completed
ZIP Code Match	an 1	1	“ ” - No response “N” - ZIP code does not match “Y” - ZIP code match “X” - Service unavailable or not completed
AVS Response Code	an 1	1	AVS response code from the authorizing host. The terminal uses the AVS response code to determine the response. Valid codes are; “A” - Address match, ZIP mismatch “E” - AVS error(Transaction does not support AVS) “N” - Address mismatch, ZIP mismatch “R” - Retry AVS (issuer system unavailable) “S” - AVS service not supported “U” - Address is unavailable "W" - Address mismatch, 9-digit ZIP match "X" - Exact match of both address and 9-digit ZIP "Y" - Exact match of both address and 5-digit ZIP "Z" - Address mismatch, 5-digit ZIP match

6.28.4.43. PAYMENT PLAN / PRE-DATED TRANSACTION DATA (56)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	‘0018’ - BCD length of the data to follow
Table Id	ans 2	2	‘56’ - Payment Plan / Pre-Dated Transaction Data
Post Date	an 6	6	The date that the transaction is going to be poseted. Format: yymmdd
Risk Type	an 1	1	Who accepts the responsibility of paying for the transaction, the acquirer or the merchant
reserved	ans 6	6	
Number of Payments	an 2	2	How many payments this transaction will be devided.
Payment Plan	an	1	

6.28.4.44. ORIGINAL TRANSACTION DATE (57)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	‘0008’ - BCD length of the data to follow
Table Id	ans 2	2	‘57’ - Original Transaction Date Data
Original Transaction Date	an 6	6	Entered during transaction input. Typically used during off-line sale.

6.28.4.45. MICR NUMBER (58)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0LLL' - BCD length of the data to follow
Table Id	ans 2	2	'58' - MICR Number Data
MICR Entry Type	ans 1	1	'0'= Manual entry '1' = Check reader entry
MICR Number	an ..32	..32	MICR number as entered during the transaction or read from MICR reader.

6.28.4.46. TRANSIT/BANK NUMBER (59)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0011' - BCD length of the data to follow
Table Id	ans 2	2	'59' - Trans/Bank Number Data
Transit/Bank Number	an 9	9	Transit/Bank number as entered during transaction (left-justified, space filled.)

6.28.4.47. ACCOUNT NUMBER (60)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0LLL' - BCD length of the data to follow
Table Id	ans 2	2	'60' - Account Number Data
Account Number	an ..18	..18	Account number as entered during transaction

6.28.4.48. DRIVER'S LICENSE NUMBER (61)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'00LL' - BCD length of the data to follow
Table Id	ans 2	2	'61' - Driver's License Number Data
Driver's License Number	an ..32	..32	Driver's license number as entered during transaction.

6.28.4.49. STATE CODE (62)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0004' - BCD length of the data to follow
Table Id	ans 2	2	'62' - State Code Data
State Code	an 2	2	State Code as entered during the transaction

6.28.4.50. BIRTH DATE (63)

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0010' - BCD length of the data to follow
Table Id	ans	2	2	'63' - Birth Date Data
Date of Birth	an	8	8	Format MMDDYYYY, can also use MMDDYY, length 6.

6.28.4.51. CHECK NUMBER (64)

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0LLL' - BCD length of the data to follow
Table Id	ans	2	2	'64' - Check Number Data
Check Number	an	..10	..10	Check number as entered during transaction input.

6.28.4.52. HLA CHECK FORMAT (65)

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0050' - BCD length of the data to follow
Table Id	ans	2	2	'65' - HLA Check Format
Check Number	an	8	8	Check number as entered during transaction input.
Bank Number	an	3	3	Bank number as entered during transaction input.
Account Number	an	11	8	Account number as entered during transaction input.
Amount	an	10	10	Input by merchant, decimal point included
Type of Id	an	2	2	Input by merchant
Id. Number	an	12	12	Input by merchant

6.28.4.53. ISSUER IDENTIFICATION (66)

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0004' - BCD length of the data to follow
Table Id	ans	2	2	'66' - Issuer Identification Data
Issuer Id.	ans	2	2	Used to identify the issuer for this transaction.

6.28.4.54. CS DATA (67)

Field	Attribute		Bytes	Values
Additional Data Length	n	4	2	'0023' - BCD length of the data to follow
Table Id	ans	2	2	'67' - CS Data
Random Number	b	32	4	32 bit random number
Card data	ans	16	16	First 16 bytes read from card.
Challenge Response	b	8	1	Challenge response from card.

6.28.4.55. CUSTOMER ID / PO NUMBER (68)

This table is no longer used, it has been replaced by the information in Table 73 - Level II Commercial Card Data. This table is being retained only for compatibility with previous versions. Implemented in the SLOD application only.

