Chapter 9

Terminal to Central Messages

Overview

This chapter describes the messages sent from the terminal to Central, as follows:

- Transaction request messages
- Solicited status messages, including encryptor initialisation and EJ upload data
- Unsolicited status messages
- Status information about devices and device faults

For any differences on other vendors' SSTs, refer to the *APTRA Advance NDC, Multi-Vendor Support Reference Manual*.

For information on clearing persistent storage, refer to section "Clearing Persistent Memory (NVRAM)" in Chapter 11, "Interactive Installation of Advance NDC" of the *APTRA Advance NDC, Developer's Guide*.

Transaction Request Messages

Transaction Request messages are sent from the SST and contain the data that the host requires to authorise a consumer transaction at the SST. The message is sent during a consumer transaction, either on entry to the Transaction Request state or as part of an Interactive Transaction message sequence.

Transaction Request Message Format

The format of the Transaction Request message is given in the following table:

Table 9-1
Transaction Request Message Format

Field	Number of Characters	Mandatory/Optional	Description
a	Var	M	Header - Protocol-dependent.
b	1	M	Message Class. The message class is: '1' - Unsolicited message.
c	1	M	Message Sub-Class. The message sub-class is: '1' - Transaction Request message.
FS	1	M	Field Separator
d	3 or 9	M	Logical Unit Number (LUNO). This number is defined in a field transmitted to the SST in a Configuration Parameters Load message. The default value is 000. If the data security feature is configured, an additional six characters are present which contain the machine number.
FS	1	M	Field Separator
FS	1	M	Field Separator
e	8	*See* Table Note 3	Time Variant Number. This field can contain an eight-digit number derived from the time of day by the SST for each transaction request. The digits can contain the characters 0-9, A-F.
FS	1	M	Field Separator
f	1	M	Top of Receipt Transaction Flag. Informs the host if receipt data for this transaction will print at the top of the receipt as follows: '0' - will not print data for this transaction at the top of the receipt '1' - will print data for this transaction at the top of the receipt.

Field	Number of Characters	Mandatory/Optional	Description
g	1	M	Message Coordination Number. Contains a character assigned by the SST to each Transaction Request message. The SST assigns a different coordination number to each successive Transaction Request on a rotating basis. The valid range of the coordination number is 31 hex to 3F hex, or if Enhanced Configuration Parameter option 34 (MCN Range) is set to 001, from 31 hex to 7E hex. The host must include the corresponding coordination number when responding with a Transaction Reply command and can optionally include it in an Interactive Transaction Response. This ensures that the Transaction Reply or Interactive Transaction Response (TREP/ITR) corresponds to the Transaction Request. If the coordination numbers do not match, by default the SST sends a solicited status message with a Command Reject status. The host can override this verification by sending a Message Coordination Number of '0' in a TREP/ITR. Then the SST will not verify that the coordination number matches the one sent in the last Transaction Request message. Option 34 can also be set such that the TREP/ITR is not rejected when the coordination number does not match. Instead, the message is ignored and the SST continues waiting for a TREP/ITR with the correct coordination number. If the message from Central is ignored, the response timer is reset as if a Command Reject had been sent.
FS	1	M	Field Separator
h	Var (39)	*See* Table Note 1	Track 2 Data. Contains up to 39 characters of Track 2 data from the start sentinel to the end sentinel inclusive. Characters are in the range 30-3F hex.
FS	1	M	Field Separator
i	Var (106)	*See* Table Note 1	Track 3 Data. Contains up to 106 characters of Track 3 data from the start sentinel to the end sentinel inclusive. Characters are in the range 30-3F hex.
FS	1	M	Field Separator
j	8	*See* Table Note 1	Operation Code Data. Contains the data collected in the Operation Code buffer as a result of function display keys pressed. States "D - Pre-Set Operation Code Buffer State", "E - Four FDK Selection Function State" and "Y - Eight FDK Selection Function State" determine the contents of this field, which identifies the transaction selected by the consumer.
FS	1	M	Field Separator

Field	Number of Characters	Mandatory/Optional	Description
k	8 or 12	*See* Table Note 1 Table Note 4	Amount Entry Field. Identifies the amount entry made at the keyboard. The content of this field is determined by the Amount Entry, Enhanced Amount Entry and Note Mix Selection states. The data is right-justified with leading zeros to the left. This field, if requested in the transaction request state, is either eight or twelve bytes long. It will be zero-filled if no amount entry has been made since the last Card Read state was executed. The length is selected in the Configuration Parameters Load message or the Enhanced Configuration Parameters Load message.
FS	1	M	Field Separator
l	Var (32)	*See* Table Note 1	PIN Buffer (Buffer A). Contains a 16-character PIN, encrypted as specified in the FIT, for remote PIN verification.
FS	1	M	Field Separator
m	Var (32)	*See* Table Note 1	General Purpose Buffer B. Contains the keyboard data entered during the Information Entry state, or after receiving an Interactive Transaction Response. The last character in this buffer is a graphic 'T' if the SST times out waiting for the cardholder to respond (using the keyboard) to an Interactive Transaction Response, or a graphic 'E' if the cardholder presses the Cancel key. Minimum data length is 3 characters. Maximum data length is 32 characters. May contain: • An amount value entered during the Enhanced Amount Entry state; in this case, the buffer length will be the same as the Amount Entry Field • An amount value or a note mix specified during the Note Mix Selection state.
FS	1	M	Field Separator
n	Var (32)	*See* Table Note 1	General Purpose Buffer C. Contains keyboard data as specified by the Information Entry state. Data length cannot exceed 32 characters. May contain: An amount value entered during the Enhanced Amount Entry state; in this case, the buffer length will be the same as the Amount Entry Field. An amount value or a note mix specified during the Note Mix Selection state.
FS	1	*See* Table Note 2 Table Note 9	Field Separator
o	1	O	Track 1 Identifier. Identifies data in the next field as Track 1 data: '1' - Track 1 data.

Field	Number of Characters	Mandatory/Optional	Description
p	Var (78)	O	Track 1 Data. Contains up to 78 characters of Track 1 data from the start sentinel to the end sentinel inclusive. The character range is 20-5F hex.
FS	1	*See* Table Note 5 & Table Note 9	Field Separator
q	1	*See* Table Note 5	Transaction Status Data Identifier. Identifies the data that follows in the next field as Transaction Status data: '2' - status data.
r	Var (71)	*See* Table Note 5, Table Note 6 & Table Note 7	Last Transaction Status contains status data relating to the previous transaction performed by the SST, as follows: Last Transaction Serial Number - 4 bytes Last Status Issued - 1 byte. *See* Table Note 22. Last Transaction Notes Dispensed Data - 20 bytes or Var bytes. *See* Table Note 11. Last Transaction Coinage Amount Dispensed - 5 bytes (always 00000) Last Transaction Coins Dispensed Data - 20 bytes Last Transaction Cash Deposit Data - 21 or Var bytes Last Transaction Serial Number contains the four-digit serial number of the last transaction partially processed by the SST. If this does not match the last transaction serial number sent by the host, the transaction was not initiated. Last Status Issued contains one byte identifying what the last known status message sent from the SST was (other than download-type messages). It does not necessarily relate to the Transaction Serial Number. The value will be one of the following: '0' - none sent '1' - good termination sent '2' - error status sent '3' - transaction reply rejected. If option 76 is set to 000 (four cassette types), Last Transaction Notes Dispensed Data contains four five-digit decimal counts defining the notes dispensed on the last transaction if the last function command received and processed was a dispense command. These counts will be zero if the last function command received and processed was not a dispense command. If option 76 is set to 001 (seven cassette types), Last Transaction Notes Dispensed Data contains seven five-digit decimal counts defining the notes dispensed on the last transaction if the last function command received and processed was a dispense command. These counts will be zero if the last function command received and processed was not a dispense command.

Field	Number of Characters	Mandatory/Optional	Description
			If a Coin Dispenser is present and option 79 is set to 000 (four hopper types), the Last Transaction Coins Dispensed Data contains four five-digit decimal counts defining the coins dispensed from each hopper on the last dispense transaction. These coin counts (20 bytes) will be zero if the last function command was not a coin dispense type function, or if this is the first transaction after installation. If a Coin Dispenser is present and option 79 is set to 001 (more than four hopper types), the 25 bytes of coin data in field 'r' are all set to zeros, and the Last Transaction Coins Dispensed Data is provided in fields 'cf1' to 'cf <n+1>' (data ID 'f') rather than field 'r'. If a Coin Dispenser is not present, all 25 bytes are zero. The Last Cash Deposit Transaction Direction is present if a BNA or GBXX is present and contains 1 byte as follows: '0' - last transaction was not a cash deposit '1' - vault direction '2' - refund direction. Where bit 0 of option 45 (BNA Settings) is set, the following data will also be included: Number of Notes Refunded during last transaction - 5 bytes Number of Notes Rejected during last transaction - 5 bytes Number of Notes Encashed during last transaction - 5 bytes Number of Notes Escrowed during last transaction - 5 bytes If the ECB 6 regulations are enforced and level 3 is configured, all suspect notes are encashed even if the Last Cash Deposit Transaction Direction is reported as '2', refund direction. Counterfeit notes are not reported in these fields. Where bits 1, 3 and 6 of option 45 (BNA Settings) are set, the following data will also be included: Number of recycle cassettes reported - 2 bytes NDC Cassette Type - 3 bytes Number of Notes - 3 bytes Number of Recycle Cassettes Reported. Consists of a two-digit decimal count in the range 00 to 99 If no recycle cassette has accepted notes, this field contains 00 and the NDC Cassette Type and Number of Notes fields are not be included. If this is non-zero, it indicates how many times the NDC Cassette Type and Number of Notes pair are repeated. NDC Cassette Type. Consists of one three-digit decimal identifier. The identifier can be between 001 and 007 depending on the cash handler configuration. This field is repeated the same number of times as the number of recycle cassettes reported. If no recycle cassette has accepted notes, this field is omitted.

Field	Number of Characters	Mandatory/Optional	Description
			Number of Notes. Consists of a three-digit decimal count of the number of notes moved to the recycle cassette, in the range 001 to 999. This field is repeated the same number of times as the number of recycle cassettes reported. If no recycle cassette has accepted notes, this field is omitted.
FS	1	*See* Table Note 8 Table Note 9	Field Separator
av1	1	*See* Table Note 8 Table Note 9	CSP Data ID 'U'. A value of 'U' (55H, ASCII) in this field identifies the following field as the first Customer Selected PIN data. If this field is selected in the "I - Transaction Request State" table (see Chapter 2, "State Tables") and no CSP has been requested, only this field will be present.
av2	Var(16)	*See* Table Note 8 Table Note 9	CSP Data. This field contains an encrypted 16 character PIN. See the "FIT Data" table in Chapter 8, "Financial Institution Tables".
FS	1	*See* Table Note 8 Table Note 9	Field Separator
aw1	1	*See* Table Note 8 Table Note 9	Confirmation CSP Data ID 'V'. A value of 'V' (56H, ASCII) in this field identifies the following field as the second Customer Selected PIN data. If this field is selected in the "I - Transaction Request State" table (see Chapter 2, "State Tables") and no CSP has been requested, only this field will be present. If the CSP state indicates that local verification of the two Customer Selectable PINs is to be carried out, only the identifier will be sent if requested by the Transaction Request State.
aw2	Var(16)	*See* Table Note 8 Table Note 9	Confirmation CSP Data. This field contains an encrypted 16 character PIN. For details, see the "FIT Data" table in Chapter 8, "Financial Institution Tables".
FS	1	*See* Table Note 8 Table Note 9 Table Note 10	Field Separator
ax1	1	*See* Table Note 8 Table Note 9 Table Note 10	VC Data ID 'W'. The value 'W' in this field identifies the following field as containing data inserted by Exits.
ax2	Var	*See* Table Note 8 Table Note 9 Table Note 10	This field is available for use by Exits.

