POS - Virtual Terminal Interface

Message Specifications

Version 2.7.3
December 2013

For Thai Software with KIOSK supported feature.

VERIFONE NORTH ASIA LTD.

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AMENDMENT RECORD

No.	Date	Revision	Details
1	31 March 1998	1.1	Add new transaction type 'Pre-Auth'.
			Add new transaction type 'Device Control Transaction - Printer 1'.
			Add new field type 'HP'.
2	28 December,1998	1.2	Add new transaction type 'H4'.
			Add new transaction type 'H5'.
3	1 December,1999	1.3	Correct the field type attributes (sec. 8.2)
			Remove the unused transaction types. (sec.10)
4	2 August, 2000	1.4	Add new transaction type 'H3'.EPS Transaction
			Add remark for T7aapap.K20 software
5	8 September 2000	1.5	Add Adjust Transaction & Modify Sale, Void Transaction
6	10 October 2000	1.6	Add Authorization support Change the content of the (10.7) Duplicate receipt.
7	6 February, 2001	1.7	Modify for Shell Thailand project Change Sales – add new fields S1,S2,S3 and S4.
8	14 March, 2002	1.8	Add new fields 73 for T7ATHAM (Shell thai) Automation ID
9	24 July, 2002	1.9	Add new field 74 for T5kthes (Esso Thai) acquirer number Add new field 75 for t7apa384 CVV2
10	12 August, 2002	2.0	Add new field 76 for t7apa384 Magneprint data.
11	16 October, 2002	2.1	No Changes
12	11 Sept., 2003	2.2	Add the field 73 for Sale Request message (20)
13	9 May, 2007	2.3	Add VisaWave Trans. (21)
14	8 August, 2007	2.5	Add field type S5 for Multi-Merchant feature in Thailand
15	22 October, 2008.	2.5.1	Change field attribute on field 30, 31 to ANS to support PCI compliance in section 8.2.
16	20 August, 2011.	2.5.2	Add RS232C - 3 wires simple interface example in section 3. Change field length - Card Issuer Name(D2) from 10 to 10..25 in section 8.2 Change field length - Generic Data(D6) from ..12 to ..20 in section 8.2 Revised Response Codes in section 9
17	10 August, 2012.	2.6.0	Add specific information for KIOSK application - Add trasaction code for Chip card handling in section 7. - Add response code for kiosk in section 9. - Add transaction code supported D1-Cancel Transaction in section 10.6 - Add transaction code supported for Chip card handling in section 10
18	October, 2013.	2.7.0	Add information support Signature capture for Kiosk application. Especially, for PTT Full Selve Serve.
19	10 October, 2013.	2.7.1	Typo correction.
20	1 November, 2013.	2.7.2	Add field 49 – Balance Amount to Field section. Add field 40, 49, HN to Transaction Code Support section.
21	4 December, 2013.	2.7.3	- Add field HM (Host name) to Transaction Code Support section. - Add Response of Transaction Code 'GA' Type '03' section 10.13 - Remove Response of Transaction Code '85' section 10.15 - Add Transaction Code '79' Invoice List Enquiry. - Add Transaction Code support '79' section 10.16 - Add Transaction Code support '80' section 10.17 - Add Transaction Code support '81' section 10.18 - Add more option for D0-Communication Test section 10.5

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1. INTRODUCTION

This document describes the interface and message specifications that allows a Point Of Sale (POS) device to connect to an intelligent POS communications and application controller - called the Terminal. The terminal enables the POS device to easily support a wide range of credit card functions, including authorizations and data capture.

The Terminal effectively isolates the POS device (ECR, PC, etc.) from the complexities of the credit and debit card transaction communications environment. It acts as a powerful communications device, and more importantly, it relieves the POS device from demanding tasks of network and financial message interchange compliance.

This interface is designed to be simple, yet flexible. It is a compromise interface intended to provide a wide range of functions at minimal complexity.

Some of the implementation details may appear to be too complex when viewed from the perspective of a single implementation. Wherever possible this document will try to explain the reasons behind these details, and how they will be used.

This document should be used in conjunction with an implementation guide that describes the details of the particular implementation that you are developing the interface for.

It is not possible to maintain a single implementation specification that will be suitable for all implementations. This document serves as a central reference point so that the different implementations will at least be compatible with each other at a protocol and message structure level.

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2. TERMS USED IN THIS DOCUMENT

The following table lists the terms that are used in this document that are not necessarily obvious.

Term	Description
POS	Point Of Sale Device. In this document this term will be used to indicate any one or more of the following: - an ECR - an ECR controller that is connected to a number of ECR's - a standalone PC - a workstation or minicomputer - a mainframe host
Terminal	Electronics Data Capture (EDC) Equipment that connects to the POS using the message specifications in this document. The Terminal will also be responsible for communicating with the appropriate host system using whatever link, protocol and message formats required.
Constant Declarations	The following types of constant values are used in this document: Character/String values are shown in single quote characters. For example, the letter A will be shown as 'A'. The text string Hello World will be shown as 'Hello World'. Each character in this type of declaration occupies one byte of storage. Hexadecimal values are shown with a lower case h suffix. For example, a value of 40 hexadecimal is shown as 40h. (This is 64 decimal, 100 octal, and 01000000 binary). Each 2 digit hexadecimal value occupies one byte of storage.
REQD	Required in the message.
OPTL	May be in the message. The comment area will often explain the conditions that will cause it to be included.
APPR	Included if the transaction is approved.
NVRAM	Non-Volatile RAM This is battery-backed memory in the Terminal that is used to store configuration data.