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0LLL' - BCD length of the data to follow
Table Id	ans 2	2	'68' - Customer Id / PO Number Data
Customer Id / PO Number	ans var	var	Typically used for purchase card transactions

6.28.4.56. FREIGHT AMOUNT (69)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0014' - BCD length of the data to follow
Table Id	ans 2	2	'69' - Freight amount
Freight Amount	ans 12	12	

6.28.4.57. DUTY AMOUNT (70)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0014' - BCD length of the data to follow
Table Id	ans 2	2	'70' - Duty amount
Duty Amount	ans 12	12	

6.28.4.58. DESTINATION ZIP CODE (71)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0LLL' - BCD length of the data to follow
Table Id	ans 2	2	'71' - Destination Zip Code
Destination Zip Code	ans var	var	Typically used for purchase card transactions

6.28.4.59. PIN PAD DISPLAY TEXT (72)

Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0LLL' - BCD length of the data to follow
Table Id	ans 2	2	'72' - PIN Pad display text data
PIN Pad Display Text	ans var	var	Data to be displayed on the PIN pad display.

6.28.4.60. LEVEL II COMMERCIAL CARD DATA (73)

This table is used to transmit additional data for Level II Commercial Cards. Level II Commercial cards are the cards included in the Business, Corporate, and Purchase card categories. Table 15 (Level II Commercial Card Indicator) is used to determine if a card is in the commercial grouping. If it is, the terminal will optionally prompt for additional data for the transaction and transmit it in this table.

This table contains information that is equivalent to the Visa Group 22: Non-T&E Commercial Card Level II, (US only). Implemented in the SPOS application only.

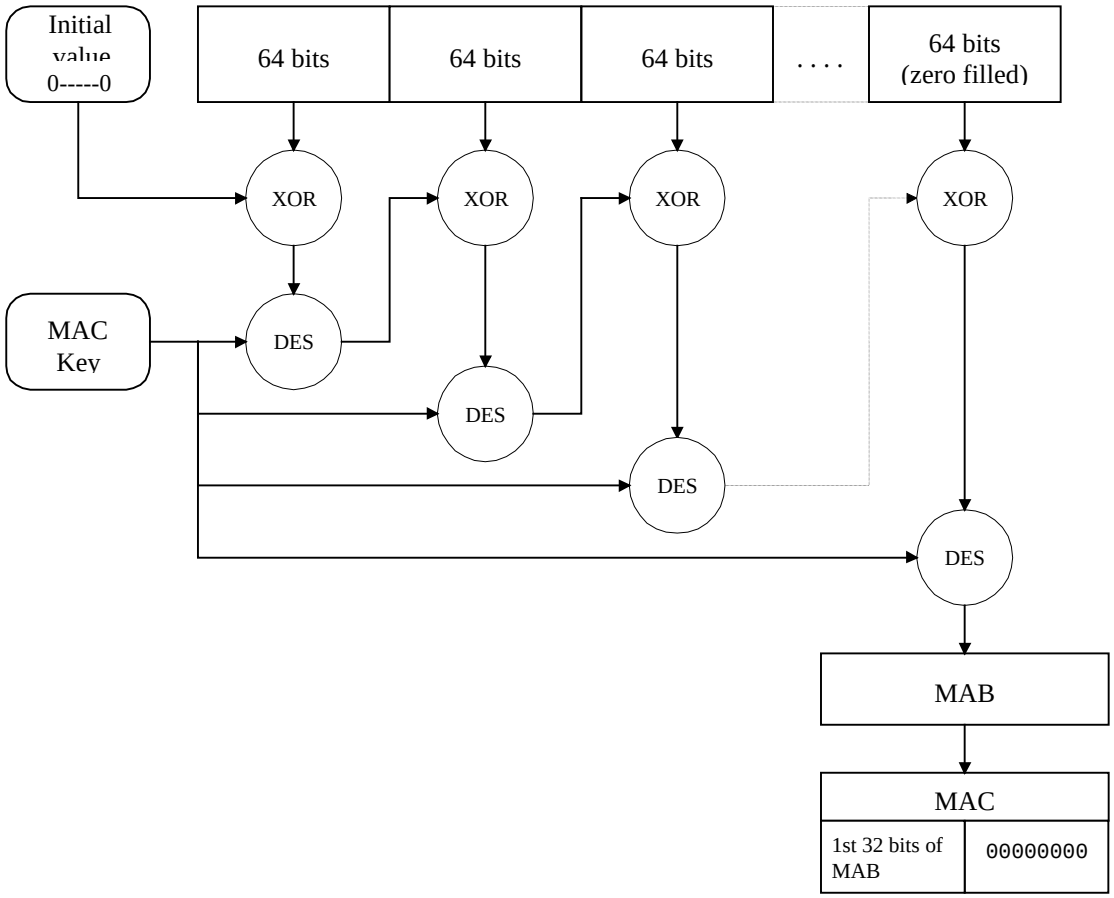
Field	Attribute	Bytes	Values
Additional Data Length	n 4	2	'0032' - BCD length of the data to follow
Table Id	ans 2	2	'73' - Level II Commercial Card Data
Optional Amount ID	an 1	1	Optional Amount Identifier describing the characteristics of the amount in the Optional Amount Field. 0 - Not Used 1 - Local or Sales Tax Amount 2 - Tax Exempt
Optional Amount	n 12	12	Right-justified and zero-filled amount, default is zeros
Purchase Order #	an 17	17	Purchase Order Number supplied by the cardholder, left justified and space filled, default is spaces. This field is also referred to as the Customer Reference ID by Visa

6.29. MESSAGE AUTHENTICATOR CODE, FIELD 64

Hypercom implements two methods for MAC'ing a messages. The first is the full ANSI X9.9 process. The second, implemented to speed up processing time, performs the DES algorithm on the final block instead of every 64 bits.