Field	Number of Characters	Mandatory/Optional	Description
FS	1	*See* Table Note 8 Table Note 9 Table Note 10	Field Separator
ay1	1	*See* Table Note 8 Table Note 9 Table Note 10	VC Data ID 'X'. The value 'X' in this field identifies the following field as containing data inserted by Exits.
ay2	Var	*See* Table Note 8 Table Note 9 Table Note 10	This field is available for use by Exits.
FS	1	*See* Table Note 8 Table Note 9 Table Note 10	Field Separator
az1	1	*See* Table Note 8 Table Note 9 Table Note 10	VC Data ID 'Y'. The value 'Y' in this field identifies the following field as containing data inserted by Exits.
az2	Var	*See* Table Note 8 Table Note 9 Table Note 10	This field is available for use by Exits.
FS	1	*See* Table Note 8 Table Note 9 Table Note 10	Field Separator
ba1	1	*See* Table Note 8 Table Note 9 Table Note 10	VC Data ID 'Z'. The value 'Z' in this field identifies the following field as containing data inserted by Exits.
ba2	Var	*See* Table Note 8 Table Note 9 Table Note 10	This field is available for use by Exits.
FS	1	*See* Table Note 8 Table Note 9 Table Note 10	Field Separator

Field	Number of Characters	Mandatory/Optional	Description
bb1	1	*See* Table Note 8 Table Note 9 Table Note 10	VC Data ID '['. The value '[' in this field identifies the following field as containing data inserted by Exits.
bb2	Var	*See* Table Note 8 Table Note 9 Table Note 10	This field is available for use by Exits.
FS	1	*See* Table Note 8 Table Note 9 Table Note 10	Field Separator
bc1	1	*See* Table Note 8 Table Note 9 Table Note 10	VC Data ID '\'. The value '\' in this field identifies the following field as containing data inserted by Exits.
bc2	Var	*See* Table Note 8 Table Note 9 Table Note 10	This field is available for use by Exits.
FS	1	*See* Table Note 8 Table Note 9 Table Note 10	Field Separator
bd1	1	*See* Table Note 8 Table Note 9 Table Note 10	Smart Card Data ID '5'. The value '5' in this field identifies the following field as containing data inserted by EMV/CAM2 Exits.
bd2	Var	*See* Table Note 8 Table Note 9 Table Note 10	Smart Card Data. This field is available for use by EMV/CAM2 Exits. For more information on this field when a contactless card is used for transaction, see "Message Format for Field bd2 in Transaction Request" on page 9-20 and "CAM Flags" on page 9-21.
FS	1	*See* Table Note 12	Field Separator
ca1	1	*See* Table Note 12 and Table Note 17	Device ID 'w'. The value 'w' in this field identifies the following two fields as containing cash acceptor data.
ca2	2	*See* Table Note 12 and Table Note 17	Two-digit hexadecimal number (01 - 32) representing a note type, allowing up to 50 note types to be represented.

Field	Number of Characters	Mandatory/Optional	Description
ca3	2 or 3	*See* Table Note 12 Table Note 13 and Table Note 17	Number of notes in the escrow, or vaulted if using direct deposit to cassettes, for the note type defined in ca2. This field has either 2 or 3 digits, depending on whether option 45 is set to report more than 90 notes or not. If option 45 is not set to report more than 90 notes, this is a two-digit number (01 - 90). If option 45 is set to report more than 90 notes, this is a three-digit number (000-999). For details of the settings for option 45, see page 10-17 in the table "Enhanced Configuration Parameters Load".
FS	1	*See* Table Note 14 Table Note 16	Field Separator
cb1	1	*See* Table Note 14 Table Note 16	Document Data ID 'a'. The value 'a' in this field identifies the following field as containing single cheque deposit data.
cb2	1	*See* Table Note 14 Table Note 15 Table Note 16 Table Note 21	Codeline detected. A value of '1' indicates that a minimum number of codeline characters has been detected, A value of '0' indicates that a codeline has not been detected after all allowed retries.
cb3	Var(256)	*See* Table Note 14 Table Note 16	Codeline value. This field is present only if field cb2 has a value of '1', and contains the codeline read from the cheque.
FS		*See* Table Note 8	Field Separator
cc1	1	*See* Table Note 17	Data ID 'c' for notes regarded as suspect under the ECB 6 regulations.
cc2	2		The number of note types with notes identified as suspect; the note type count is a decimal number in the range '00' to '99'. If no note types are identified, this field is '00'and fields 'cc3' and 'cc4' are omitted
cc3	4	*See* Table Note 18	Note type identifier as a hexadecimal number in the range '0001' to '00FF'
cc4	3	*See* Table Note 18	Number of suspect notes of the note type identified in field 'cc3', as a decimal number in the range '001' to '999'
FS			Field Separator

Field	Number of Characters	Mandatory/Optional	Description
cd1	1		Data ID ‘d’ for notes regarded as counterfeit under the ECB 6 regulations.
cd2	2		The number of note types with notes identified as counterfeit; the note type count is a decimal number in the range ‘00’ to ‘99’. If no note types are identified, this field is ‘00’and fields ‘cd3’ and ‘cd4’ are omitted
cd3	4	*See* Table Note 19	Note type identifier. The hexadecimal identifier of the note type in the range ‘0001’ to ‘00FF’
cd4	3	*See* Table Note 19	Number of counterfeit notes of the note type identified in field ‘cd3’, as a decimal number in the range ‘001’ to ‘999’
FS	1		Field Separator
ce1	1	O See Table Note 20	Data ID ‘e’. The value ‘e’ in this field shows that barcode data is being reported.
ce2	4	O	ASCII hexadecimal representation of the Barcode Format identifier. The list of barcode format values is based on the CEN-XFS barcode reader device class, or the value ‘0000’ if the barcode format is not known.
ce3	2	O	Reserved
ce4	Var	O	The scanned barcode data. The length is defined by the barcode format and the length of the scanned barcode. The length of the whole message, including this field, must not exceed the maximum message length, as defined by the COMMS protocol.
FS	1		Field Separator
cf1	1		Data ID ‘f’. The value ‘f’ in this field shows that more than four coin hopper types are being reported.
cf2	2		Number of coins dispensed from hopper type 1.
cf3	2		Number of coins dispensed from hopper type 2.
cf4	2		Number of coins dispensed from hopper type 3.
cf5	2		Number of coins dispensed from hopper type 4.
:			
If a coin dispenser is present and option 79 is set to 001, the Last Transaction Coinage Amount Dispensed is reported in fields cf1 to cf<*n+1*> instead of field r as described on page 9-5. Depending on the number of hopper types present, *n* is a number between 5 and 8.			
:			
cf<*n+1*>	2		Number of coins dispensed from hopper type *n*.

Field	Number of Characters	Mandatory/Optional	Description
FS	1	*See* Table Note 8 Table Note 9	Field Separator
cg1	1	*See* Table Note 8 Table Note 9 Table Note 23 Table Note 24	Data ID ‘g’. The value ‘g’ in this field shows that a bunch cheque deposit is being reported
cg2	3	*See* Table Note 23	Total Cheques to Return. This field contains a count of the cheques inserted into the bunch cheque acceptor, but not included in the deposit transaction These cheques have either failed the quality assessment or the cardholder has requested their return. They are returned to the cardholder when the remaining cheques are processed during a Transaction Reply This field is ‘000’ if no cheques are returned The following fields only contain details of the cheques that are not going to be returned
cg3	4		Must be ‘0000’
cg4	3	*See* Table Note 23	Deposit Currency. This field contains the three-character ISO 4217 currency code for the deposited cheques If multiple currencies are deposited, fields cg4 to cg16 are repeated for each deposited currency
cg5	1		Amount Exponent Sign. This field contains the amount exponent sign, which is either ‘+’ or ‘-’
cg6	2		Amount Exponent Value. This field contains the exponent value for all cheque amounts reported in the bunch cheque deposit buffer The actual cheque amount relates to the amount reported as follows: *<cheque_amount>* = *<cheque_amount_reported>* * 10^*<Exponent>* This field together with the Amount Exponent Sign field defines the *<Exponent>* value For example, if the exponent is -2 and the cheque amount reported is 1234, the cheque amount is 12.34
cg7	12		Total Customer Amount. This field contains the sum of all amounts entered or corrected by the cardholder for cheques to be deposited. If the cardholder has not entered or corrected an amount for a cheque, the derived amount is used to calculate the total customer amount This field contains a decimal number padded to the left with zeros
cg8	12		Total Derived Amount. This field contains the sum of all amounts for cheque to be deposited derived from image processing technologies This field contains a decimal number padded to the left with zeros This field is always zero.

Field	Number of Characters	Mandatory/Optional	Description
cg9	4		Must be '0000'
cg10	3	*See* Table Note 25	Cheque Identifier. This field contains a three-digit number in the range '001'-'999' that identifies a specific cheque in the deposit request The value starts at '001' for each new transaction
cg11	12	*See* Table Note 25	Customer Cheque Amount. This field contains the value of the cheque identified in field cg10 as entered or corrected by the cardholder. If the cardholder has not entered or corrected the amount, this field is set to zero This field supplies the *<cheque_amount_reported>* value used in calculating the cheque amount as described in field cg6 This field contains a decimal number padded to the left with zeros
cg12	12	*See* Table Note 25	Derived Cheque Amount. This field contains the value of the cheque identified in field cg10 as derived from image processing technologies. If there is no derived value, this field is set to zero This field supplies the *<cheque_amount_reported>* value used in calculating the cheque amount as described in field cg6 This field contains a decimal number padded to the left with zeros This field is always zero
cg13	3	*See* Table Note 25	Codeline Length. This field contains the length of the data reported in field cg14 for the cheque identified in field cg10 This field contains a decimal number in the range '000'-'999'
cg14	var	*See* Table Note 26 Table Note 27 Table Note 25 Table Note 28 Table Note 29	Codeline Data. This field contains the codeline read from the cheque
cg15	1	*See* Table Note 25	Cheque Group separator
cg16	1	*See* Table Note 24	Currency Group separator
FS	1	*See* Table Note 8 Table Note 9	Field Separator
ci1	1	*See* Table Note 8 Table Note 9 Table Note 30	Data ID '<'. The value '<' in this field shows that voice guidance data is being reported.
ci2	2	*See* Table Note 8 Table Note 9 Table Note 30	Voice guidance language identifier.

Field	Number of Characters	Mandatory/Optional	Description
w	1	O	Field Separator
	1	O	Optional data fields. These fields will be used for future expansion.
	Var	O	Data.
FS	1	*See* Table Note 8 & Table Note 9	Field Separator
x	8	*See* Table Note 3	Message Authentication Code Data. This field contains the calculated value for authentication of this message.

Table Note 1: Fields 'h' to 'n' are optional, and the fields to be included in the message are specified in the Transaction Request state. If no keys have been loaded into the encryptor, field 'l' is not sent.

Table Note 2: A field separator and optional fields 'o' and 'p' comprise a group. When included in the message, all the fields of this group must be present. The field separator must also be present if any of the succeeding fields are present.

Table Note 3: Fields 'e' and 'x' and the preceding field separator are present only if the Data security feature is selected and the security flags settings require their inclusion. For details, refer to the *APTRA Advance NDC, Supervisor's Guide*.

Table Note 4: The standard field length is eight digits, but it can be configured for twelve digits. For details, see the "Configuration Parameters Load" section in Chapter 10, "Central to Terminal Messages".

Table Note 5: Fields 'q' and 'r' and the preceding field separator are present only if specified by Enhanced Configuration Option 15. For details, see the "Enhanced Configuration Parameters Load Message" section in Chapter 7 and "Enhanced Configuration Parameters Load" section in Chapter 10. The field separator must also be present if any of the succeeding fields are present.

Table Note 6: If notes with an unknown presented status are detected following a power failure, counts are reported as "00000000000000000000" in the next message. On Diebold's SSTs, if notes with an unknown presented status following a power failure are to be treated as presented, the counts are reported in the next message. For information about configuring the presented status, refer to Chapter 6, "Advance NDC on Specific Vendors' SSTs" of the *APTRA Advance NDC Multi-Vendor Support Reference*.

Table Note 7 Coin counts are reported only if one of the following is true:

- A coin dispenser is present
- No coin dispenser is present but a note acceptor is present, in which case the coin counts are initialised to zero.

Table Note 8: The optional fields from 'av1' onwards with the preceding field separator form field groups. The name of each field is given by two alphabetic characters with each sub-field element identified by a numeric character. These fields are used for general expansion of the transaction request message. Each field is identified by an ID field. Each field is only included in the message if the corresponding flag is set in the Transaction Request state. If the Transaction Request state specifies that a field will be included, at least the data identifier will be present. If the flag for a field is not set, the entire field and its preceding field separator are not included.