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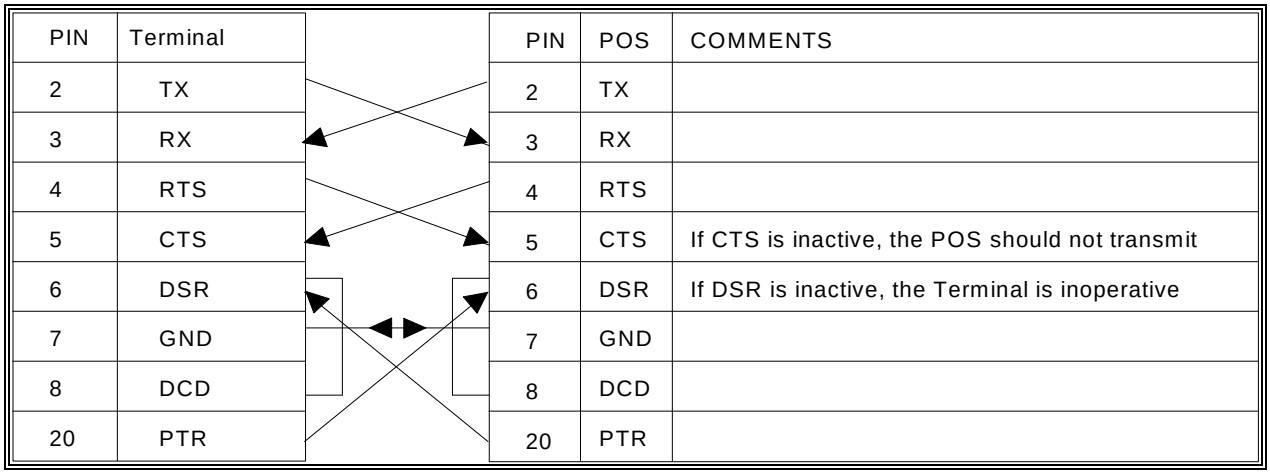
3. PHYSICAL INTERFACE

The Physical Interface used between the POS and the Terminal is detailed in the following table.

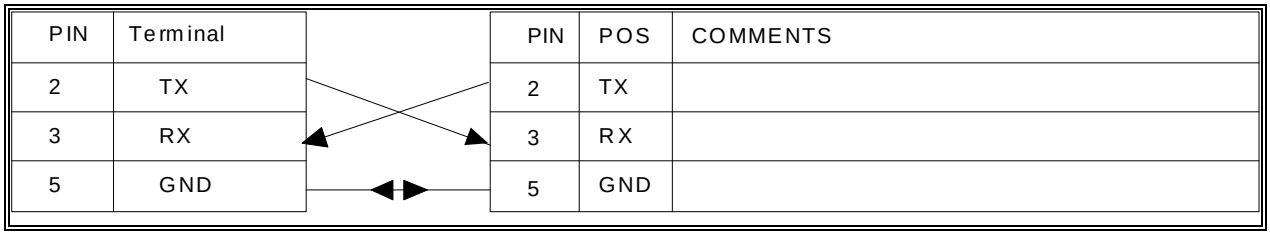
Data Rate	9600 bps
Connection	RS232C (V.24) Interface Terminal connector is a female DB25 DCE connection On a PC, this is compatible with COM1: or COM2:, and requires a straight-through cable, the same as is required for a modem.
Mode	Terminal port is full duplex
Transmission	Asynchronous, 8 data bits, no parity, 1 stop bit (N,8,1)
Characters	ASCII character set (for character fields)

The RS232C signal directions are specified in the following table.



PIN	Terminal	PIN	POS	COMMENTS
2	TX	2	TX	
3	RX	3	RX	
4	RTS	4	RTS	
5	CTS	5	CTS	If CTS is inactive, the POS should not transmit
6	DSR	6	DSR	If DSR is inactive, the Terminal is inoperative
7	GND	7	GND	
8	DCD	8	DCD	
20	PTR	20	PTR	

The simple RS232C 3 wires interface may be used and signal directions are shown in the following table.



PIN	Terminal	PIN	POS	COMMENTS
2	TX	2	TX	
3	RX	3	RX	
5	GND	5	GND	

The PIN is shown accoding to DB9 RS232 connection.

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4. PROTOCOL

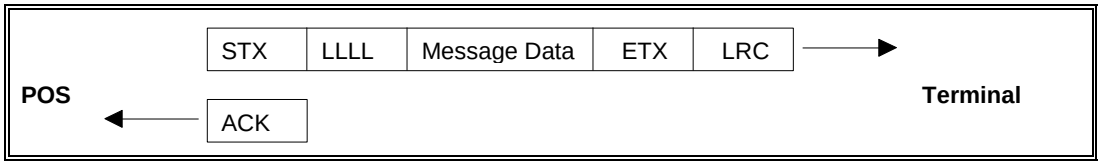
Fortunately the RS232C connection between the POS and the Terminal is almost completely free of errors; therefore a simple protocol can do the job well.

In order to prevent a single error on the line from causing a message to be lost, a message will be acknowledged when the receiver returns an ACK character.

Only a single unacknowledged message can be outstanding at one time in one direction. The receipt of a message does not imply the previous message sent has been received.

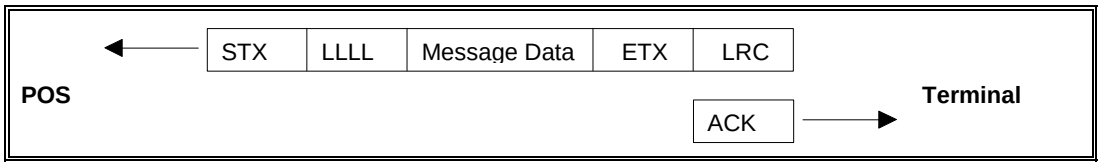
4.1. Message from POS to Terminal

The POS transmits a message. The Terminal acknowledges receipt of the message by transmitting a single ACK (06h) character.