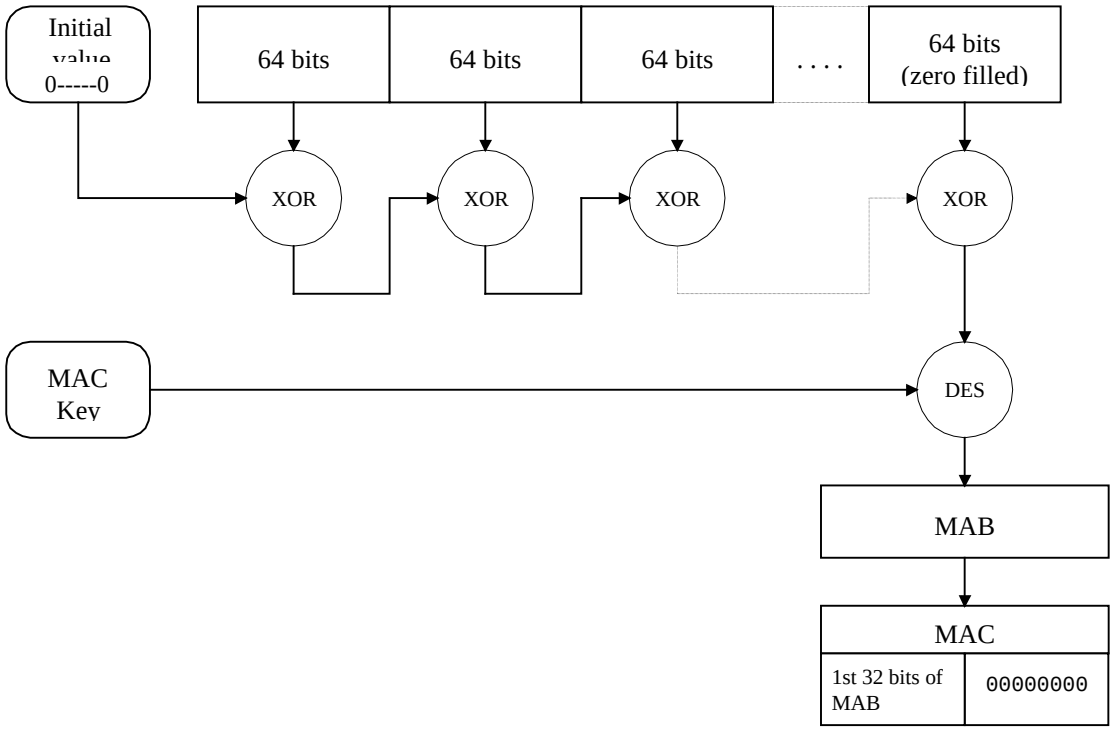
6.29.1. ANSI X9.9 MAC PROCESS

1. Divide the transaction into 64 bit (8 byte) blocks. If necessary, zero fill the last block to obtain a full 64 bits.
2. The initial value is always set to zero.
3. Exclusive-Or the first block and the initial value
4. Perform a DES encryption using the MAC key.
5. Exclusive-Or the encrypted block with the next message block. Repeat operation for all remaining blocks.
6. Final output will be the Message Authentication Block (MAB). The Message Authentication Code (MAC) is the first 32 bits of the MAB, left justified and zero filled.



6.29.2. HYPERCOM MAC

For performance purposes, faster method of calculating the MAC was developed. Although not as secure as the full MAC algorithm, this method still performed a comfortable level of security while also improving the calculation speed.



6.30. Example Transaction Request Message

The following is a sample sale transaction. Each field in the message has been separated to show where each field of the message starts and ends. Above the data line is an item number that is used to describe the type of field.

1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
30	xx	60	0003	8100	0220	3020058020C0040 E	020000	00000000150 0	006499	0022	0003	00

14	*15*	*16*
29371449635398431D891289017666 F	373030303030303 0	3031323334353637383930303030303 0

17	*18*	*19*
00123030303030303030303035303 0	000830312020202020202 0	000639393838373 7

20
0022001031303120202031202020000833353030414243 44

Message Details:

1	HDLC poll address	30h
2	LC control byte	
3	TPDU Id.,	60h (defines frame to be a transaction)
4	Destination address	0003
5	Originator address	8100
6	Message type	0220
7	Bit map:	3020058020C0040E

3	0	2	0	0	5	8	0	2	0	C	0	0	4	0	E
0011	0000	0010	0000	0000	0101	1000	0000	0010	0000	1100	0000	0000	0100	0000	1110

The following are fields present as defined by the bitmap:

8	Field 3, Processing code	020000 (Adjust, debit)
9	Field 4, Transaction amount	$15.00
10	Field 11, STAN	006499
11	Field 22, POS Entry mode	0022 (MSR entered, no PIN entry capability)
12	Field 24, NII	0003
13	Field 25, POS condition code	00
14	Field 35, Track 2 data	371449635398431
15	Field 41, Terminal Id.	“70000000”
16	Field 42, Merchant Id.	“012345678900000”
17	Field 54, Additional amounts	$0.50
18	Field 61, Private use field 61,	“01”, Descriptor code
19	Field 62, Private use field 62,	“998877”, Invoice number
20	Field 63, Private use field 63,	Cashier data and Additional prompt data (The following is the definition of each data element in private use field 63)

0022	Overall field length of 20 bytes
0010	Length of first sub-field, 10 bytes
3130	“10”, Sub field is cashier data
31202020	“1”, Server Id
31202020	“1”, Till number
0008	Length of next sub-field, 8 bytes
3331	“31”, sub field is additional prompt
3030	“00”, prompt Id
41424344	“ABCD”, prompt data

7. TRANSACTION FORMAT DEFINITIONS

The following sections define the transactions that may be used by a POS application depending on the use of the application.