Table Note 9: If any of the fields from 'av1' onwards are included in the message, the field separators preceding fields 'o'–'p' and 'q'–'r' will be present even if the associated data is not.

Table Note 10: Fields '**ax***' to **'bd***' are available for use by Exits. They may contain any seven-bit ASCII data subject to length limits imposed by the communication protocol in use, except that they must not contain Group Separator (1DH) or Field Separator (1CH) characters.

Table Note 11: The Last Transaction Notes Dispensed data consists of 4 or 7 five-digit decimal counts, defining the notes dispensed in the last dispense transaction. If the last received command was not a dispense command, these counts will be zero.

Table Note 12: If a cash acceptor is present, the preceding field separator and optional cash acceptor fields 'ca1', 'ca2' and 'ca3' are included as a group. When multiple note types are reported in the transaction request message, the sequence of these fields is 'ca1 ca2 ca3 ca2 ca3 ....', where 'ca2' and 'ca3' are repeated for the types that are present, up to 50 note types.

Table Note 13: If you use ECB 6, this field includes notes identified as suspect or authentic, but not notes identified as counterfeit. Suspect notes are treated as authentic notes.

Table Note 14: If a cheque processor is present, the preceding field separator and optional cheque processor fields 'cb1', 'cb2' and 'cb3' are included as a group. The cheque processor fields are only included in the message if the corresponding flag is set in the Transaction Request state, in which case at least the Buffer Identifier

will be present. When a flag for a field is not set, the entire field and its preceding field separator are not included.

Table Note 15: If the corresponding flag is set in the Transaction Request state and the optional cheque processor fields ‘cb1’, ‘cb2’ and ‘cb3’ are used to report a bunch cheque deposit, field ‘cb2’ is set to 0.

Table Note 16: When any of the fields ‘cb1’, ‘cb2’ or ‘cb3’ are to be included in the message, the field separators preceding fields ‘o’ and ‘p’, and ‘q’ and ‘r’ will be present even if the associated data is not.

Table Note 17: The suspect note counts are also included in the ‘ca1’, ‘ca2’ and ‘ca3’ fields as they are treated as authentic.

Table Note 18: Fields ‘cc3’ and ‘cc4’ are reported for each note type with suspect notes.

Table Note 19: Fields ‘cd3’ and ‘cd4’ are reported for each note type with counterfeit notes.

Table Note 20: If a barcode reader is present, the preceding field separator and optional barcode reader fields ‘ce1’, ‘ce2’ and ‘ce4’ are included as a group. The barcode reader fields are only included in the message if the corresponding flag is set in the Transaction Request state, in which case at least the Buffer Identifier will be present. When a flag for a field is not set, the entire field and its preceding field separator are not included.

Table Note 21: If the codeline is not detected after all allowed retries, it may not be present on the cheque. In case the cheque can be endorsed without a codeline, the cheque details are still sent to the host.

Table Note 22: The Last Status Issued byte applies only to solicited status messages; unsolicited messages are not part of the transaction status.

Table Note 23: If the field group with Data ID 'g' is present and *all* cheques are to be returned, only field ‘cg2’ is included. If any field from cg4 onwards is also present, fields ‘cg2’ to ‘cg9’ are mandatory.

Table Note 24: To support cheque deposits of more than one currency, fields ‘cg4’ to ‘cg16’ are repeated for every currency except for the last currency in the message when field ‘cg16’ is omitted. The totals in fields ‘cg7’ and ‘cg8’ contain the totals for the first currency and are followed by the details for the cheques in the

first currency. This grouping is repeated for each additional currency.

Table Note 25: The details for each cheque to be deposited must be provided in the field group with Data ID 'g', with fields 'cg10' to 'cg14' repeated to report every cheque to be deposited in this transaction. The details for each cheque are separated from the previous cheque details by a group separator (field 'cg15') and even the last cheque has a trailing group separator.

Table Note 26: The characters read from the codeline in E13B format will have the following encoding:

Table 9-2
E13B Codeline Encoding

NDC Character	Hex Value	E13B Character	E13B Meaning
0-9	0x30 to 0x39	0-9	0-9
b	0x62		Amount
c	0x63		On us
d	0x64		Transit
-	0x2D		Dash
space	0x20	space	Space
!	0x41	N/A	Reject/Unreadable

Table Note 27: The characters read from the codeline in CMC7 format will have the following encoding:

Table 9-3
CMC7 Codeline Encoding

NDC Character	Hex Value	CMC7 Character	CMC7 Meaning
0-9	0x30 to 0x39	0-9	0-9
b	0x62		S2 - Start of the Amount field
c	0x61		S1 - Start of Bank Account
d	0x65		S5 - Transit/Routing
e	0x64		S4 - Unused in normal cheques

NDC Character	Hex Value	CMC7 Character	CMC7 Meaning
-	0x2D		S3 - Terminate routing
space	0x20	space	Space
!	0x41	N/A	Reject/Unreadable

Table Note 28: The codeline field in the field group with Data ID ‘g’ is empty if it cannot be read.

Table Note 29: If the field with Data ID ‘a’ is used to deposit a bunch of cheques (that is, using the single cheque Transaction Request buffer), no codeline data is provided and field ‘cb2’ in buffer ‘a’ is set to ‘0’.

Table Note 30: The voice guidance bytes are only present if the transaction is a voice-guided transaction and the buffer is defined in the XML configuration file. If the voice guidance buffer is not used, the Operation Code field (field ‘j’) can be used to identify voice-guided transactions and the language used.

Advance NDC always sends a solicited status (error or ready) in response to a transaction reply. The Last Status Issued byte value of 0 will only be seen if the SST is reset while processing a transaction reply, or on the very first transaction after persistent memory is cleared.

This field is present to guard against the previous response being lost due to a communications failure, and indicates what status Advance NDC previously attempted to send to Central. This is so that a communications failure will not cause the value to be set to 0.

If you have problems reconciling the unsolicited E5 message (unknown number of notes retracted) with the transaction, then message mode Option Digit 4A should be used to send a delayed dispenser status message.

SST Reply to Interactive Transaction Response

The host can request further information during a transaction using an Interactive Transaction Response (ITR). If this occurs, a sub-set of the Transaction Request message is used to reply to the request.

When the Transaction Request message is sent in reply to an ITR, it differs from the previous description in that it consists only of the following fields.

Table 9-4
Transaction Request in Reply to an Interactive Transaction Response

b	Message Class
c	Message Sub-Class Field Separator
d	Logical Unit Number 2 Field Separators
e	Time Variant Number Field Separator
f	Top of Receipt Transaction Flag
g	Message Coordination Number 6 Field Separators
m	General Purpose Buffer B. Minimum data length is 1 character 1 or 2 Field Separators *See* Table Note 31
v	MAC Data

Table Note 31: If the amount entered exceeds the limit of 32 bytes, the next key press clears the buffer, resetting the value to 0 and restarting the entry from the beginning.

Message Format for Field bd2 in Transaction Request

This section defines the format of the additional smart card 'bd2' data contained in the Transaction Request message when a contactless card (EMV-Like or Magnetic Stripe-Like card with EMV data) is used to perform the transaction. This message also contains the smart card data that the Central needs in order to authorise a smart card transaction at the terminal.

Table 9-5
Message Format for Field bd2 in Transaction Request

Field	Number of Characters	Mandatory/ Optional	Description
bd2	-	-	Smart card data - see sub-fields:
bd2a	3	See Table Note 32	Smart card data identifier. CAM - data in buffer is for CAM
bd2b	4	See Table Note 32	CAM Flags. For values, see "CAM Flags" on page 9-21.

bd2c	Var	See Table Note 32, Table Note 33 and Table Note 34	EMV data objects for authorisation.
			As an example with the following data:
			`Application Identifier (AID) 0x9F06`
			`Track 2 Equivalent Data 0x57`
			`Application PAN 0x5A`
			`Application PAN Sequence Number 0x5F34`
			`Cryptogram Information Data 0x9F27`
			`Application Cryptogram 0x9F26`
			`Issuer Application Data 0x9F10`
			`Application Interchange Profile (AIP) 0x82`
			`Application Transaction Counter (ATC) 0x9F36`
			`CDOL1 0x8C`
			`PIN Retry Count 0x9F17`
			This field would contain the following (actual values will vary):
			'9F 06 07 A0 00 00 00 08 00 01 57 12 12 34 56 78 90 12 34 56 78 90 D9 90 10 81 23 45 67 89 5A 0A 12 34 56 78 90 12 34 56 78 90 5F 34 01 00 9F 27 01 00 9F 26 08 12 34 56 78 90 12 34 56 9F 10 07 06 01 01 03 A0 00 00 82 02 7C 00 9F 36 02 01 23 8C 15 9F 02 06 9F 03 06 9F 1A 02 95 05 5F 2A 02 9A 03 9C 01 9F 37 04 9F 17 01 03'

Table Note 32: These fields are only included in the Transaction Request if the following are true:

- The Transaction Request State indicates that EMV\CAM buffers needs to be added. For information about Transaction Request State, see "I - Transaction Request State" on page 2-39.
- A contactless card has been tapped and the outcome was successful.

Table Note 33: If no data objects are identified, none are present and effectively this field is absent.

Table Note 34: If a data object held in 'bd2c' field is not available, the data object is not present.

CAM Flags

There are 16 available CAM flags. These are encoded as the bits in two bytes and are converted to ASCII hex (four bytes) for transmission. Each can have the value 0 or 1 with the following meanings:

Table 9-6
CAM Flags

Byte	Bit	Value	Description
1	8	0	See Table Note 35
	7	0	See Table Note 35
	6	0	See Table Note 35
	5	0	See Table Note 35
	4	0	See Table Note 35
	3	0	See Table Note 35
	2	0	See Table Note 35
	1	0	See Table Note 35
2	8	0	See Table Note 35
	7	0	See Table Note 35
	6	0	See Table Note 35
	5	0	See Table Note 35
	4	0	See Table Note 35
	3	1	Contactless smart card processing was initiated
	2	0 or 1	0 – Mode of contactless transaction is Magnetic Stripe-Like. 1 – Mode of contactless transaction is EMV-Like.
	1	0 or 1	0 – Transaction is performed using a contact card reader. 1 – Transaction is performed using a contactless card reader.

Table Note 35: These bits will always be zero when transaction is performed using a contactless card.

For more information about general purpose buffers, refer to the *APTRA Advance NDC, Developer's Guide*.

Solicited Status Messages

The SST responds to a command from the host by sending a solicited status message. This section gives information about the format and content of solicited status messages.

Content of Solicited Status Messages

The information in the status message depends on the command received and whether or not the SST can perform the command. The following fields in the status message contain this information:

- Status Descriptor
- Status Information.

Note: Exits can also send solicited status messages. These have the same format as standard solicited status messages, but the content of the Status Descriptor and Status Information fields depends on the Exit. For more information, refer to *APTRA Advance NDC, Extending the Product*.

Status Descriptor Field

The status descriptor field identifies which of the following conditions is being reported:

- Ready. The command has been performed successfully
- Device Fault. A device fault has occurred.
- Command Reject/Specific Command Reject. The command has been rejected
- Terminal State. The values of supply counters or SST configuration are included in the message.

Status Information Field

The status information field contains additional information when a Device Fault, Specific Command Reject or Terminal State descriptor is used. For more details, see "Status Information" on page 9-24.

Table 9-7
Solicited Status Message Format

Field	Number of Characters	Mandatory/Optional	Description
a	Var	M	Header. Protocol-dependent.
b	1	M	Message Class. The message class is: '2' - Solicited message.