4.2. Message from Terminal to POS

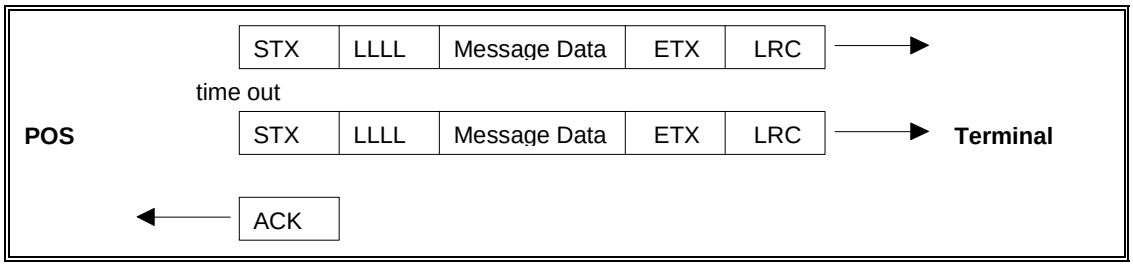
The Terminal transmits a message. The POS acknowledges receipt of the message by transmitting a single ACK (06h) character.



4.3. Error Recovery

If the POS or the Terminal sends a message, and does not receive the ACK within 1 second, the message should be transmitted again. If the second transmission does not receive an ACK within 1 second, that message should be treated as undeliverable, and the application should take whatever actions are required to recover.

If the POS or Terminal receives a message in error (Bad Length, missing ETX, or incorrect LRC), the message should be ignored. These errors should only be caused by transmission errors, and the retransmission will correct the error. There is no automatic method for recovering from application errors that cause the message to appear corrupted.



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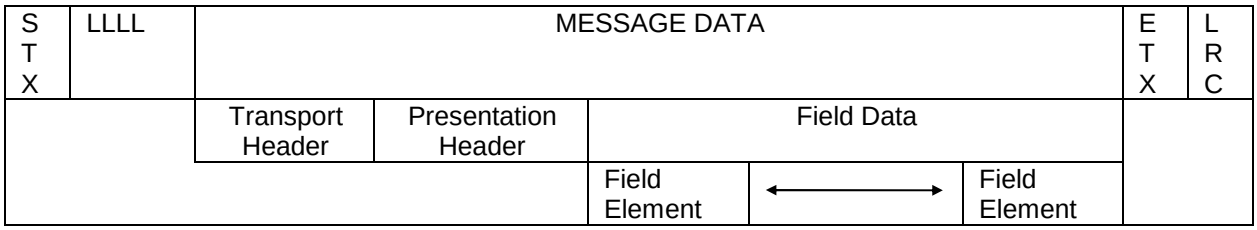
5. MESSAGE STRUCTURE

The messages that are transmitted on the link between the POS and the Terminal will use the following structure.



Field	Bytes	Value	Comment
STX	1	02h	Start of Text This character is used to indicate the start of a frame.
LLLL	2		Length of the MESSAGE DATA to follow. This is transmitted in BCD (Binary Coded Decimal) form. The most significant byte is transmitted first, followed by the least significant byte. For example, a length of 256 bytes will be transmitted as 02h 56h. The LLLL field allows the inclusion of binary data in the message. The maximum allowable value for LLLL will depend on the implementation.
MESSAGE DATA	Variable		The message data consists of a Transport Header, a Presentation Header, and Field Data which is one or more Field Elements. These different components are more fully described in the following sections
ETX	1	03h	End of Text Logically this field is not required because of the length indicator (LLLL), but it is included as an extra check that the message was successfully received and that the receiver is in synchronization with the transmitted message.
LRC	1		Longitudinal Redundancy Character. This character is calculated by Exclusive OR-ing each character following (but not including) the STX up to (and including) the ETX.

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6. MESSAGE DATA

The message data within a message consists of three different components, in the order as shown in the following diagram.

The different components are detailed in the sections that follow this one.

MESSAGE DATA		
Transport Header	Presentation Header	Field Data

6.1. Transport Header

The first data in the Message Data is the Transport Header. The Transport Header provides flexibility in message routing, and allows more than one application to use the same network.

The fields comprising the Transport Header are arranged in the following order.

TRANSPORT HEADER		
Transport Header Type	Transport Destination	Transport Source

The fields are described below.

Field	Bytes	Value	Use
Transport Header Type	2	'60'	Used to select the type of application this message is used for. A value of '60' defines an Application Message
Transport Destination	4	'0000'	Allows the POS to select the destination to which this message is to be routed. If this value is '0000', the Terminal will determine the correct destination to route the message to from its internal tables.
Transport Source	4	'0000'	The first two digits of this field must be '00'. The second two digits can be used by the POS for any purpose. Typically this will be '00', but if there are multiple devices connected to the POS, this field can be used to identify the device the original request originated at.

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6.2. Presentation Header

The next data in the Message Data is the Presentation Header. The Presentation Header indicates if this is a request or a response, the transaction code, a response code, and an indication if there are more messages associated with this message.

The fields comprising the Presentation Header are arranged in the following order.

PRESENTATION HEADER					
Format Version	Request-Response Indicator	Transaction Code	Response Code	More Data Indicator	Field Separator

The fields are described below.

Field	Bytes	Value	Use
Format Version	1	'1'	Indicates what format of the messages is supported.
Request-Response Indicator	1		'0' This message is a request message which requires a response '1' This message is a response message '2' This message is a request message which does not require a response
Transaction Code	2		Identifies the type of transaction this message is performing. See the table in section for a list of valid Transaction Codes.
Response Code	2		Identifies the result of the transaction in a response. Response code should be set to '00' for all request messages. See the table in section for a list of valid Response Codes.
More Indicator	1		'0' This is the last message for this transaction. '1' There is another message following this one with more field data for this transaction.
Field Separator	1	1Ch	This field is used to make it easier to identify the end of the presentation header when looking at message traces.

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6.3. Field Data

The Field Data is the most important area for flexibility in the message format.

The method described here allows great benefits, but there is a price to pay for this flexibility; each field element has 2 or 5 bytes of overhead.

The benefits gained from this overhead are:

- Ability to pass binary data.

  New features such as Signature Capture will require passing large amounts of data. The overhead required if this cannot be passed as binary data is very high.

- Variable Length Data Fields.

- The data is fairly readable on a message trace.

The Field Data consists of 0 or more Field Elements, arranged one after the other in the message.