7.1. ADJUST, CREDIT

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	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0220	0230	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C06		
03	Processing Code	n 6	22a00x	22a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M		
13	Date, Local Trans.	n 4	M		
14	Date, Expiration	n 4	C06		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12	M	M	Request contains original retrieval reference no.
38	Auth. Id. Response	an 6	M		
39	Response Code	an 2	M	M	Host should always send ‘00’ response code
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120	O		
55	ICC Sys Related Data	b ...255			
60	Original Amount	ans ...999	O		Original amount before adjustment or void
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.2. 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	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0220	0230	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C06		
03	Processing Code	n 6	02a00x	02a00x	
04	Amount, Trans.	n 12	M	O	New transaction amount after adjustment
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M		
13	Date, Local Trans.	n 4	M		
14	Date, Expiration	n 4	C06		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12	M	M	Request contains original retrieval reference no.
38	Auth. Id. Response	an 6	M		
39	Response Code	an 2	M	M	Host should always send ‘00’ response code
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120	O		
55	ICC Sys Related Data	b ...255			
60	Original Amount	ans ...999	O		Original amount before adjustment or void
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.3. AUTHORIZATION

The authorization transaction is used to obtain a authorization for a credit card number. It is initiated when the "capture" flag in the issuer table is "N". The message type is a 0100 and the transaction is NOT stored in the terminal batch when approved.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0100	0110	
	Bit Map	b 64	M	M	
02	Primary Acct. Num.	n ..19	C01		
03	Processing Code	n 6	00a00x	00a00x	
04	Amount, Trans.	n 12	M	O	Amount is verified when included in response
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref. No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999	O		
52	PIN Data	b 64	O		If PINs are selected
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255	C07	O	
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		If Product codes are selected
62	Invoice/ECR Ref #	ans ...999	O		If Invoice/ECR Ref # is selected
63	Additional Data	ans ...999	O	O	If additional data is available
64	Message Auth. Code	b 64	O	O	

7.4. BALANCE INQUIRY

The balance inquiry is used to obtain the balance of a debit card. The transaction reponse is displayed on the PIN pad device.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0100	0110	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	31a00x	31a00x	
04	Amount, Trans.	n 12		M	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120		O	
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Private Use	ans ...999			
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.5. BATCH DOWN LINE LOAD REQUEST

The batch down load line load request is used to request the host to send the current open batch to the terminal. If a “00” response code is received, the terminal will request each transaction using a “0300” message type.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0500	0510	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6	95000x	95000x	
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4			
22	POS Entry Mode	n 3			
24	NII	n 3	M	M	
25	POS Condition Code	n 2			
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6			
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Batch Number	ans ...999	O		Open batch number
61	Private Use	ans ...999			
62	Private Use	ans ...999			
63	Totals/Resp Text	ans ...999			
64	Message Auth. Code	b 64	O	O	

7.6. BATCH DOWNLOAD

This transaction set is used to down load a batch to the terminal from the host. It is the reverse process as a batch up load.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0300	0310	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19		C06	
03	Processing Code	n 6	M	M	Same as original transaction
04	Amount, Trans.	n 12		M	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4		C06	
22	POS Entry Mode	n 3		M	
24	NII	n 3	M	M	
25	POS Condition Code	n 2		M	
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	If original response code is not present, assume ‘00’
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120		O	
55	ICC Sys Related Data	b ...255			
60	Original Data	ans ...999		O	
61	Product Codes	ans ...999		O	
62	Invoice/ECR Ref. #	ans ...999		O	
63	Additional Data	ans ...999		O	
64	Message Auth. Code	b 64	O	O	

7.7. BATCH UPLOAD

This is the transaction set used to perform a batch up load. This occurs when the terminal an host are out of balance or store and forward configuration.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0320	0330	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C06		
03	Processing Code	n 6	M	M	Same as original transaction
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M	M	
13	Date, Local Trans.	n 4	M	M	
14	Date, Expiration	n 4	C06		
22	POS Entry Mode	n 3	M		
24	NII	n 3	M		
25	POS Condition Code	n 2	M		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12	M	M	
38	Auth. Id. Response	an 6	O		
39	Response Code	an 2	O	M	If original response code is not present, assume ‘00’
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120	O		
55	ICC Sys Related Data	b ...255			
60	Original Data	ans ...999	O		
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.8. 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 Transaction 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	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0100	0110	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	38a00x	38a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.9. CASH

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0200	0210	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	01a00x	01a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255	C07	O	
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.10. CHECK-IN