Field	Number of Characters	Mandatory/Optional	Description
c	1	M	Message Sub-Class. The message sub-class is: '2' - Status message.
FS	1	M	Field Separator
d	3 or 9	M	Logical Unit Number (LUNO). This number is defined in a field transmitted to the SST in a Configuration Parameters Load message. The default number is 000. If the data security feature is configured, an additional six characters are present which contain the machine number. For details, refer to the *APTRA Advance NDC, Supervisor's Guide*.
FS	1	M	Field Separator
FS	1	M	Field Separator
e	8	*See* Table Note 36 Table Note 37	Time Variant Number. Contains an eight-digit number derived from the time of day by the SST for each status message. The digits can be 0-9, A-F.
FS	1	*See* Table Note 36	Field Separator
f	1	M	Status Descriptor. Describes the status message as follows: '8' **Device Fault** - This indicates that an SST device is reporting abnormal status. This value is also used in a configuration ID status message. '9' **Ready** - This indicates that the instruction was completed successfully. 'A' **Command Reject** - This is inserted into the status descriptor field under the following conditions: 1. SST receives an illegal command. 2. SST receives illegal data from the host. 3. SST receives data while not in the correct mode. For more information, see the "Message Validation" section in Chapter 10, "Central to Terminal Messages". 'B' **Ready** - This indicates that the Transaction Reply was successfully completed. (When separate 'Ready' for Transaction Reply commands option has been selected as a configuration parameter.) 'C' **Specific Command Reject** - This is sent to indicate a rejection of the message for authentication failure, or if the specific command reject option is set and a message is rejected that would otherwise generate a command reject 'A'. The status information field identifies the reason for rejection.

Field	Number of Characters	Mandatory/Optional	Description	
			'F'	**Terminal State** - This is sent in response to Terminal Commands requesting supply counters, SST configuration information, or the date and time.
FS	1	*See* Table Note 38		Field Separator
g	Var	*See* Table Note 38		Status Information. Additional status information is sent only when the status descriptor contains '8', 'C' or 'F'.
FS	1	*See* Table Note 36 Table Note 37		Field Separator
h	8	*See* Table Note 36 Table Note 37		Message Authentication Code (MAC) Data. Contains the calculated value for authentication of this message. The characters are in the range 0-9 and A-F.
i	Var	M		Trailer. Protocol-dependent.

Table Note 36: This is not sent unless Message Authentication is in use, and has been selected for solicited status messages. For details, see the "Message Authentication Field Selection Load" section in Chapter 10, "Central to Terminal Messages".

Table Note 37: This is not sent if the Status Descriptor field contains '9' or 'B'.

Table Note 38: This is not sent unless the Status Descriptor field contains '8', 'C' or 'F'.

Status Information

Additional information can optionally be contained in the Status Information field when the 'B' - Ready status descriptor is used. Additional information is always contained in the Status Information field when the following status descriptors are used:

- 'C' - Specific Command Reject
- 'F' - Terminal State
- '8' - Device Fault.

Reporting of CIM NDC Cassette Types

Cash In Module (CIM) NDC cassette types are reported in Ready B, terminal command and device status messages. The number of CIM NDC cassette types and the order in which they are reported to the host depends on the reporting of the XFS logical cash units by the platform.

On a GBXX system, CIM NDC cassette type reporting depends on the initial position of the cassettes following installation. If new XFS logical cash units are inserted, these are appended to the existing reporting order. A fixed mapping can be configured to match the deposit and dispense cassette IDs. For further details about cassette type reporting, refer to Chapter 5, "Configuring Advance NDC and Associated Components" of the *APTRA Advance NDC, Developer's Guide*.

Ready ('B') Status

When the Status Descriptor is 'B' and the Ready status is set to include transaction status data, the following information is present in the Status Information field. For details of setting the Ready status to include transaction status data, see "Supply Mode, Ready Status & Amount Buffer Length (Field 'm')" on page 7-2.

Table 9-8
Ready ('B') - Status Information

Field	Number of Characters	Mandatory/Optional	Description
g1	4	M	Transaction Serial Number (TSN). Contains the TSN of the last transaction processed by the SST.
FS	1	M	Field Separator *See* Table Note 39
g2	1	O	Data Identifier. Identifies the data that follows in the next field as follows: 1 - Recycle Cassette Deposit Data 2 - Recycle Cassette Dispense Data
g3	Var	O	Transaction Data. Contains the transaction data as follows: For a deposit using recycle cassettes, see "Cash Deposit Recycle Data - Sub-field 'g3'" on page 9-26 For a dispense using recycle cassettes, see "Recycle Cassette Dispense Data - Sub-field 'g3'" on page 9-27. *See* Table Note 40

Table Note 39: If no additional data is present, the field separator is omitted. New data groups may be included in the future.

Table Note 40: A group separator follows each reported cassette, except the last.

Cash Deposit Recycle Data - Sub-field 'g3' If the transaction is identified as a deposit using recycling cassettes or has caused the status of the recycling cassettes to change, the data shown in Table 9-9 is returned in the Ready 'B' message.

Note: For recycling cassettes, the mappings between the physical cassette units, the XFS logical cash units and the NDC cassette types can be configured using the registry. For more information, refer to section "Configuring Cash Handlers" in Chapter 5 of the *APTRA Advance NDC, Developer's Guide*.

Table 9-9
Cash Deposit: Recycle Data

Field	Description
g3-1	Number of Cash Dispenser Module (CDM) Recycle NDC Cassette Types Reported. This is in the range 01 to 99.
g3-2	CDM Recycle NDC Cassette Type. Consists of one three-digit identifier for the cassette type being reported. The identifier can be between 001 and 007. This is repeated for each CDM recycle cassette that has accepted notes. *See* Table Note 41
g3-3	Number of Notes Stored or Retained. Consists of a three-digit decimal count of the number of notes deposited. This is in the range 001 to 999. This is repeated for each CDM recycle cassette that has accepted notes. *See* Table Note 41
g3-4	Current Fitness Status. For details, see "Fitness Data" on page E-20. This is repeated for each CDM recycle cassette that has accepted notes. *See* Table Note 41
g3-5	Current Supplies Status. For details, see "Supplies Data" on page E-12. This field does not report no change. This is repeated for each CDM recycle cassette that has accepted notes. *See* Table Note 41
	GS. *See* Table Note 41

Table Note 41: If the number of CDM NDC recycle cassette types is greater than 1, fields g3-2 to g3-5 and the GS inclusive are repeated for every CDM cassette that has taken notes. The GS for the last cassette reported is omitted.

Recycle Cassette Dispense Data - Sub-field 'g3' If the transaction data is identified as a dispense using recycle cassettes or has caused the status of recycle cassettes to change, the data in Table 9-10 is returned in the Ready 'B' message.

Note: The initial position occupied by a cassette is used to map the cash-in NDC cassette type to the XFS logical cash unit. When recycling is enabled on a GBXX, fixed mapping must be used to report fixed cassette types in a Ready 'B' and other status messages. For further information, refer to section "Fixed Cassette Mapping for Recycling" in Chapter 5, "Configuring Advance NDC and Associated Components" of the *APTRA Advance NDC, Developer's Guide*.

Table 9-10
Recycle Cassette: Dispense Data

Field	Description
g3-1	Number of CIM NDC Recycle Cassette Types Reported. This is in the range 01 to 99.
g3-2	CIM Recycle NDC Cassette Type. Consists of one three-digit identifier for the cassette type being reported. The identifier can be between 000 and 255. This is repeated for each CIM recycle cassette that has dispensed notes. *See* Table Note 41
g3-3	Number of Notes Dispensed. Consists of a three-digit decimal count of the number of notes dispensed. This is in the range 001 to 999. This is repeated for each CIM recycle cassette that has dispensed notes. Rejected notes are moved to the reject bin from the cassette and are included in the total number of dispensed notes returned in the Ready 'B' message. *See* Table Note 41
g3-4	Current Fitness Status. For details, see "Cash Acceptor Fitness (DIG 'w')" on page E-25. This is repeated for each CIM recycle cassette that has dispensed notes. *See* Table Note 41
g3-5	Current Supplies Status. For details, see "Cash Acceptor Supplies (DIG 'w')" on page E-17. This field does not report no change. This is repeated for each CIM recycle cassette that has dispensed notes. *See* Table Note 41
1	GS. *See* Table Note 41

Table Note 42: If the number of CIM recycle NDC cassette types is greater than 1, fields 'g3-2' to 'g3-5' and the GS are repeated for every CIM recycle cassette that has taken notes. The GS for the last cassette reported is omitted.

Specific Command Reject

When the Status Descriptor is 'C' - Specific Command Reject, the following information is present in the Status Information field. For details of the conditions under which individual status values are generated, see "Message Validation" on page 10-102.

Table 9-11
Specific Command Reject - Status Information

Field	Number of Characters	Mandatory/ Optional	Description
g1	1	M	Status Value. Gives the reason for rejecting the command. Values are: '1' - MAC Failure. Result of MAC verification did not equal the MAC field in the message. '2' - Time Variant Number Failure. The time variant number received in the last Transaction Reply message is not the same as the last transmitted value. '3' - Security Terminal Number Mismatch. The number received in the last transaction reply security terminal number is not the same as the number held in the SST.
			'A' - Message Format error. (g2) Status Qualifier: 01 Message length error. 02 Field Separator missing/unexpectedly found. 03 Transaction Reply message has too many print groups. 04 Group Separator missing/unexpectedly found. 05 Reserved 06 Invalid dispense message, wrong format for current mode or a request has been made to dispense from multiple dispensers. Not supported 07 Malformed XML. 08 XML does not conform to XML schema. 09 Inconsistent XML Configuration download. Not supported
			'B' - Field Value error. (g2) Status Qualifier: 01 Illegal Message Class. 02 Illegal Message Sub-Class or Identifier. 03 Illegal Encryption Key Change or Extended Encryption Key Change Message Modifier. 04 Illegal Terminal Command Code. 05 Illegal Terminal Command Modifier. 06 Illegal Transaction Reply Function Identifier.

Field	Number of Characters	Mandatory/ Optional	Description	
			07	Data field contains non-decimal digit.
			08	Data field value out of range.
			09	Invalid Message Coordination number.
			10	Illegal FIT number.
			11	Invalid dispense mix specified. No notes or coins were specified or too many notes or coins were specified in a dispense function.
			12	Reserved
			13	Unrecognised Document Destination.
			14	Reserved
			15	Unrecognised Buffer Identifier.
			16	Reserved
			17	Document Name Error.
			18	The screen identifier is out of range.
			19	Reserved
			20	No data supplied to endorse cheque
			21	Reserved
			22	Invalid Encryption Key Size.
			23	RSA Signature Verification Failed.
			24	Signature or Encryption Key PKCS#1 Packing Failed.
			25	Signature or Encryption Key PKCS#1 Unpacking Failed.
			26	Invalid Signature or Encryption Key PKCS#1 Pad Block Type.
			27	Fixed Header Decryption Failed.
			28	Null Byte After Padding Missing.
			29	Invalid Pad Byte Count.
			33	Invalid Cassette Type. Not supported
			34	Invalid/Incomplete Cheque Identifier(s).
			35	Passbook update not supported in specified Transaction Reply Function.
			36	Encryption key not found. A key referenced in the Encryption Key Exchange or Extended Encryption Key Change command not found.

Field	Number of Characters	Mandatory/ Optional	Description
			37 Encryption function failed. The Encryption Key Exchange or Extended Encryption Key Change command failed.
			38 Authentication not supported/required for command identified. The command identified in the Start Authentication is not supported or authentication is not required to execute the command.
			'C' - Illegal Message type for current mode. (g2) Status Qualifier: 01 Message type only accepted while SST is In-Service and expecting a Transaction Reply 02 Message not accepted while diagnostics is in progress. This is returned when the application has passed control to VDM 03 Message not accepted while in Out-of-Service or Supply mode 04 Message not accepted while in In-Service mode 05 Message not allowed while configured for NCR status message mode 06 Message not allowed while SST is configured for Diebold status message mode. Not supported 07-09 Reserved 10 Message not accepted while processing a Transaction Reply. 11 Cheque not present in cheque processor transport while processing a Transaction Reply 12-14 Reserved 15 Encryption Key Change or Extended Encryption Key Change message not accepted during a cardholder transaction, or while the SST is in suspend mode, or while the operator is initiating the execution of supervisory/ settlement transactions. 16 Reserved 17 Key change operation cannot be accepted in restricted encryption mode. This applies when an Extended Encryption Key Change message with modifier '3', '4', '6' or '7' is received in restricted mode. 18 Key entry mode not authorised.
			'D' - Hardware Failure. (g2) Status Qualifier: 01 Encryption failure during Encryption Key Change or Extended Encryption Key Change message.