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6.4. Field Data Format

The fields comprising the Field Element are arranged in the following order.

FIELD ELEMENT FORMAT			
Field Type	LLLL	Data	Field Separator

The fields are described below.

Field	Bytes	Value	Use
Field Type	2		Indicates the type of data that is included in this field element. This is an alphanumeric field. Characters 0-9 and A-Z are available for use. The table in section lists the available values.
LLLL	2		Indicates the length in bytes of the data to follow. Length can have a value from 0000 to a value that will not cause the total message to exceed the maximum size allowed for the implementation. Available values for this are detailed in section . LLLL is transmitted in BCD (Binary Coded Decimal) form. The most significant byte is transmitted first, followed by the least significant byte. For example, a length of 256 bytes will be transmitted as 02h 56h.
Data	LLLL		The data for this field. If no data is in this field (for example, when the functionality is indicated by the field type on its own), there will be no data.
Field Separator	1	1Ch	This field is used to make it easier to identify the end of a field element when looking at message traces.

6.5. Extra Field Separators

Some POS implementations will be easier to develop this interface if field data appears in a particular order, with additional field separators to represent fields that are missing.

To support this, it is acceptable to include extra Field Separator characters (1Ch) between Field Elements.

This can be easily supported in the parsing routine by ignoring any Field Separator characters when it is expecting the first character of the Field Type.

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7. TRANSACTION CODES

Each transaction code is identified with a two character code. Characters 0-9, and A-Z are available for use in the Transaction Code.

* THA =YES
Features marked with 'YES' in column THA are supported by THA terminal software.

Tran. Code	Description	THA
Administrative Transactions		
00	Load Authorization Host Telephone Number	
01	Load Data Capture Host Telephone Number	
02	Load Download Telephone Number	
03	Load Initialization Telephone Number	
04	Load Check Acceptance Host Telephone Number	
06	Load CALL String	
07	Load POS Configuration	
08	Initialize Parameters Dial telephone number specified by Tran Code 03 and request a parameter load	
09	Initialize Software Dial telephone number specified by Tran Code 02 and request a program load	
Authorization Transactions		
10	Authorization Only	YES
12	Check Acceptance	
20	Purchase	YES
21	Purchase VisaWave	YES
26	Void Used to VOID a transaction that is being held in the current batch of the Terminal	YES
27	Refund Credit Used to Refund money to a cardholder's account. This transaction is not associated with any other transaction in the current batch held by the Terminal.	YES
28	Adjust Used to ADJUST a transaction that is being held in the current batch of the Terminal	
34	Balance Inquiry	
35	Cash Advance	
36	Sale + Cash	
Settlement Transactions		
50	Close Batch Initiate a session with the host to settle all the transactions held in the current batch in the Terminal.	YES
51	Clear Batch Used to clear all transactions from the current batch in the Terminal. **** WARNING - TRANSACTION DETAILS WILL BE LOST ****	

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Tran. Code	Description	THA
Device Control Transactions		
60	Display 1	
61	Display 2	
62	Key PAD 1	
63	Key PAD 2	
64	Printer 1	
65	Printer 2	
66	Card Reader 1	
67	Card Reader 2	
68	PIN PAD	
69	Image PAD	
Transaction Review Transactions		
70	Review Transaction Options allow for First, Last, Next, Previous or a specific transaction.	
75	Review Issuer Total Options allow for First, Last, Next, Previous or a specific Issuer.	
79	Invoices List Enquiry EDC will return list of all invoices in the batch.	YES
80	Review Acquirer (Host) Totals EDC will return multiple packages. First package is Acquirer totals, followed by packages for each Issuer totals.	YES
81	Review Terminal Totals EDC will return multiple packages. First package is terminal totals, followed by packages for each Acquirer (Host) totals.	YES
Miscellaneous Transactions		
82	Hayes Mode Request	
83	Training Mode Request	
84	Certification Mode Request	
85	Transparent Data	
86	Dial, Pre-Dial	
87	CALL Request	
88	CALL Clear	
89	TNMS Call Dials telephone number specified by Tran Code 02 and start an Network Management System. The TNMS can be used to perform diagnostics on the Terminal remotely	
Receipt/Report Transactions		
90	Report Totals	
91	Report Details	
92	Duplicate Receipt	
VeriFone/Hypercom Transactions		
D0	Communications Test Used by the POS to verify the connection to the Terminal.	YES
D1	Communications Cancel Used to cancel a transaction that is being processed by the Terminal.	YES
EPSCO Transactions		
H3	EPSCO sales transaction	
H9	EPSCO total inquiry	

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Tran. Code	Description	THA
HA	EPSCO reprint ISN	
HB	Display EPSCO info	
HC	EPSCO select Account	
Chip Card Handling Transactions (Kiosk support) Used for ECR or External Application		
C0	Waiting for chip card insert	Yes
C1	Chip card Inserted	Yes
C2	Waitng for chip card remove	Yes
C3	Chip card removed	Yes
General Acknowledge Transactions (Kiosk support)		
GA	General Acknowledgement Field 'GT' is required for specified acknowledge type with other related required fields.	Yes

8. FIELD TYPES

Each different type of Field Element within the Field Data is designated by a different Field Type value. Each Field Type also has an attribute and a length associated with it. The length may be a single number, which indicates a fixed length field, or a variable length which indicates a maximum length. Variable length fields are indicated by two dots preceding the length. For example, Track 1 data is a variable length field up to 76 characters long, which has a length description of ..76.

Field Types are alphanumeric, meaning 0-9 and A-Z are valid characters in the Field Type.

8.1. Field Attributes

The following table lists the different field attributes available for use in the Field Type Definition Table.

Attribute	Description
ANS	Alpha, Numeric and Special characters
AN	Alpha and Numeric characters
N	Numeric characters
Z	Numeric Data plus '=' character This is used for Track 2 data, where the '=' is the separator between the card number and the rest of the data.
$	Amount. Numeric characters indicating number of cents. No $ sign or decimal point is included.
B	Binary Data The data is a stream of bytes that could take any value.
T	Telephone Number Data Valid characters are 0-9, *, #, space, -, and a comma or a P for a dial tone pause.