The Check-In is a Lodging application transaction that obtains the initial authorization for the pending Check-Out.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0100	0110	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	00a00x	00a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999	O		
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Private Use	ans ...999	O		Product Code
62	Private Use	ans ...999	O		Invoice Number
63	Private Use	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.11. CHECK VERIFICATION

The Check Verification method is selected by the Check Verification Options in the Terminal Configuration.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0100	0110	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C06	x	
03	Processing Code	n 6	04a00x	04a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C06		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C06		
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Private Use	ans ...999			
62	Invoice/ECR Ref. #	ans ...999	O		
63	Check Data	ans ...999	M		
64	Message Auth. Code	b 64	O	O	

7.12. ERC UPLOAD - HEADER

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0500	0510	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6	92000x	92000x	
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4			
22	POS Entry Mode	n 3			
24	NII	n 3	M	M	From ERC Host Table
25	POS Condition Code	n 2			
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6			
39	Response Code	an 2		M	“95”
41	Terminal Id	ans 8	M	M	From ERC Host Table
42	Card Acq. Id	ans 15	M		From ERC Host Table
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	???
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Batch Number	ans ...999	M		Settlement batch number (From ERC Host Table)
61	Private Use	ans ...999			
62	Private Use	ans ...999			
63	Totals/Resp Text	ans ...999	M	O	Host response text is returned
64	Message Auth. Code	b 64	O	O	???

7.13. ERC UPLOAD - DATA

Used to send receipt and signature data to an ERC capture retrieval system.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0320	0330	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	M		
03	Processing Code	n 6	M	M	Same as original transaction
04	Amount, Trans.	n 12	M		
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M	M	
13	Date, Local Trans.	n 4	M	M	
14	Date, Expiration	n 4	M		
22	POS Entry Mode	n 3	M		
24	NII	n 3	M		From ERC Host Table
25	POS Condition Code	n 2	M		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12	M	M	
38	Auth. Id. Response	an 6			
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	From ERC Host Table
42	Card Acq. Id	ans 15	M		From ERC Host Table
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Original Data	ans ...999			
61	Product Codes	ans ...999			
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	M		Receipt Text & Signature segment
64	Message Auth. Code	b 64	O	O	

7.14. ERC UPLOAD - TRAILER

If the host requests the terminal to upload its batch, the terminal sends the settlement trailer following the upload.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0500	0510	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6	96000x	96000x	
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4			
22	POS Entry Mode	n 3			
24	NII	n 3	M	M	
25	POS Condition Code	n 2			
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6			
39	Response Code	an 2		M	“00” to accept, “95” to repeat upload.
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Batch Number	ans ...999	M		Settlement batch number
61	Private Use	ans ...999			
62	Private Use	ans ...999			
63	Totals/Resp Text	ans ...999	M	O	Host response text is returned
64	Message Auth. Code	b 64	O	O	

7.15. GUARANTEED LATE ARRIVAL

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0220	0230	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C06		
03	Processing Code	n 6	90a00x	90a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M	M	
13	Date, Local Trans.	n 4	M	M	
14	Date, Expiration	n 4	C06		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	01		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6	M		
39	Response Code	an 2	M	M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.16. INITIALIZATION - T4/T6

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0800	0810	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6			
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
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	M	M	
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		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15			
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Terminal Config.	ans ...999		O	
61	Card Def. Table	ans ...999		O	
62	Product Code Table	ans ...999		O	
63	Table Download	ans ...999		O	
64	Message Auth. Code	b 64			

7.17. INITIALIZATION - T7

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0800	0810	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6	93000x	93000x	
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
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	M	M	From terminal data (EPROM)
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		M	
41	Terminal Id	ans 8	M	M	Terminal serial number (Function 2)
42	Card Acq. Id	ans 15			
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Initialization Table	ans ...999	M	O	Request sends software revision
61	Private Use	ans ...999			
62	Private Use	ans ...999			
63	Private Use	ans ...999			
64	Message Auth. Code	b 64			

7.18. LOGON

This transaction is used to obtain debit key data from the host.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0800	0810	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6	92000x	92000x	
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4			
22	POS Entry Mode	n 3			
24	NII	n 3	M	M	
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		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15		O	
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Private Use	ans ...999			
62	Logon Data	ans ...999		M	
63	Private Use	ans ...999			
64	Message Auth. Code	b 64	O	O	

7.19. MAIL ORDER

The Mail Order transaction is a sale transaction where the customer is not present at the time of the sale.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	200	210	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	M		
03	Processing Code	n 6	00a00x	00a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	012		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	08		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120	O		
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Private Use	ans ...999	O		
62	Private Use	ans ...999	O		
63	Private Use	ans ...999	O	O	Address Verification Service (AVS)
64	Message Auth. Code	b 64	O	O	

7.20. OFF-LINE REFUND

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

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0220	0230	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C06		
03	Processing Code	n 6	20a00x	20a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M		
13	Date, Local Trans.	n 4	M		
14	Date, Expiration	n 4	C06		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6	M		
39	Response Code	an 2		M	Host should always send ‘00’ response code
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.21. OFF-LINE 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	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0220	0230	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C06		
03	Processing Code	n 6	00a00x	00a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M		
13	Date, Local Trans.	n 4	M		
14	Date, Expiration	n 4	C06		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6	M		
39	Response Code	an 2		M	Host should always send ‘00’ response code
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.22. PARTIAL AUTH REVERSAL