Field	Number of Characters	Mandatory/ Optional	Description	
			02	Time-of-Day Clock failure or invalid data sent during Date/Time Set command
			03-05	Reserved
			06	Insufficient disk space.
			07	File IO error.
			08	File not found.
			'E' - Function Not Supported.	
			(g2) Status Qualifier:	
			01	Function not supported by software. For example, a DLL required to complete the transaction reply processing is missing.
			02	Required device not configured. Also, sideways print on the receipt is requested, but either the printer does not have the capability or has not been configured for sideways printing.
			03	Reserved
			04	Reserved
			05	Journal printer backup inactive.
			06	The data requested is not compatible with the required response message. Not supported
g2	2	O	Status Qualifier. Present for status values 'A' - E'. (See preceding text)	

Terminal State

This section describes what information can be contained in field 'g', the Status Information field, when the Status Descriptor is 'F' - Terminal State.

Field 'g' is made up of a number of sub-fields named 'g1', 'g2', 'g3' and so on. Sub-field 'g1' identifies which terminal command has been received, as shown in the following table. The remaining sub-fields contain the status information requested by that command, as shown in the subsequent tables.

Table 9-12
Terminal State - Status Information Sub-Field 'g1'

Terminal Command	Sub-Field 'g1'
Send configuration information	1
Send supply counters	2
Send tally information. Not Supported	3

Terminal Command	Sub-Field 'g1'
Send error log information. Not supported	4
Send date/time information	5
Send configuration ID	6
EKC retrieve hallmark key. Not supported	F
Hardware configuration data	H
Supplies data	I
Fitness data	J
Tamper and sensor status data	K
Software ID and release number data	L
Local configuration option digits	M
Report cash deposit definition	N

Send Configuration Information

This solicited status message is sent to the host in response to a Send Configuration Information Terminal Command message (a command code of '7' with no command modifier, or a command modifier of 6 to include enhanced configuration information). The response returns all the configuration information available.

If a message with a command code of '7' also has a command modifier, the response returns the configuration information specified by the command modifier. For details of the terminal command code, see "Configuration Information (Command Code = 7)" on page 10-5.

For the configuration responses when a modifier other than 6 is included, see sections "Hardware Configuration Data Only" on page 9-48 to "Report Cash Deposit Definition" on page 9-59.

Table 9-13
Send Configuration Information Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message is sent to the host in response to a Send Configuration Information Terminal Command message and has identifier '1'
g2	4	M	Configuration ID. Contains the last four-digit configuration ID numbers (0000–9999) sent to the SST from the host
FS	1	M	Field Separator
g3	22 or 38	M	Hardware Fitness. Contains one byte for each device or major device resource. The position of the byte identifies the device; the byte indicates the fitness status. For details, see "Hardware Fitness—Sub-field 'g3'" on page 9-35
FS	1	M	Field Separator
g4	44 or 76	M	Hardware Configuration. Contains information for each device indicating whether or not it is configured. If configured, it gives details of which option, if any, is configured. For details, see "Hardware Configuration Data—Sub-Field 'g4'" on page 9-38. **Note:** As the byte size for this field is limited, some new device configurations cannot be sent, for example barcode reader.
FS	1	M	Field Separator
g5	23 or 26	M	Supplies Status. Contains one byte per type of media container or resource. The position of the byte identifies the media resource; the byte indicates the supplies status. For details, see "Supplies Status—Sub-field 'g5'" on page 9-46

Field	Number of Characters	Mandatory/Optional	Description
FS	1	M	Field Separator
g6	5 or 12	M	Sensor Status. Contains one byte per sensor and is identical to the information reported in characters 2-13 of "Sensors (Unsolicited)" on page 9-114. As in the status messages, TI sensors are reported only if the TI feature is configured. The number of characters is always twelve if fields 'g7' and 'g8' are present. The last seven bytes are blank if no TI is present
FS	1	O	Field Separator
g7	6	O	Advance NDC Release Number. Contains a six-digit decimal number. The first pair of digits represents the release number. The second pair of digits represents the point release number. The third pair of digits represents the patch release number. *See* Table Note 43.
FS	1	O	Field Separator
g8	9	O	Advance NDC Software ID. Contains the Advance NDC Software ID. The field takes the following values: G531-0283 `(Advance NDC package)` If the Advance NDC software ID is unavailable, this field contains nine blanks. *See* Table Note 43.

Table Note 43: Fields 'g7' and 'g8' are included only if the appropriate message mode option digit 6C is set. For details of this option digit (6C, add the Advance NDC Release Number and Software ID fields to the Configuration Terminal State Message), refer to the *APTRA Advance NDC, Supervisor's Guide*.

Hardware Fitness—Sub-field 'g3' The device is identified by the position of the byte, as shown in the following table. The field

returns the fitness of most devices and modules for an overall view of the state of the SST.

Table 9-14
Hardware Fitness Sub-Field 'g3'

Byte position	Device indicated
0	Time-of-Day Clock, *see* Table Note 44
1	High Order Communications
2	System Disk
3	Magnetic Card Reader/Writer, *see* Table Note 44
4	Cash Handler, *see* Table Note 44
5	Depository, *see* Table Note 44
6	Receipt Printer, *see* Table Note 44
7	Journal Printer, *see* Table Note 44 and Table Note 45
8	Reserved
9	Reserved
10	Night Safe Depository, *see* Table Note 44
11	Encryptor, *see* Table Note 44
12	Security Camera
13	Door Access. (*Not supported*)
14	Flex Disk
15	Cassette type 1
16	Cassette type 2
17	Cassette type 3
18	Cassette type 4
19-20	Reserved for new devices (= 0)
21	Statement Printer, *see* Table Note 44
22	Signage Display, *see* Table Note 46
23-24	Reserved, *see* Table Note 46
25	System Display, *see* Table Note 46
26	Media Entry Indicators, *see* Table Note 46
27	Envelope Dispenser, *see* Table Note 44 and Table Note 46
28	Document Processing Module. Not supported *See* Table Note 46

Byte position	Device indicated
29	Coin Dispensing Module Tamper Indication *See* Table Note 46
30	Document Processing Module, Module Tamper Indication. Not supported *See* Table Note 46
31	Reserved, *see* Table Note 46
32	Voice Guidance System *See* Table Note 46
33	Reserved, *see* Table Note 46
34	Bunch Note Acceptor *See* Table Note 46
35	Cheque Processor *See* Table Note 46
36	Biometric Capture Device (*Not supported*) *See* Table Note 46
37	Reserved *See* Table Note 46

Table Note 44: The relationship between the Device Identifier Graphic (DIG) in the status message and the offset in the Fitness table is: `offset = DIG - 41 hex`

Table Note 45: When dual mode is configured using Enhanced Configuration Parameter option 35, only the status of the physical device is reported. For details of option 35, see "Option 35 – Report Dual Mode EJ & Hardcopy B/U Unsolicited Messages" on page 7-13.

Table Note 46: These fields are returned only if command modifier '6', "Send enhanced configuration data", is used. For details, see "Configuration Information (Command Code = 7)" on page 10-5 in table "Terminal Commands" on page 10-3.

Fitness Severity Each byte indicates the current fitness of the device by a severity value, as shown in the following table. Routine, warning and fatal conditions (severity values 1, 2 and 4) can only be cleared by local supervisor functions.

Table 9-15
Hardware Fitness Severity Values

Severity Value	Meaning
0	No error
1	Routine errors have occurred
2	Warning conditions have occurred - investigation required
3	Suspend. Terminal is currently in suspend state due to suspected tampering with this device
4	Fatal error condition exists

Hardware Configuration Data—Sub-Field 'g4' The configuration data for each device is reported as two hexadecimal characters representing a byte of configuration information. The following table gives details of the byte position for each device and the value or bit significance of each byte as appropriate.

Table 9-16
Hardware Configuration Data: Sub-Field 'g4'

Byte	Device	
0	Product	Class
	0E	5663
	0F	5674
	10	5675
	11	5684
	12	5685
	13	5688
	14	5665
	15	5670
	16	Personas 75
	17	Personas 88
	18	Personas 40
	19	Personas 70
	1A	Personas 74
	1B	Personas 84
	1C	Personas 85
	1D	Personas 90
	1E	EasyPoint 55 or EasyPoint 57
	1F	Personas 86
	20	5588
	21	Personas 73
	22	Personas 72
	23	Personas 77
	24	6674
	25	6676
	26	5879
	27	5887
	28	5362
	29	Personas 71

Byte	Device	
	2A	5867
	30	6622
	31	6624
	32	6626
	33	6628
	34	6631
	35	6632
	36	6634
	37	6638
	38	6625
	39	6618
	3A	6636
	3B	2012 (SelfServ 22e)
	3C	2016 (SelfServ 16)
	3D	6642 (SelfServ 42)
	3E	2004 (SelfServ 4)
	3F	2008 (SelfServ 8)
	40	2014 (SelfServ 14)
	41	6691
	42	6623
	43	6627
	44	6683
	45	6687
		Note: This list does not imply Advance NDC support for all these product classes.
1	7F	No configuration
2	System Disk	
	00	Hard disk present
	01	Reserved
	02	Reserved

Byte	Device	
3	Magnetic Card Reader/Writer. *See* Table Note 47.	
	00	No card reader attached
	01	Track 2 (read only)
	02	Reserved
	03	Track 1/2/3 MCRW (write on track 3 only). *(Also returned if card reader cannot be identified)*
	04	Reserved
	05	PC Dip Reader
	06	Reserved
	07	3 Track Write MCRW
	08	Track 2 Smart Card Reader
	09	Track 1/2/3 Smart Card Reader
	0A	3 Track Write Smart Card Reader
	0B	Track 1/2 and Track 2/3 Dip MSR
	0C	Track 1/2/3 CIM86 MCRW
	10	Track 1/2 Dip MSR
	11	Track 1/2 Swipe Reader
	1D	Dip and Smart Hardware (DASH) Reader
	1E	Track 1/2/3 with MM
	1F	Track 1/2/3 Smart with MM
	20	Track 3 Smart with MM
	47	Card Reader that only supports Magnetic Stripe Data (MSD). *See* Table Note 48
	48	Contactless Card Reader that supports Magnetic Stripe Data (MSD) and Contactless EMV Transactions. *See* Table Note 48
4	Cash Handler. *See* Table Note 47, Table Note 52 and Table Note 53	
	00	Not configured
	01	Stacking cash handler
	02	Spray cash dispenser
	03	Stacking cash handler with recycle capabilities. *See* Table Note 49
	04	Stacking cash handler capable of recycling with recycle capabilities disabled *See* Table Note 49
5	Envelope Depository *See* Table Note 47.	
	00	Not configured
	01	Reserved
	02	Programmable Printing Depository (PPD)
	03	Reserved
	04	Reserved

Byte	Device	
6	Receipt Printer. *See* Table Note 47.	
	00	Not configured
	01	Plain paper
	02	Black dot paper
	03	Sideways printing, no black mark
	04	Sideways printing, black mark
	05	Thermal printer - no black mark
	06	Thermal printer - black mark
	07	Thermal printer - sideways printing, no black mark
	08	Thermal printer - sideways printing, black mark
7	Journal Printer. *See* Table Note 47.	
	00	Not configured
	01	Integral journal printer
	02	Reserved
	03	Thermal printer
	80	Electronic journal
	81	Electronic journal and integral journal printer.
	82	Reserved
	83	Electronic journal and thermal printer.
8	Reserved	
	00	Not configured
9	Reserved	
	00	Not configured
10	Night Safe Depository. *See* Table Note 47.	
	00	Not configured
	01	Configured
	02	Reserved

Byte	Device
11	Encryptor. *See* Table Note 47. ?0 Not configured ?1 BAPE encryptor. 02 Reserved 03 Reserved 04 Reserved 05 Reserved 06 Reserved ?7 EPP encryptor ? = SST key entry mode (0, B, C or D) where: 0 = single-length keys without XOR key entry B = single-length keys with XOR key entry C = double-length keys D = double-length keys, restricted mode. S*ee* Table Note 50 For example, C7 = double-length key entry with an EPP encryptor.
12	Security Camera 00 Not configured 01 Fixed format 02 Variable format 03 Reserved 04 Digital
13	Door Access (*Not supported*) 00 Not configured
14	Flex Disk 00 Not configured 01 1.44 MB flex disk connected. 02 2.88 MB flex disk connected

Byte	Device	
15	Tamper Indicating (TI) Bins. *See* Table Note 47. Not coin dispenser	
	00	Not configured
	01	Secure cash and insecure cards, and either insecure deposit bin or no envelope depository (PPD). This value is always set to 01 as Advance NDC cannot determine if TI exists in a multi-vendor environment as this capability is not supported in CEN XFS.
	02	Secure cash, insecure cards and secure deposits. Not supported
	03	Secure cash and cards, and either insecure deposit bin or no envelope depository (PPD). *(Not supported)*
16	Cardholder Keyboard	
	00	Reserved
	01	Standard (BAPE) keyboard
	02	EPP keyboard
17	Operator Keyboard	
	00	Not configured
	01	Standard keyboard (basic)
	02	Keyboard plus FDKs (enhanced).
18	Cardholder Display/Voice	
	Bit 0	0 - (always)
	Bit 1	0 - (always)
	Bit 2	0 - Voice not supported
	Bit 2	1 - Voice supported if digital audio present.
	Bit 3	0 - Standard FDKs
	Bit 3	1 - Touch screen
	Bit 4	0 - (always)
	Bit 5	0 - (always)
	Bit 6	0 - (always)
	Bit 7	0 - (always)
19	7F	No configuration
20	7F	No configuration
21	Statement Printer *See* Table Note 47.	
	00	Not configured
	01	Standard statement printer
	02	Reserved
	03	Reserved
	09	Enhanced thermal statement printer (SDC+)
22-23	Reserved *See* Table Note 51.	