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8.2. Field Type Definitions

The following table lists the defined field type definitions with their attributes, and the lengths of each field.

* TRX = TX (Transmit) / RX (Receive) , opt (option)
Features marked with TX / RX in column TRX are supported by THA base terminal software.

Field Type	Attribute	Length	Field Data	TRX
01	ANS	6	Approval Code	TX
02	ANS	40	Response Text 40 character text is arranged as two lines of 20 characters	TX
03	N	6	Transaction Date YYMMDD	TX
04	N	6	Transaction Time HHMMSS	TX
06	N	12	Merchant Number	
07	N	4	Store Number	
08	N	4	Terminal Number	
09	N	6	BIN, Acquirer	
10	N	6	Agent Number	
11	N	6	Chain Number	
12	ANS	25	Merchant Name	
13	ANS	13	Merchant City	
14	ANS	2	Merchant State	
15	ANS	4	Merchant Location Number	
16	N	8	Terminal Identification Number	TX
17	ANS	1	Cardholder ID Code	
20	ANS	..9999	Print Data Formatted Actual maximum length is determined by the application.	
30	ANS	..19	Primary Account Number (PAN) * for PCI compliance, the masked digit will be replaced by 'X' (58h). Example.- 4546252500001234 will replaced by XXXXXXXXXXXX1234	TX
31	ANS	4	Expiration Date YYMM * for PCI compliance, the masked digit will be replaced by 'X' (58h). Example.- 1512 will replaced by XXXX	TX
32	ANS	..76	Track 1 data Start and end sentinels and LRC are not included.	
33	Z	..37	Track 2 data Start and end sentinels and LRC are not included.	
34	ANS	1	Account Data Source 'D' Mag-stripe-read, Track 2 capable 'H' Mag-stripe-read, Track 1 capable 'T' Manual key entered, Track 2 capable 'X' Manual key entered, Track 1 capable '@' Manual key entered, not capable or reading card data	

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Field Type	Attribute	Length	Field Data	TRX
40	$	12	Amount, Transaction This is the total amount of the transaction. Any other amounts (such as Tip, Cash Back and Tax) are included in this amount.	RX
41	$	12	Amount, Tip Information only amount field.	
42	$	12	Amount, Cash Back Information only amount field.	RX
43	$	12	Amount, Tax Information only amount field.	
49	$	12	Amount, Balance Response amount balance field.	TX
50	N	6	Batch Number	TX
51	N	4	Batch Transmission Date MMDD	
52	$	16	Batch Amount Hashing Total	
53	N	9	Batch Transaction Record Count	
54	ANS	30	Batch Response Message	
60	T	..24	Primary Telephone Number	
61	T	..24	Secondary Telephone Number	
62	AN	1	Dial Type '0' DTMF/Tone Dialing '1' Pulse Dialing	
63	T	..8	PABX/Tie Line Access Code	
64	N	2	Modem mode for dial '00' 1200 bps '08' 2400 bps	
65	ANS	6	Invoice Number Used to identify a transaction. There can only be one transaction with a particular value in the batch in the Terminal.	TX/RX
66	ANS	1	Card Range Selector This field can be included if it is not possible to use the PAN to determine the Card Range 'P' Private Label Cards	
67	ANS	..6	Employee Number	
68	ANS	2,23,43, or 49	Cardholder Identification Data Refer to Visa Point-Of-Sale Equipment Requirements, PIN Processing and Data Authentication.	
69	ANS	..24	Customer Data, Check Acceptance ID	
70	N	3 to 6	Date Data	

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Field Type	Attribute	Length	Field Data	TRX
71	N	..4	Hold Time Number of seconds to hold the dial line open after a transaction. '0000' drops the immediately. '9999' holds the line open indefinitely	
72	B	..9999	Transparent Data Actual maximum length is determined by the application.	
73	ANS	7	Automation ID For Shell Thai software sales slip print out.	RX
74	ANS	1	Acquirer Group Number For Esso Thai software to select the acquirer host	RX
75	ANS	6	Security code (CVV2 / 4DBC) Right space, left justify	
76	B	54 (Byte)	Magneprint Data	
VeriFone/HYPERCOM DEFINED FIELDS				
D0	ANS	69	Merchant Name and Address Organized as 3 lines of 23 characters	TX
D1	ANS	15	ISO8583 Merchant Number (MID)	TX
D2	ANS	10..25	Card Issuer Name Name of the Issuer of the card	TX
D3	ANS	12	Retrieval Reference Number	TX
D4	N	2	Card Issuer ID - From Initialization Tables	TX
D5	ANS	26	Card Holder Name	TX/opt
D6	ANS	..20	Generic Data	RX
D7	ANS	..25	Generic Data 2	TRX
D9	N	6	STAN	
E1	N	3	EPSCO account indicator	
E2	N	6	EPSCO ISN	
E3	ANS	16	EPSCO account number (masked)	
E4	N	4	EPSCO value day (DDMM)	
E5	ANS	3	EPSCO response code	
E6	ANS	120	Merchant Name and Address Organized as 3 lines of 40 characters	
E7	ANS	20	EPSCO Additional Response text	

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Field Type	Attribute	Length	Field Data	TRX
E8	N	220	(per EPS logic, it can have up to 10 account date to show the detail, if over 10 account date, it will sum up the very old date into one total as Value Date before) Batch Totals Value Date 1(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12 Value Date 2(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12 Value Date 3(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12 Value Date 4(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12 Value Date 5(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12 Value Date 6(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12 Value Date 7(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12 Value Date 8(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12 Value Date 9(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12 Value Date 10(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12 Value Date before(MMDD) 4 Debit Sales Count 4 Debit Sales Amount 12	
E9	ANS	41	It will have a separator (0Dh) between account other fill space, if that is only one account, that's mean no account select are required.	
EA	ANS	20	EPSCO English Display text	
EB	ANS	40	EPSCO Chinese Display text	
HM	ANS	10	HOST NAME	TX/RX
HN	N	3	HOST NII	TX/RX