The partial auth reversal transaction is done in the Lodging application at Check-Out when the final amount of the sale is less than the authorized amount. The Partial Auth Reversal is done for the difference between the existing authorization and the final sale amount.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	420	430	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C04		
03	Processing Code	n 6	00a00x	00a00x	Same as original from the first Check-In
04	Amount, Trans.	n 12	M	O	New transaction amount (New total amount)
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M	M	
13	Date, Local Trans.	n 4	M	M	
14	Date, Expiration	n 4	C04		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	M		
35	Track 2 Data	z ..37	C04		
37	Retrieval Ref No.	an 12	M	M	Request contains original RRN
38	Auth. Id. Response	an 6	M	O	
39	Response Code	an 2	M	M	Host should always ?? original or last ??
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120	O		Total authorized amount
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999	O		Original Amount
61	Private Use	ans ...999	O		Product Codes
62	Private Use	ans ...999	O		Invoice Number
63	Private Use	ans ...999	O	O	Additional Data, Table 30 for Visa Cards
64	Message Auth. Code	b 64	O	O	

7.23. PLEASE WAIT ADVICE

This is an unsolicited Host message that causes the terminal to display 'Please Wait' and to extend its transaction time-out. There is no corresponding request message for the please wait response.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4		0830	
	Bit Map	b 64		M	
02	Primary Acct Num.	n ..19		900001	
03	Processing Code	n 6			
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6		M	
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		M	
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		M	
42	Card Acq. Id	ans 15			
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16		O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
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			

7.24. PRE-AUTHORIZATION

The Pre-Authorization transaction is normally restricted to use in automated gas stations which may be either attended or unattended. The cards accepted, (debit, proprietary or credit) and the associated processing/entry requirements (PIN entry, Product Codes, etc.) are defined in the Card Processing Options and Card Definition Tables.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0100	0110	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	30a00x	30a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	06		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.25. PREPAID CARD ACTIVATION

The PrePaid Card Activation is used to notify a host processor to activate a prepaid card account. This transaction is used when a prepaid card issuer offers pre-denominated cards. This transaction is processed online and the host must approve the transaction before the terminal stores it in the journal.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0300	0310	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	48a00x	48a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	M		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120		O	The balance on the prepaid card. Will print on receipt if the field is filled.
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.26. PREPAID CARD DEACTIVATION

The PrePaid Card Deactivation is used to notify a host processor to deactivate a prepaid card account. The disposition of the remaining account balance, if any, is determined by the procedures of the card issuer since the accounting of funds for a prepaid card is a separate process. This transaction is processed online and the host must approve the transaction before the terminal stores it in the journal.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0300	0310	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	49a00x	49a00x	
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	M		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120		O	The balance on the prepaid card. Will print on receipt if the field is filled.
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.27. PREPAID CARD ISSUE/RE-ISSUE

The PrePaid Card Issue is used to credit a prepaid card account. Depending on the host processor, this transaction can credit the prepaid account only, it can credit the account and activate it, or it can add credit to an existing valued and activated account. This transaction is run separately from the funds transaction since cash, check, credit, debit, or EBT card may pay for a prepaid card. This transaction is processed online and the host must approve the transaction before the terminal stores it in the journal.

(This transaction can be voided by the standard Void, Credit transaction)

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0200	0210	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	20a00x	20a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	M		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120		O	The balance on the prepaid card. Will print on receipt if the field is filled.
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.28. PREPAID CARD REDEMPTION (SALE)

The PrePaid Card Redemption is a sale transaction where a prepaid card is used. It is an authorization request that, when approved, is stored in the terminal's batch for later settlement. For PrePaid Cards, a transaction can be approved with a request to obtain additional funds from the cardholder. This "split" transaction will have a specific response code and the terminal will prompt for the balance due. At that point, the merchant can choose to either void or complete the transaction, depending on whether the cardholder wishes to fund the balance due amount.

(This transaction can be voided by the standard Void, Sale transaction)

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0200	0210	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	00aa0x	00aa0x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	M		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	00 if completed, 10 (Approved for Partial Amount) if funds must be collected from the cardholder.
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120		O	If response code is 00, the remaining balance on the prepaid card. If response code is 10, the amount that must be collected from the cardholder.
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.29. RE-AUTHORIZATION

The Re-Authorization transaction is typically used in the Lodging application when additional charges to the folio exceed the existing authorization and any re-authorization limit.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0100	0110	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C04		
03	Processing Code	n 6	02a00x	02a00x	
04	Amount, Trans.	n 12	M	O	Additional authorization amount
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M		
13	Date, Local Trans.	n 4	M		
14	Date, Expiration	n 4	C04		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12	M	M	Request contains original RRN
38	Auth. Id. Response	an 6	M		
39	Response Code	an 2	M	M	?? Last response code
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120	O		
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Private Use	ans ...999	O		Product Codes
62	Private Use	ans ...999	O		Invoice/ECR Ref. #
63	Private Use	ans ...999	O	O	Additional Data, Table 30 for Visa cards
64	Message Auth. Code	b 64	O	O	

Tran ID is required for Visa cards.