Byte	Device
24	Coin Dispenser 00 Not Configured 01 Reserved 02 Coin Dispenser with four hopper types 03 Coin Dispenser with more than four hopper types
25	System Display. *See* Table Note 51. 00 Not configured 01 Reserved 02 Configured
26	Media Entry Indicators. 00 Not configured 01 Configured
27	Envelope Dispenser. *See* Table Note 47 and Table Note 51. 00 Not configured 01 Configured 02 Reserved 03 Reserved
28	Document Processing Module (*Not supported*) *See* Table Note 51. 00 Not configured
29	Coin Dispensing Module Tamper Indication. *See* Table Note 51. 00 Not configured 01 Configured
30	Document Processing Module Tamper Indication. Not supported. *See* Table Note 51. 00 Not configured
31	Reserved. *See* Table Note 51.
32	Voice Guidance *See* Table Note 51 00 Not configured 01 Standard Audio present 02 Enhanced Audio present
33	Reserved. *See* Table Note 51.

Byte	Device	
34	Note Acceptor *See* Table Note 47 and Table Note 51	
	00	Not configured
	01	Reserved
	02	Reserved
	03	Bunch note acceptor
	04	Bunch note acceptor with recycle capabilities, also known as a recycling unit. On NCR SSTs, this is either a GBRU or BRM. *See* Table Note 49.
	05	Bunch note acceptor. On NCR SSTs, this is called a GBNA but it can also be reported when a GBRU or BRM with recycling disabled is present. *See* Table Note 49
	06	Bunch note acceptor that can accept either cash or cheques but not both in a single transaction. *See* Table Note 53
	07	Bunch note acceptor that can accept notes and cheques separately or together in a single transaction. (*Not supported*)
	08	Single note acceptor
35	Cheque Processor *See* Table Note 47 and Table Note 51	
	00	Not configured
	01	Single cheque accept module (CPM)
	02	Bunch cheque acceptor
	03	Bunch cheque acceptor that can also accept cash. The device can accept either cash or cheques but not both in a single transaction. *See* Table Note 53
	04	Bunch cheque acceptor that can also accept cash. The device can accept both cash and cheques separately or together in a single transaction. (*Not supported*)
36-37	Reserved. *See* Table Note 51.	

Table Note 47: The relationship between the DIG and the configuration table offset is: `offset = 2 x (DIG - 41 hex).`

Table Note 48 The variant of contactless card reader is reported to host as:

- 47 in Advance NDC 4.03 and supports only the Magnetic Stripe Data.
- 48 from Advance NDC 4.04 and supports both Magnetic Stripe Data and contactless EMV.

Table Note 49 The M-Status values reported in device status messages are specific to the device.

Table Note 50 If an attempt is made to import a key with the same value as the currently loaded key, the import is rejected with encryption failure reason 'D01'.

Table Note 51: These fields are returned only if command modifier '6', "Send enhanced configuration data", is used. For details, see "Configuration Information (Command Code = 7)" on page 10-5 in table "Terminal Commands" on page 10-3.

Table Note 52: When dual cash handlers are used, either both cash handlers must be standard cash handlers or one cash handler must be a standard cash handler and the other a GBRU. If a GBRU is used, it must be configured as the primary cash handler.

Table Note 53: An NCR scalable deposit module (SDM) can be configured as a cheque processor that can accept cash and cheques or as a cash acceptor that can accept cash and cheques.

Supplies Status—Sub-field 'g5' The media container or resource is identified by the byte position, as shown in the following table:

Table 9-17
Supplies Status Sub-Field 'g5'

Byte position	Device indicated
0	Reserved
1	Reserved
2	Not used (= 0)
3	Card Capture Bin
4	Cash Handler Reject Bin
5	Deposit Bin
6	Receipt Paper
7	Journal Paper
8	Not used (= 0)
9	Not used (= 0)

Byte position	Device indicated
10	Night Safe
11	Not used (= 0)
12	Not used (= 0)
13	Not used (= 0)
14	Not used (= 0)
15	Type 1 Currency Cassettes
16	Type 2 Currency Cassettes
17	Type 3 Currency Cassettes
18	Type 4 Currency Cassettes
19	Not used (= 0)
20	Not used (= 0)
21	Statement Paper
22	Statement Ribbon
23	Reserved, *see* Table Note 54
24	Reserved, *see* Table Note 54
25	Envelope Dispenser, *see* Table Note 54

Table Note 54: These fields are returned only if command modifier '6', "Send enhanced configuration data", is used. For details, see "Configuration Information (Command Code = 7)" on page 10-5.

Supplies Values Each byte indicates the current status of the supples by a numeric value, as shown in the following table, which gives generic values. A status of '0' - Not configured' for currency bins indicates that no cassettes of that type were installed on the last exit from Supervisor, and no subsequent attempt has been made to dispense from that type. If attempts are made to dispense from a cassette type that is not installed, the status changes to '3' - Media out.

For details of differences for specific devices, see "Supplies Data" on page E-12.

Table 9-18
Supplies Status Values

Supplies Value	Meaning
0	Not configured
1	Good state
2	Media low
3	Media out
4	Overfill

Hardware Configuration Data Only

This solicited status message is sent to the host in response to a Send Configuration Information terminal command with a command code of '7' and a command modifier of '1'.

The message contains all the available information relating to the hardware configuration of the SST and must be used where devices other than those returned in a Configuration Message are present or thought to be present in the SST.

The following table describes the format and contents of field 'g' for this message:

Table 9-19
Hardware Configuration Data Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier 'H'.
g2	1	M	Configuration ID Identifier 'A'.
	Var (4)	M	Configuration ID. This four-character field contains the last four-digit configuration ID number, in the range 0000-9999, sent to the terminal from the host.
FS	1	M	Field Separator

Field	Number of Characters	Mandatory/Optional	Description
g3	1	M	Product Class Identifier ‘B’.
	Var (2)	M	Product Class. This two-character field contains the Product Class of the SST. The following entries are possible, but this does not mean that Advance NDC supports all these classes: ‘0E’ - 5663 ‘0F’ - 5674 ‘10’ - 5675 ‘11’ - 5684 ‘12’ - 5685 ‘13’ - 5688 ‘14’ - 5665 ‘15’ - 5670 ‘16’ - Personas 75 ‘17’ - Personas 88 ‘18’ - Personas 40 ‘19’ - Personas 70 ‘1A’ - Personas 74 ‘1B’ - Personas 84 ‘1C’ - Personas 85 ‘1D’ - Personas 90 ‘1E’ - EasyPoint 55 or EasyPoint 57 ‘1F’ - Personas 86 ‘20’ - 5588 ‘21’ - Personas 73 ‘22’ - Personas 72 ‘23’ - Personas 77

Field	Number of Characters	Mandatory/Optional	Description
			'24' - 6674 '25' - 6676 '26' - 5879 '27' - 5887 '28' - 5362 '29' - Personas 71 '2A' - 5867 '30' - 6622 '31' - 6624 '32' - 6626 '33' - 6628 '34' - 6631 '35' - 6632 '36' - 6634 '37' - 6638 '38' - 6625 '39' - 6618 '3A' - 6636 '3B'- 2012 (SelfServ 22e) '3C' - 2016 (SelfServ 16) '3D' - 6642 (SelfServ 42) '3E' - 2004 (SelfServ 4) '3F' - 2008 (SelfServ 8) '40' - 2014 (SelfServ 14) '41' - 6691 '42' - 6623 '43' - 6627 '44' - 6683 '45' - 6687
FS	1	M	Field Separator
g4	1	M	Hardware Configuration Identifier 'C'. This field contains hardware configuration information for each of the devices present in the SST. It is divided into a series of subfields separated by group separators. If a device is not present, there will be no corresponding DIG in the field.
	1	O *See* Table Note 55	Device Identifier Graphic (DIG). This identifies the device to which the following hardware configuration data applies. For details, see "Hardware Configuration Data" on page E-2.
	Var	O *See* Table Note 55	Hardware Configuration. This contains information for each device indicating which variant of the device is configured and any other configuration data available. For details, see "Hardware Configuration Data" on page E-2.

Field	Number of Characters	Mandatory/Optional	Description
	1	O *See* Table Note 56	Group Separator.
	1	O *See* Table Note 56	Device Identifier Graphic (DIG).
	Var	O *See* Table Note 56	Hardware Configuration.
g5	1	O *See* Table Note 57	Field Separator.
	1	O *See* Table Note 57	Device Identifier Graphic (DIG).
	Var	O *See* Table Note 57	Data.

Table Note 55: The DIG and its associated data form a group. When the DIG is present, all elements of this group must be present.

Table Note 56: The DIG and its associated data, together with the preceding group separator form a group. When the DIG is present, all elements of this group must be present. Such groups are repeated as often as necessary to ensure that the data relating to all devices present in the SST is reported.

Table Note 57: These fields are reserved for future expansion.

Note Acceptor Capabilities Advance NDC can additionally report the capabilities of the hardware device variant identified in characters 1 and 2. If configured to do so, characters 3 to 6 are used to report the capabilities and are an ASCII representation of a hexadecimal number (in the range 0000 to FFFF). Each bit reports whether a capability is supported or not. The following capabilities can be reported:

Table 9-20
Note Acceptor Capabilities

Bit	Value	Description
0 (Escrow capabilities)	0	The device has no escrow
	1	The device has an escrow
1 (Direct deposit capabilities)	0	The device does not support direct deposit
	1	The device supports direct deposit

Examples of the data returned are shown in the following table:

Table 9-21
Note Acceptor Capabilities: Example Data

Value	Description
050003	GBNA supporting direct deposit
030001	BNA with an escrow but not supporting direct deposit
080002	SNA without an escrow and supporting only direct deposit

The additional data is reported only if the `ReportExtendedHardwareConfiguration` property on `CashInStatusHandler` is set to true (the default) in *CashInCustom.accfg*. For details, refer to section "Configuring Note Acceptors" in Chapter 5, "Configuring Advance NDC and Associated Components" of the *APTRA Advance NDC Developer's Guide.*

The host application must be able to support both SSTs that return the additional data and those that do not. Devices that do not have an escrow and therefore can only be used in Direct Deposit mode require an application flow designed to accommodate the fact that notes cannot be refunded.

If the network supports SSTs that have devices with escrows and devices without escrows, different state flows may have to be downloaded to the different SSTs. Identification of devices that support direct deposit can only be achieved if the NDC application reports characters 3 to 6 and the host can interpret the content of these characters.

Supplies Data

This solicited status message is sent to the host in response to a Send Configuration Information terminal command message (a command code of '7' with a command modifier of '2'). For details, see "Terminal Commands" on page 10-3.