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Field Type	Attribute	Length	Field Data	TRX
HO	N	96	Batch Totals Capture Sales Count 4 Capture Sales Amount 12 Capture Refund Count 4 Capture Refund Amount 12 Debit Sales Count 4 Debit Sales Amount 12 Debit Refund Count 4 Debit Refund Amount 12 Authorize Sales Count 4 Authorize Sales Amount 12 Authorize Refund Count 4 Authorize Refund Amount 12	TX
HP	N	1	Printer Status, Enable Flag 0 – Disable 1 – Enable	
S1	ANS	2	Product Code 1 (for Shell Transaction)	RX
S2	$	12	Litre – No. of litre of Product Code 1 (for Shell)	RX
S3	ANS	2	Product Code 2 (for Shell Transaction)	RX
S4	$	12	Amount #2 – Amount for product code 2 (for Shell)	RX
S5	ANS	2	Merchant ID (for Multi-Merchant feature in Thailand)	RX
Field used for General Acknowledge (Kiosk support)				
GT	ANS	2	Gerneral Acknowleage type ‘01’ = System Trace Audit Number acknowledge ‘02’ = System Trace Audit Number Enquiry ‘03’ = Keypress status. ‘04’ = Signpad status	RX/TX
GP	ANS	1…20	General Acknowledge parameter.	RX/TX
Field used for Signpad image transmission (Kiosk support) Trasaction code ‘85’ Transparent Data is used for transmit the signpad image.				
72	B	..9999	Transparent Data Actual maximum length is determined by the application.	RX/TX
PN	N	2	Package number being transmited	RX/TX
PT	N	2	Total number of package.	RX/TX

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9. RESPONSE CODES

The following table lists the response codes that the Terminal will send back to the POS in a response message.

Resp Code	Meaning
NULL (0000h)	Nothing has been processed Transaction is cancelled by user or no any action in time.
00	Approved Transaction completed successfully
02	Voice Referral Transaction must be completed at the POS using voice referral, then sent back to the Terminal as an OFFLINE transaction. If the POS does not support this mode of operation, this response code can be treated as a declined response code.
aa	2 digits alpha numeric response codes from host. Most response codes indicated the transaction is declined. More explanation is included in the response text field (field 02).
ND	Declined The transaction is declined. More explanation is included in the response text field.
ED	Destination Error Terminal cannot determine where this transaction should be sent to.
CE	Network Request Error Terminal is unable to make a connection to the host for processing the transaction, or there is a communication error being processed.
TO	Host Timeout The Terminal does not receive a response from the host in time.
NA	Transaction not available The Terminal will send this response code if it does not know how to process the transaction.

The following table lists the response codes specifically for Kiosk application.

Resp Code	Meaning
CF	Chip card reading failed.
MF	Memory full. No more memory for the transaction. Terminal is required to settle the batch.
SR	Settlement required. Terminal is required to settle the batch, due to last settlement was not successful.
AQ	Aquirer not found. Respone code for settlement transaction in case of acquirer not found.
CR (optional)	Chip card required. This is an optional indicated card swipe is switching to chip insert required.

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10. TRANSACTIONS CODE SUPPORTED

10.1. 20 - Sales (Purchase)

Request (Kiosk to EDC)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	40	12	Amount, Transaction	
Optional	30	..19	PAN	
Optional	31	4	Expiry Date	
Optional	32	..76	Track 1	
Optional	33	..37	Track 2	
Optional	D6	..20	Generic Data	
Optional	73	1	Merchant group ID	For multi merchants app.

Response (EDC to Kiosk)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	02	40	Response Text from host or EDC	Text will be 40 characters long organized as 2 lines of 20 characters
Approved	01	6	Approval Code	Host approval code
Approved	65	6	Invoice Number	EDC invoice number
Required	D0	69	Merchant Name and Address	69 characters, organized as 3 lines of 23 characters
Approved	16	8	Terminal Identification Number (TID)	
Approved	D1	15	Merchant Number (MID)	
Approved	D2	10	Card Issuer Name	Name of card issuer from EDC tables
Approved	30	…19	Card Number	Up to 19 digits. Format will be 123456XXXXXX1234 (depend on bank specification).
Approved	31	4	Expiry Date	YYMM * for PCI compliance, the masked digit will be replaced by 'X' (58h). Example.- 1512 will replaced by XXXX
Approved	50	6	Batch Number	EDC batch (6 digits long)
Required	03	6	Transaction Date	YYMMDD
Required	04	6	Transaction Time	HHMMSS
Approved	D3	12	Retrieval Reference Number	Host reference number
Approved	D4	2	Card Issuer ID	From EDC tables (related to D2)
Required	D9	6	STAN	System Trace Audit Number
Optional	D5	…26	Card Holder Name	Up to 26 character (If available)
Optional	40	12	Amount, Transaction	
Optional	49	12	Amount, Balance	For Cash Card Balance
Approved	HN	3	HOST NII	
Approved	HM	10	HOST Name	

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10.2. 26 - Void

Request (Kiosk to EDC)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	65	6	Invoice Number	

Response (EDC to Kiosk)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	02	40	Response Text from host or EDC	Text will be 40 characters long organized as 2 lines of 20 characters
Approved	01	6	Approval Code	Host approval code
Approved	65	6	Invoice Number	EDC invoice number
Required	D0	69	Merchant Name and Address	69 characters, organized as 3 lines of 23 characters
Approved	16	8	Terminal Identification Number (TID)	
Approved	D1	15	Merchant Number (MID)	
Approved	D2	10	Card Issuer Name	Name of card issuer from EDC tables
Approved	30	…19	Card Number	Up to 19 digits. Format will be 123456XXXXXX1234 (depend on bank specification).
Approved	31	4	Expiry Date	YYMM * for PCI compliance, the masked digit will be replaced by 'X' (58h). Example.- 1512 will replaced by XXXX
Approved	50	6	Batch Number	EDC batch (6 digits long)
Required	03	6	Transaction Date	YYMMDD
Required	04	6	Transaction Time	HHMMSS
Approved	D3	12	Retrieval Reference Number	Host reference number
Approved	D4	2	Card Issuer ID	From EDC tables (related to D2)
Required	D9	6	STAN	System Trace Audit Number
Optional	D5	…26	Card Holder Name	Up to 26 character (If available)
Optional	40	12	Amount, Transaction	
Optional	49	12	Amount, Balance	For Cash Card Balance
Approved	HN	3	HOST NII	
Approved	HM	10	HOST Name	