7.30. REFUND

Refund is used to credit a card holder account. This is used when the original transaction is not stored in the current batch. This message is sent when refunds are processed on-line. The host must approve the transaction before the terminal stores the transaction in the journal.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0200	0210	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	20a00x	20a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.31. 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	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0400	0410	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	M	M	Same as original processing code
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	M		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	Host should always send ‘00’ response code
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.32. SALE / DEBIT / EBT

The sale transaction is used to obtain authorization for a financial transaction. It is an authorization request and when approved, the transaction is stored in the terminal's batch for later settlement. The 0200 message type is send when the "capture" flag is "Y".

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0200	0210	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	00aa0x	00aa0x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120	O		
55	ICC Sys Related Data	b ...255	C07	O	
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.33. SALE & CASH

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0200	0210	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C01		
03	Processing Code	n 6	09a00x	09a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4	C02		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37	C03		
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76	C03		
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120	M		Contains cash component of transaction
55	ICC Sys Related Data	b ...255	C07	O	
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.34. SALES COMPLETION

The Sales Completion transaction is used:

- To complete a Pre-Authorize 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	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0220	0230	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C06		
03	Processing Code	n 6	00a00x	00a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M		
13	Date, Local Trans.	n 4	M		
14	Date, Expiration	n 4	C06		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12	M	M	
38	Auth. Id. Response	an 6	M		
39	Response Code	an 2	M	M	Request contains response code of original trans.
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120	O		
55	ICC Sys Related Data	b ...255			
60	Private Use	ans ...999			
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.35. SETTLEMENT

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0500	0510	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6	92000x	92000x	
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4			
22	POS Entry Mode	n 3			
24	NII	n 3	M	M	
25	POS Condition Code	n 2			
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6			
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Batch Number	ans ...999	M		Settlement batch number
61	Private Use	ans ...999			
62	Private Use	ans ...999			
63	Totals/Resp Text	ans ...999	M	O	Host response text is returned
64	Message Auth. Code	b 64	O	O	

7.36. SETTLEMENT TRAILER

If the host requests the terminal to upload its batch, the terminal sends the settlement trailer following the upload.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0500	0510	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6	96000x	96000x	
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4			
22	POS Entry Mode	n 3			
24	NII	n 3	M	M	
25	POS Condition Code	n 2			
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12		M	
38	Auth. Id. Response	an 6			
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Batch Number	ans ...999	M		Settlement batch number
61	Private Use	ans ...999			
62	Private Use	ans ...999			
63	Totals/Resp Text	ans ...999	M	O	Host response text is returned
64	Message Auth. Code	b 64	O	O	

7.37. SIGNATURE DATA UPLOAD

Used to send signature data to a signature capture retrieval system.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0320	0330	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6	M	M	Same as original transaction
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M	M	
13	Date, Local Trans.	n 4	M	M	
14	Date, Expiration	n 4			
22	POS Entry Mode	n 3			
24	NII	n 3	M		
25	POS Condition Code	n 2			
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12	M	M	
38	Auth. Id. Response	an 6			
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Original Data	ans ...999			
61	Product Codes	ans ...999			
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	M		Signature segment
64	Message Auth. Code	b 64	O	O	

7.38. STATISTICS

The statistics message is sent to the host after a successful Batch Settlement.

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0800	0810	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6	91000x	91000x	
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4			
22	POS Entry Mode	n 3			
24	NII	n 3	M	M	
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		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	O		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Software ID.	ans ...999	O		
61	Private Use	ans ...999			
62	Private Use	ans ...999			
63	Statistics	ans ...999	M		
64	Message Auth. Code	b 64	O	O	

7.39. TEST TRANSACTION

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0800	0810	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19			
03	Processing Code	n 6	99000x	99000x	
04	Amount, Trans.	n 12			
11	Systems Trace No	n 6			
12	Time, Local Trans.	n 6		M	
13	Date, Local Trans.	n 4		M	
14	Date, Expiration	n 4			
22	POS Entry Mode	n 3			
24	NII	n 3	M	M	
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	M	M	
42	Card Acq. Id	ans 15	O		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999			
52	PIN Data	b 64			
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
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	O	O	

7.40. VOID, SALE

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

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0200	0210	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C06		
03	Processing Code	n 6	02a00x	02a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M	M	Request contains original transaction time
13	Date, Local Trans.	n 4	M	M	Request contains original transaction date
14	Date, Expiration	n 4	C06		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12	M	M	Request contains original retrieval reference no.
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Original Amount	ans ...999	O		Original amount before void.
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