For more information about the reporting of CIM NDC cassette types, see "Reporting of CIM NDC Cassette Types" on page 9-24.

Note: If enhanced configuration option 83, described on page 7-21, is set to '000', no supplies data is sent to the host for the cheque processor.

Table 9-22
Supplies Data Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier 'I'.
g2	1	M	Supplies Status Identifier 'A'. This field contains supplies information for each of the devices present in the SST. It is divided into a series of sub-fields separated by group separators.
			If a device is not present or has no associated replenishables, then there will be no supporting Device Identifier Graphic (DIG) in the field.
	1	O *See* Table Note 58	Device Identifier Graphic (DIG). This identifies the device to which the following supplies status data applies. For details, see Chapter E, "Device Identifiers".
	Var	O *See* Table Note 58	Supplies Status. This contains information for each device indicating the condition of the device's replenishables. For details, see "Supplies Data" on page E-12. Except for cash acceptors—see "Cash Acceptor Supplies (DIG 'w')" on page E-17— each element of the supplies status data will take one of the following values: **Value** **Description** '0' Not configured/reserved '1' Good state '2' Media low '3' Media out '4' Overfill
	1	O *See* Table Note 59	Group Separator.
	1	O *See* Table Note 59	Device Identifier Graphic (DIG).
	Var	O *See* Table Note 59	Supplies Status.

Field	Number of Characters	Mandatory/Optional	Description
g3	1	O *See* Table Note 60	Field Separator
	1	O *See* Table Note 60	Data Identifier.
	Var	O *See* Table Note 60	Data.

Table Note 58: The DIG and its associated data, together with the preceding group separator form a group. When the DIG is present, all elements of this group must be present.

Table Note 59: The DIG and its associated data, together with the preceding group separator form a group. When the DIG is present, all elements of this group must be present. Such groups are repeated as often as necessary to ensure that the data relating to all devices present in the SST is reported.

Table Note 60: These fields are reserved for future expansion.

Fitness Data

This solicited status message is sent to the host in response to a Send Configuration Information terminal command message (a command code of '7' with a command modifier of '3'). For details, see "Terminal Commands" on page 10-3.

For more information about the reporting of CIM NDC cassette types, see "Reporting of CIM NDC Cassette Types" on page 9-24.

Table 9-23
Fitness Data Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier 'J'.
g2	1	M	Hardware Fitness Identifier 'A'. This field contains fitness information for each of the devices present in the SST. It is divided into a series of sub-fields separated by group separators.
	1	O *See* Table Note 61	Device Identifier Graphic (DIG). This identifies the device to which the following fitness data applies. For details, see Appendix E, "Device Identifiers".

Field	Number of Characters	Mandatory/Optional	Description
	Var	O *See* Table Note 61	Fitness. Each fitness character is encoded with one of the following error severity values, indicating the current fitness of the device: **Char** **Severity** '0' No error/not supported '1' Routine errors have occurred '2' Warning conditions have occurred - investigation is required '3' Suspend. The SST is currently in the suspend state due to suspected tampering with this device '4' Fatal error condition exists on this device Routine, warning and fatal errors can only be cleared by local Supervisor functions. For details, see "Fitness Data" on page E-20.
	1	O *See* Table Note 62	Group Separator.
	1	O *See* Table Note 62	Device Identifier Graphic (DIG).
	Var	O *See* Table Note 62	Fitness
g3	1	O	Field Separator (Present for future expansion)
	1	O	Data Identifier (Present for future expansion)
	Var	O	Data - present for future expansion (Present for future expansion)

Table Note 61: The DIG and its associated data, together with the preceding group separator form a group. When the DIG is present, all elements of this group must be present.

Table Note 62: The DIG and its associated data, together with the preceding group separator form a group. When the DIG is present, all elements of this group must be present. Such groups are repeated as often as necessary to ensure that the data relating to all devices present in the SST is reported.

Tamper and Sensor Status Data

This solicited status message is sent to the host in response to a Send Configuration Information terminal command message (a command code of '7' with a command modifier of '4'). For details, see "Terminal Commands" on page 10-3 . This status message reports physical cassettes, including cassettes other than cash-in cassettes when the device is a combined cash-in/cash-out device.

Table 9-24
Tamper and Sensor Data Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier 'K'.
g2	1	M	Sensor Status Identifier 'A'.
	Var (5)	M	Sensor Status. This five-character field contains one byte per sensor and is identical to the information reported in bytes 2-6 of the Sensors Status message. For details, see the "Sensors (Unsolicited)" section.
	1	M	Field Separator
g3	1	M	Tamper Indicator Identifier 'B'.
	Var	M	Tamper Status. This field contains the status of the TI sensors. If the TI feature is not configured, this field, with the buffer identifier, will not be present.

The contents of the tamper status data field are as follows:

Char	Code
1-7	Identical to bytes 7-13 of the Sensors Status message, described in the "Sensors (Unsolicited)" section.
8	'0' Coin Dispenser out. '1' Coin Dispenser in.
9	'0' Coin Dispenser Hopper 1 out. '1' Coin Dispenser Hopper 1 in.
10	'0' Coin Dispenser Hopper 2 out. '1' Coin Dispenser Hopper 2 in.
11	'0' Coin Dispenser Hopper 3 out. '1' Coin Dispenser Hopper 3 in.
12	'0' Coin Dispenser Hopper 4 out. '1' Coin Dispenser Hopper 4 in.
13	*Not supported*

If a device is not configured, any associated TI byte will take the value '0'.

Field	Number of Characters	Mandatory/Optional	Description
g4	1	O	Extended Tamper Indicator Identifier 'C'. *See* Table Note 63
	1	*See* Table Note 64 and Table Note 65	Device Identifier Graphic (DIG). This field contains data on each device present in the SST.
	Var	*See* Table Note 64 and Table Note 65	Tamper Status. This field contains the condition of the TI sensors. If the TI feature is not configured, this field, with the buffer identifier, will not be present. The length of the configuration data varies depending on the device being reported. For details, see Tamper Indicator Identifier 'B'.
	1	O	Group Separator
	1	O	Device Identifier Graphic (DIG). This field contains data on each device present in the SST. For details, see "Tamper Data" on page E-27.
	Var	O	Tamper Status. This field contains the condition of the TI sensors. If the TI feature is not configured, this field, with the buffer identifier, will not be present. For details, see Tamper Indicator Identifier 'B'.
g5	1	*See* Table Note 66	Field Separator.
	1	*See* Table Note 66	Data Identifier.
	Var	*See* Table Note 66	Data.

Table Note 63: The setting of Enhanced Configuration option 24 determines whether the extended tamper information is sent. For details of option 24, see "Option 24 – Enhanced/TI Sensor Status Unsolicited Message" on page 7-9.

Table Note 64: The DIG and associated data are a group. If the DIG is present, all the elements of the group must also be present.

Table Note 65: A DIG and associated data are included as often as required to report on all devices.

Table Note 66: These fields are present for future expansion.

Software ID and Release Number Data

This solicited status message is sent to the host in response to a Send Configuration Information terminal command message (a command code of '7' with a command modifier of '5'). For details, see "Terminal Commands" on page 10-3.

Table 9-25
Software ID and Release Number Data Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier 'L'
g2	1	M	Buffer Identifier 'A' NDC Release Number
	Var (6)	M	Contains a six-digit decimal number. The first pair of digits represent the release number. The second pair of digits represent the point release number. The third pair of digits represent the patch release number. For example, 040300 is release 4.03
FS	1	M	Field Separator
g3	1	M	Buffer Identifier 'B'
	Var (9)	M	NDC Software ID. Contains the software ID of the Advance NDC product currently running on the SST, as follows: G531-0283 *(for the Advance NDC package)* If the Advance NDC software ID is unavailable, this field contains nine blanks.
g4	1	O	Field Separator. This field is present for future expansion.
	1	O	Data Identifier. This field is present for future expansion.
	Var	O	Data. This field is present for future expansion.

Enhanced Configuration Data

This solicited status message is sent to the host in response to a Send Configuration Information terminal command message (a command code of '7' with a command modifier of '6'). It returns all the configuration information available.

For details of this message, see "Send Configuration Information" on page 9-34. Enhanced information is included in sub-fields 'g3', 'g4' and 'g5' as described in the following sections:

- "Hardware Fitness—Sub-field 'g3'" on page 9-35
- "Hardware Configuration Data—Sub-Field 'g4'" on page 9-38
- "Supplies Status—Sub-field 'g5'" on page 9-46.

Local Configuration Option Digits

This solicited status message is sent to the host in response to a Send Configuration Information terminal command message (a command code of '7' with a command modifier of '7').

In Advance NDC, the option digits settings are automatically saved to persistent storage, and hence are used on power failure recovery. Some options are not supported. For details, refer to the *APTRA Advance NDC, Developer's Guide*.

Table 9-26
Local Configuration Option Digits Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier 'M'.
g2	1	M	Local Options Identifier 'A'.
	Var (16)	M	Local Option Digits. These characters represent the values of the Local Option Digits, entered using the MSG MODE option on the Configure menu in Supervisor mode. For details, refer to the *APTRA Advance NDC, Supervisor's Guide*. Each character is an ASCII representation of the associated Option Digit.
g3	1	O	Field Separator. Reserved for future expansion.
	1	O	Data Identifier. Reserved for future expansion.
	Var	O	Data. Reserved for future expansion.

Report Cash Deposit Definition

This solicited status message is sent to the host in response to a Send Cash Deposit Definition terminal command message (a command code of '7' with a command modifier of '8').

Table 9-27
Note Definitions (BNA) Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier ('N')
g2	1	M	Accepted Cash Items Identifier ('A')
	Var (11)	O	Cash type information, 11 characters for each type up to a maximum of 50 cash types. *See* Table Note 67 and Table Note 68.
FS	1	O	*See* Table Note 69
g3	1	O	ECB 6 Note Retention Mode ID ('D')
	3	O	ECB 6 Note Retention Mode
FS	1	O	*See* Table Note 69
	1	O	Data Identifier. Reserved for future expansion
	Var	O	Data. Reserved for future expansion

Table Note 67: This field is repeated for each item type recognized by the deposit module. For note acceptors, NDC note type mapping is performed when Advance NDC is started. For more information, refer to the *APTRA Advance NDC, Developer's Guide.*

Table Note 68: Each cash item type consists of 11 bytes with the following format:

#	B	B	I	S	O	V	A	L	U	E

which is interpreted as follows:

Byte	Meaning
#	Active indicator (! = inactive) If the note is identified as active, it can be accepted by the BNA. If the note is identified as inactive it is rejected.

Byte	Meaning
BB	Cash item identifier Bit positions (01H - 32H)
ISO	Three-character ISO 4217 Country Code (for example, USD = US dollar)
VALUE	The value of the item, padded right with spaces. To allow values that require more than 5 characters to represent the value a multiplier is appended to the value as follows: • One thousand is represented as 1K • Ten thousand is represented as 10K • One hundred thousand is represented as 100K One hundredth of the currency unit is represented as 1c. The multiplier character must be contained within the 5 available characters for the value. The following multipliers are defined: c = 10^{-2} K = 10^{3} M = 10^{6} G = 10^{9} T = 10^{12} X = Value cannot be represented

Table Note 69: The field separators must be present if any other fields follow.

Table Note 70: If the following message is returned, use INIT BNA to clear the device and populate the Cash Item type message, as follows:

```
22<fs>000<fs><fs>F<fs>NA
```

The “NA” at the end of the message is returned as the device is in a bad state and an attempt has been made to initialise the device.

Send Supply Counters

This Solicited Status message is sent to the host in response to a Send Counters Terminal Command message. Depending on the modifier used with the command code of ‘4’, the basic or extended message is used. For details of the Terminal Command message, see “Terminal Commands” on page 10-3.

For the basic message format, see the next heading and for the extended message format, see “Extended Send Supply Counters” on page 9-67.

Basic Send Supply Counters The basic message format can report the following:

- Four cassette types. In a dual cash handler system it reports the combined number of notes for each cassette type.
- Four coin hopper types.