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10.3. 27 - Refund(Credit)

Request (Kiosk to EDC)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	40	12	Amount, Transaction	
Optional	30	..19	PAN	
Optional	31	4	Expiry Date	
Optional	32	..76	Track 1	
Optional	33	..37	Track 2	
Optional	D6	..20	Generic Data	
Optional	73	1	Merchant group ID	For multi merchants app.

Response (EDC to Kiosk)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	02	40	Response Text from host or EDC	Text will be 40 characters long organized as 2 lines of 20 characters
Approved	01	6	Approval Code	Host approval code
Approved	65	6	Invoice Number	EDC invoice number
Required	D0	69	Merchant Name and Address	69 characters, organized as 3 lines of 23 characters
Approved	16	8	Terminal Identification Number (TID)	
Approved	D1	15	Merchant Number (MID)	
Approved	D2	10	Card Issuer Name	Name of card issuer from EDC tables
Approved	30	…19	Card Number	Up to 19 digits. Format will be 123456XXXXXX1234 (depend on bank specification).
Approved	31	4	Expiry Date	YYMM * for PCI compliance, the masked digit will be replaced by 'X' (58h). Example.- 1512 will replaced by XXXX
Approved	50	6	Batch Number	EDC batch (6 digits long)
Required	03	6	Transaction Date	YYMMDD
Required	04	6	Transaction Time	HHMMSS
Approved	D3	12	Retrieval Reference Number	Host reference number
Approved	D4	2	Card Issuer ID	From EDC tables (related to D2)
Required	D9	6	STAN	System Trace Audit Number
Optional	D5	…26	Card Holder Name	Up to 26 character (If available)
Optional	40	12	Amount, Transaction	
Optional	49	12	Amount, Balance	For Cash Card Balance
Approved	HN	3	HOST NII	
Approved	HM	10	HOST Name	

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10.4. 50 - Settlement

Request (Kiosk to EDC)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	HN	3	Host NII	In case of using Host Name instead. This field should be '000'
Optional	HM	10	Host Name	

Response (EDC to Kiosk)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	02	40	Response Text from host or EDC	Text will be 40 characters long organized as 2 lines of 20 characters
Required	D0	69	Merchant Name and Address	69 characters, organized as 3 lines of 23 characters
Required	16	8	TID	Terminal Identification Number
Required	D1	15	MID	Merchant Number
Required	50	6	Batch Number	EDC batch (6 digits long)
Required	03	6	Transaction Date	YYMMDD
Required	04	6	Transaction Time	HHMMSS
Required	HN	3	Host NII	
Optional	HM	10	Host Name	
Approved	HO	96	Batch Totals	Capture Sales Count 4 Capture Sales Amount 12 Capture Refund Count 4 Capture Refund Amount 12 Debit Sales Count 4 Debit Sales Amount 12 Debit Refund Count 4 Debit Refund Amount 12 Authorize Sales Count 4 Authorize Sales Amount 12 Authorize Refund Count 4 Authorize Refund Amount 12

10.5. D0 - Communications Test

Request (Kiosk to EDC)

Reqd/Opt	Field Type	Length	Field Name	Comments
Optional	HM	10	Host Name	- If this field is omitted, Kiosk-EDC communication is tested. - If this field is "?", EDC will response as host list. - If this field is Host Name, EDC will be test connection to host.

Response (EDC to Kiosk)

Reqd/Opt	Field Type	Length	Field Name	Comments
Optional	72	1..999	Acquirer (Host) list	If requested Host Name as "?", EDC will return host list .- Host NII (3 digits) + Host Name (10 digits). Separated by ","

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10.6. D1 - Communications Cancel

Request (Kiosk to EDC)

No field is required for Cancel transaction. Kiosk must check ACK return from EDC first, which indicated that EDC is in idle state and can be cancelled the transaction.

If there is no ACK return from EDC, which indicated that EDC is busy and processing the transaction. The cancel transaction is not allow, Kiosk must wait until get other response.

Response (EDC to Kiosk)

EDC will response code NULL, which indicated successfully cancel. If EDC finished transaction process it will return other response code.

The following transaction code supported are option for Chip card handling in Kiosk application. These transaction only request by EDC without reponse required from ECR or external application. They are used for chip card insert status indication purpose.

10.7. C0 – Wait for Chip Card Insert

Request (EDC to ECR or external application) no response required.

Reqd/Optl	Field Type	Field Name	Comments
Required	D7	Generic Data 2	Indicated “WAITING FOR CARD INSERT”

10.8. C1 – Chip Card Inserted

Request (EDC to ECR or external application) no response required.

Reqd/Optl	Field Type	Field Name	Comments
Required	D7	Generic Data 2	Indicated “CHIP CARD INSERTED”

10.9. C2 – Wait for Chip Card Remove

Request (EDC to ECR or external application) no response required.

Reqd/Optl	Field Type	Field Name	Comments
Required	D7	Generic Data 2	Indicated “WAITING FOR CARD REMOVE”

10.10. C3 – Chip Card Removed

Request (EDC to ECR or external application) no response required.

Reqd/Optl	Field Type	Field Name	Comments
Required	D7	Generic Data 2	Indicated “CHIP CARD REMOVED”

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10.11. GA – General Acknowlede – System Trace Audit Number info from EDC

Request (EDC to Kiosk) no response required.