7.41. VOID, CREDIT

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

Bit	Data Element Name	Attribute	Request	Response	Comments
	Message Type Id	n 4	0200	0210	
	Bit Map	b 64	M	M	
02	Primary Acct Num.	n ..19	C06		
03	Processing Code	n 6	22a00x	22a00x	
04	Amount, Trans.	n 12	M	O	
11	Systems Trace No	n 6	M	M	
12	Time, Local Trans.	n 6	M	M	Request contains original transaction time
13	Date, Local Trans.	n 4	M	M	Request contains original transaction date
14	Date, Expiration	n 4	C06		
22	POS Entry Mode	n 3	C05		
24	NII	n 3	M	M	
25	POS Condition Code	n 2	00		
35	Track 2 Data	z ..37			
37	Retrieval Ref No.	an 12	M	M	Request contains original retrieval reference no.
38	Auth. Id. Response	an 6		O	
39	Response Code	an 2		M	
41	Terminal Id	ans 8	M	M	
42	Card Acq. Id	ans 15	M		
43	Card Acq. Name	ans 40			
45	Track 1 Data	ans ..76			
48	Add. Data - Private	ans ...999		O	
52	PIN Data	b 64	O		
53	Security Control Info	n 16	O	O	Use is application dependant
54	Additional Amounts	an ...120			
55	ICC Sys Related Data	b ...255			
60	Original Amount	ans ...999	O		Original amount before void.
61	Product Codes	ans ...999	O		
62	Invoice/ECR Ref. #	ans ...999	O		
63	Additional Data	ans ...999	O	O	
64	Message Auth. Code	b 64	O	O	

8. 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 description of the response code. The Response Codes are contained in Field 39 of the ISO message. The contents in the Terminal Display Text column will be displayed if the host does not send any response text or if the host response text is less than twenty characters in length.

Those entries that do not have a response code in the first column are generated internally by the terminal.

Response Code	Terminal Display Text	ISO Description
00	APPROVAL nnnnnn	Approved
01	PLEASE CALL	Refer to card issuer
02	REFERRAL	Refer to card issuer's special conditions
03	ERROR-CALL HELP - SN	
05	DO NOT HONOUR	
09	ACCEPTED nnnnnn	
10	BALANCE DUE $$$$x.xx	Approved for partial amount
12	ERROR-CALL HELP - TR	Invalid transaction
13	ERROR-CALL HELP - AM	Invalid amount
14	ERROR-CALL HELP - RE	Invalid card reader
19	RE-ENTER TRANSACTION	Re-enter transaction
25	ERROR-CALL HELP - NT	Unable to locate record on file
30	ERROR-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
54	EXPIRED CARD	Expired card
55	INCORRECT PIN	Incorrect PIN
58	INVALID TRANSACTION	Transaction not permitted to terminal
76	ERROR-CALL HELP - DC	Invalid product codes
77	RECONCILE ERROR	Reconcile error (or host text if sent)
78	TRANS. NOT FOUND	Trace number not found
79	DECLINED - CVV2	
80	BAD BATCH NUMBER	Batch number not found
82	NO CLOSED SOC SLOTS	
83	NO SUSP. SOC SLOTS	
85	BATCH NOT FOUND	
89	BAD TERMINAL ID.	Bad terminal id.
91	ERROR-CALL HELP - NA	Issuer or switch inoperative
94	ERROR-CALL HELP - SQ	Duplicate transmission
95	BATCH TRANSFER, WAIT	Reconcile error, Batch upload started
96	ERROR-CALL HELP - SE	System malfunction
**	CALL HELP - IC	All other response codes received

9. TERMINAL GENERATED ERROR TEXT

Terminal Code	Error Text	Generated by Terminal for:
	PROGRAM LOAD ERROR	Program load failed
	PROGRAM LOAD GOOD	Successful program load
	CALL HELP - NA	Host application not available
	NMS CALL COMPLETE	NMS call complete
	POWER FAIL DETECTED	A power failure was detected.
BB	BATCH BALANCING	
BD	BUSI. DAY BALANCING	
BH	CALL HELP - BAD HOST	
CE	PLEASE TRY AGAIN -CE	Communications error
DT	DUPLICATE TRANS.	
IA	CALL HELP - IA	Invalid amount
ID	CALL HELP - ID	Invalid downline load
IM	CALL HELP - IM	Invalid MAC
IR	CALL HELP - IR	Invalid message type
IS	CALL HELP - IS	Invalid host sequence number
IT	CALL HELP - IT	Invalid terminal id.
JF	BATCH NEEDS SETTLED	
LC	PLEASE TRY AGAIN-LC	
NB	INV BAL/SETTL	
NC	NMS CALL COMPLETE	
ND	PLEASE TRY AGAIN-ND	
NR	REGISTER REMOTE - NR	
OR	CHECK FOR RECEIPT-OR	
RE	PLEASE TRY AGAIN-RE	
T1	CHECK FOR RECEIPT-TO	
TO	PLEASE TRY AGAIN -TO	No reply time-out
UN	ERROR - WRONG TRAN	
XX	ERROR - INVLD 39 rr	
ZZ	DEVICE ERROR	

10. INDEX

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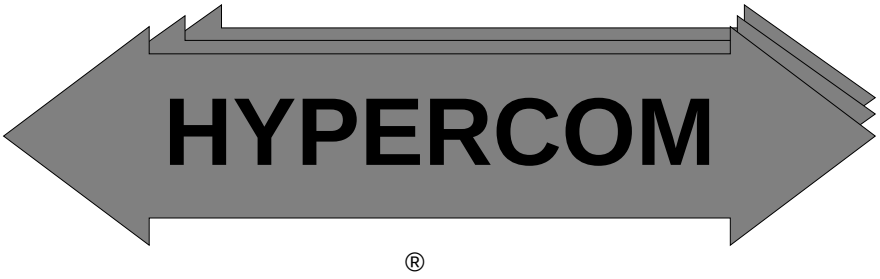
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