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	GT	2	Acknowledge type	'01' = System trace audit number info
Required	GP	6	Acknowledge Parameter	System trace audit number 6 digits

10.12. GA – General Acknowlede – System Trace Audit Number Enquiry

Request (Kiosk to EDC) .

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	GT	2	Acknowledge type	'02' = System trace audit number Enquiry
Required	GP	6	Acknowledge Parameter	System trace audit number 6 digits

Response (EDC to Kiosk)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	GT	2	Acknowledge type	'02' = System trace audit number Enquiry
Required	GP	1..20	Acknowledge Parameter	Transaction Status *
Optional	02	40	Response Text from host or EDC	Text will be 40 characters long organized as 2 lines of 20 characters
Approved	01	6	Approval Code	Host approval code
Approved	65	6	Invoice Number	EDC invoice number
Optional	D0	69	Merchant Name and Address	69 characters, organized as 3 lines of 23 characters
Approved	16	8	Terminal Identification Number (TID)	
Approved	D1	15	Merchant Number (MID)	
Approved	D2	10	Card Issuer Name	Name of card issuer from EDC tables
Approved	30	…19	Card Number	Up to 19 digits. Format will be 123456XXXXXX1234 (depend on bank specification).
Approved	31	4	Expiry Date	YYMM
Approved	50	6	Batch Number	EDC batch (6 digits long)
Optional	03	6	Transaction Date	YYMMDD
Optional	04	6	Transaction Time	HHMMSS
Approved	D3	12	Retrieval Reference Number	Host reference number
Approved	D4	2	Card Issuer ID	From EDC tables (related to D2)
Optional	D9	6	STAN	System Trace Audit Number
Optional	D5	…26	Card Holder Name	Up to 26 character (If available)
Optional	40	12	Amount, Transaction	
Optional	49	12	Amount, Balance	For Cash Card Balance
Approved	HN	3	HOST NII	

Transaction Status *

'NA' = Transaction not found or Transaction was unsuccessful.
'APPROVED' = Transaction was approved, then EDC will include the Optional and Approved fields.
'VOIDED' = Transaction was voided, then EDC will include the Optional and Approved fields.

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10.13. GA – General Acknowlede – Key Press Status

Request (Kiosk to EDC)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	GT	2	Acknowledge type	'03' = Key Press Status
Required	GP	1..20	Acknowledge Parameter	Keypress Status *

Keypress Status*
'YES' = User selected Yes.
'NO' = User selected No.
'CANCEL' = User selected Cancel.

Response (EDC to Kiosk)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	GT	2	Acknowledge type	'03' = Key Press Status
Required	GP	1..20	Acknowledge Parameter	Keypress Status * (see above)

Note.- For key pressed confirmation.

10.14. GA – General Acknowlede – SignPad Request

Request (EDC to Kiosk) no response required .

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	GT	2	Acknowledge type	'04' = SignPad request

10.15. 85 – Transparent Data – SignPad Image Transfer

Request (EDC to Kiosk) no response required .

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	PN	2	Package Number	Package number being sent
Required	PT	2	Total Package	Total number of packages
Required	72	1...999	Image Data	

Note.- Due to signature image size maybe too large to be sent in single package. It will be splitted into multiple packages and will be sent each package separately.

10.16. 79 – Invoices List Enquiry

Request (Kiosk to EDC)
No field is required for Invoices List Enquiry transaction.

Response (EDC to Kiosk)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	PN	2	Package Number	Package number being sent
Required	PT	2	Total Package	Total number of packages
Required	72	1...999	Invoices number list	Each number will be prefixed by 'S' or 'V' followed by 6 digits invoice number, S = Sale, V = Voided

Note.- Due to the list maybe too large to be sent in single package. It will be splitted into multiple packages and will be sent each package separately.

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10.17. 80 – Review Acquirer (Host) Totals

Request (Kiosk to EDC)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	HM	10	Host Name	

Response (EDC to Kiosk)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	16	8	TID	Terminal Identification Number
Required	D1	15	MID	Merchant Number
Required	50	6	Batch Number	EDC batch (6 digits long)
Required	HN	3	Host NII	
Required	HM	10	Host Name	
Optional	D2	10	Card Issuer Name	Not shown in the first package.
Optional	D4	2	Card Issuer ID	Not shown in the first package.
Required	HO	96	Batch Totals	Capture Sales Count 4 Capture Sales Amount 12 Capture Refund Count 4 Capture Refund Amount 12 Debit Sales Count 4 Debit Sales Amount 12 Debit Refund Count 4 Debit Refund Amount 12 Authorize Sales Count 4 Authorize Sales Amount 12 Authorize Refund Count 4 Authorize Refund Amount 12

Note.- The response will be sent into multiple packages which indicated by “More Indicator” in Presentation Header (Section 6.2). First package is Acquirer totals. The followed packages are Issuer totals.

10.18. 81 – Review Terminal Totals

Request (Kiosk to EDC)

No field is required for Review Terminal Totals transaction.

Response (EDC to Kiosk)

Reqd/Opt	Field Type	Length	Field Name	Comments
Required	16	8	TID	The first package, this field will be shown as physical TID. Other packages this field will be shown as Acquirer TID.
Required	D1	15	MID	Merchant Number
Required	50	6	Batch Number	EDC batch (6 digits long)
Optional	HN	3	Host NII	Not shown in the first package.
Optional	HM	10	Host Name	Not shown in the first package.

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Required	HO	96	Batch Totals	Capture Sales Count	4
				Capture Sales Amount	12
				Capture Refund Count	4
				Capture Refund Amount	12
				Debit Sales Count	4
				Debit Sales Amount	12
				Debit Refund Count	4
				Debit Refund Amount	12
				Authorize Sales Count	4
				Authorize Sales Amount	12
				Authorize Refund Count	4
				Authorize Refund Amount	12

Note.- The response will be sent into multiple packages which indicated by “More Indicator” in Presentation Header (Section 6.2). First package is Terminal totals. The followed packages are Acquirer (host) totals.

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