Table 9-28
Send Supply Counters Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier '2'.
g2	4	M	Transaction Serial Number (TSN). Contains the TSN of the last transaction processed by the SST. If this does not correspond to the last TSN sent by the host, it means that the transaction has not been initiated and the counters have not been updated.
g3	7	M	Accumulated Transaction Count. Defines the total number of detected transaction attempts since the SST was installed or the non-volatile SST memory was last corrupted. The count is reset to 0 after 9,999,999 transactions. A transaction attempt is detected when it is recognised that the TSN received from the host is different from the previously received TSN.
g4	20	M	Notes In Cassettes. Consists of four five-digit decimal counts of the total number of notes remaining in cassette types 1, 2, 3 and 4. The counts are set by supervisor functions and are decremented on each dispense transaction. These counts are zero if not set by an 'Add Cash' or 'Set Standard Cash' supervisor function. The count contains 65535 (the decimal equivalent of 0FFFF hex) if more notes have been dispensed from a cassette than it has been set to contain, or if notes are dispensed from a cassette type that has not been set. If dual cash handlers are used, the combined number of notes for the cassette type is reported. Only four cassette types are reported, regardless of the setting of the Enhanced Configuration option 76.

Field	Number of Characters	Mandatory/Optional	Description
g5	20	M	Notes Rejected. Consists of four five-digit decimal counts of the total number of notes moved to the reject bin from cassette types 1, 2, 3 and 4. If dual cash handlers are used, the combined number of notes for the cassette type is reported. Only four cassette types are reported, regardless of the setting of the Enhanced Configuration option 76. Although fields 'g4' and 'g5' may not be totally accurate, the sum of these counts for a particular cassette type does accurately represent the difference between the original number of notes added and the number of notes dispensed.
g6	20	M	Notes Dispensed. Consists of four five-digit decimal counts of the total number of notes dispensed from cassette types 1, 2, 3 and 4. These counts are consistent with note counts reported since the counts were last cleared by a supervisor transaction. If dual cash handlers are used, the combined number of notes for the cassette type is reported. Only four cassette types are reported, regardless of the setting of the Enhanced Configuration option 76. If a transaction is prematurely stopped by a power failure, these counts are updated to reflect the number of notes dispensed up to the time of power failure.
g7	20	M	Last Transaction Notes Dispensed. Consists of four five-digit decimal counts of the number of notes dispensed on the last transaction processed by the SST. This field allows the host to recover note counts after power failure, even if the power failure occurred in the middle of a dispense operation.
g8	5	M	Cards Captured. Consists of one five-digit decimal count of the number of cards captured since the count was cleared by a supervisor transaction. The count includes cards captured up to and including the transaction defined in field 'g2'. *See* Table Note 72
g9	5	M	Envelopes Deposited. Consists of one five-digit decimal count of the number of envelopes deposited since the count was last cleared by a Supervisor transaction. The count includes envelopes deposited up to and including the transaction defined in field 'g2'.
g10	5	M	Camera Film Remaining. The camera film remaining is always 00000.
g11	5	M	Last Envelope Serial Number. This is always 00000.
g12	1	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.

Field	Number of Characters	Mandatory/Optional	Description
g20-g22	Var(15)	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.
g30-g32	Var(15)	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.
g40-g4x	Var(x)	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.
g50-g53	Var(20)	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.
g60	Var(20)	O *See* Table Note 73	Coins remaining
g61	Var(20)	O *See* Table Note 73	Coins dispensed
g62	Var(20)	O *See* Table Note 73	Last transaction coins dispensed
GS	1	*See* Table Note 71	Group Separator.
g70	5	O *See* Table Note 74	Total notes refunded
g71	5	O *See* Table Note 74	Total notes rejected
g72	5	O *See* Table Note 74	Total notes encashed
g73	5	O *See* Table Note 74	Total notes escrowed
GS	1	*See* Table Note 71	Group Separator.
g80-g89	5	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.
g90-g99	5	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.
g100-g109	5	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.
g110-g119	5	O	Reserved.

Field	Number of Characters	Mandatory/Optional	Description
GS	1	*See* Table Note 71	Group Separator.
g120	5	O	Cheque processor cheques deposited into BIN1
g121	5	O	Cheque processor cheques deposited into reject/retain BIN2
g122	5	O	Cheque processor cheques deposited into BIN3
g12n	5	O	Cheque processor cheques deposited into BINn-1
GS	1	*See* Table Note 71	Group Separator.
g130-g139	5	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.
g140	5	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.
g150-g154	5	O	Reserved.
GS	1	*See* Table Note 71	Group Separator.
g160	5	O	Number of passbooks captured.

Table Note 71: If any optional group is present, all of the group separators preceding it will be included, enabling the host to identify the group field by its position. (This applies to the basic message format only; the handling of group separators in the extended message format is described in "Extended Send Supply Counters" on page 9-67.)

Table Note 72: Cards Captured field is reported as zero when the contactless card reader is the primary card reader.

Table Note 73: Fields 'g60' - 'g62' form a group and will only be present if a coin dispenser is present.

Table Note 74: Fields 'g70' - 'g73' form a group and will only be present if a BNA is present.:

Fields 'g120' - 'g129' form a group and will only be present if a cheque processor is present.

Example Message Analysis The following example shows a message sent from an SST in response to a basic Send Supply Counters command from the host. The SST has four cassette types but no coin, cheque or passbook capabilities:

```
22<FS>000<FS><FS>F<FS>2027300002670126701681016290077800003000520000200002001940013301131 00
28000000000050000000000000000000000000000000
```

The content of this message is described in the following table:

Table 9-29
Status Message Description

Message Content	Field	Description
2	b	A solicited message
2	c	A status message
000	d	LUNO
F	f	Sent in response to a Terminal Command requesting supply counters, terminal configuration information, or the date and time
2	g1	The Terminal Command has requested supply counters
0273	g2	Transaction Serial Number
0000267	g3	Accumulated transaction count
01267	g4	Number of notes in cassette 1
01681		Number of notes in cassette 2
01629		Number of notes in cassette 3
00778		Number of notes in cassette 4
00003	g5	Number of rejected notes in cassette 1
00052		Number of rejected notes in cassette 2
00002		Number of rejected notes in cassette 3
00002		Number of rejected notes in cassette 4
00194	g6	Number of notes dispensed from cassette 1
00133		Number of notes dispensed from cassette 2
01131		Number of notes dispensed from cassette 3
00280		Number of notes dispensed from cassette 4
00000	g7	Number of notes dispensed from cassette 1 in the last transaction
00005		Number of notes dispensed from cassette 2 in the last transaction
00000		Number of notes dispensed from cassette 3 in the last transaction
00000		Number of notes dispensed from cassette 4 in the last transaction
00000	g8	Number of captured cards

Message Content	Field	Description
00000	g9	Number of deposited envelopes
00000	g10	Amount of remaining camera film. This is always 00000
00000	g11	Last Envelope Serial Number. This is always 00000

Extended Send Supply Counters The extended message format supports the reporting of up to eight coin hoppers. The counts are grouped and separated by group separators.

Table 9-30
Send Supply Counters: Extended Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier '7'.
g2	1		Transaction group id 'A'.
g3	4	M	Transaction Serial Number (TSN). Contains the TSN of the last transaction processed by the SST. If this does not correspond to the last TSN sent by the host, it means that the transaction has not been initiated and the counters have not been updated.
g4	7	M	Accumulated Transaction Count. Defines the total number of detected transaction attempts since the SST was installed or the non-volatile SST memory was last corrupted. The count is reset to 0 after 9,999,999 transactions.
			A transaction attempt is detected when it is recognised that the TSN received from the host is different from the previously received TSN.
GS	1	*See* Table Note 75	Group Separator.
g5	1	*See* Table Note 75	Card Reader data group ID 'B'
g6	5	M	Cards Captured. Consists of one five-digit decimal count of the number of cards captured since the count was cleared by a supervisor transaction. The count includes cards captured up to and including the transaction defined in field 'g3'. *See* Table Note 76
GS	1	*See* Table Note 75	Group Separator.
g7	1	*See* Table Note 75	Cash Handler 0 data group ID 'C'
g8	3	*See* Table Note 75 and Table Note 78	Cassette Type. Consists of one three-digit identifier of the cassette type being reported on. The identifier can be between 000 and 007 depending on the cash handler configuration.

Field	Number of Characters	Mandatory/Optional	Description
g9	5	*See* Table Note 75 and Table Note 78	Notes In Cassettes. Consists of a five-digit decimal count of the number of notes in the cassette.
g10	5	*See* Table Note 75 and Table Note 78	Notes Rejected. Consists of a five-digit decimal count of the number of reject notes. Although fields 'g9' and 'g10' may not be totally accurate, the sum of these counts accurately represents the difference between the original number of notes added and the number of notes dispensed.
g11	5	*See* Table Note 75 and Table Note 78	Notes Dispensed. Consists of a five-digit decimal count of the number of dispensed notes. If a transaction is prematurely stopped by a power failure, these counts are updated to reflect the number of notes dispensed up to the time of power failure.
g12	5	*See* Table Note 75 and Table Note 78	Last Transaction Notes Dispensed. Consists of a five-digit decimal count of the number of notes dispensed during the last transaction.
g13	5	*See* Table Note 75, Table Note 78 and Table Note 80	Notes Deposited. Consists of a five-digit decimal count of the total number of deposited notes.
GS	1	*See* Table Note 75	Group Separator.
g14	1	*See* Table Note 75	Cash Handler 1 data group ID 'D'
g15	3	*See* Table Note 75 and Table Note 78	Cassette Type. Consists of one three-digit identifier of the cassette type being reported on. The identifier can be between 000 and 007 depending on the cash handler configuration.
g16	5	*See* Table Note 75 and Table Note 78	Notes In Cassettes. Consists of one five-digit decimal count of the number of notes in the cassette.
g17	5	*See* Table Note 75 and Table Note 78	Notes Rejected. Consists of a five-digit decimal count of the number of reject notes. Although fields 'g16' and 'g17' may not be totally accurate, the sum of these counts accurately represents the difference between the original number of notes added and the number of notes dispensed. This is because notes presented but not taken and then retracted are sent to the reject bin. In this scenario, the Notes Rejected count is not increased, but the Notes In Cassettes count is decremented.
g18	5	*See* Table Note 75 and Table Note 78	Notes Dispensed. Consists of a five-digit decimal count of the number of dispensed notes. If a transaction is prematurely stopped by a power failure, these counts are updated to reflect the number of notes dispensed up to the time of power failure.

Field	Number of Characters	Mandatory/Optional	Description
g19	5	*See* Table Note 75 and Table Note 78	Last Transaction Notes Dispensed. Consists of a five-digit decimal count of the number of notes dispensed during the last transaction.
g20	5	*See* Table Note 75, Table Note 78 and Table Note 80	Notes Deposited. Consists of a five-digit decimal count of the number of deposited notes.
GS	1	*See* Table Note 75	Group Separator.
g21	1	*See* Table Note 75	Coin dispenser data group ID 'E'.
g22	2	*See* Table Note 75 and Table Note 79	Hopper Type Number. Consists of one two-digit identifier of the hopper type being reported on. The identifier can be between 01 and 08 depending on the coin hopper configuration.
g23	5	*See* Table Note 75 and Table Note 79	Coins Remaining. Consists of a five-digit decimal count of the total number of coins remaining in the hopper type identified in field g22. The counts are set by supervisor functions and are decremented on each dispense transaction. These counts are zero if not set by an 'Add Coins' or 'Std Coins' supervisor function. The count is set to 65535 (the decimal equivalent of 0FFFF hex) if more coins have been dispensed from a hopper than it has been set to contain, or if coins are dispensed from a hopper type that has not been set.
g24	5	*See* Table Note 75 and Table Note 79	Coins Dispensed. Consists of a five-digit decimal count of the total number of coins dispensed from the hopper type identified in field g22. This count is consistent with coin counts reported since the counts were last cleared by a supervisor transaction.
g25	5	*See* Table Note 75 and Table Note 79	Last Transaction Coins Dispensed. Consists of a five-digit decimal count of the number of coins dispensed on the last transaction processed by the SST. This field allows Central to recover coin counts after power failure, even if the power failure occurred in the middle of a dispense operation.
g26	5	*See* Table Note 75, Table Note 79, and Table Note 80	Coins Deposited. Consists of a five-digit decimal count of the total number of coins deposited from the hopper type identified in field 'g22'. This count is consistent with coin counts reported since the counts were last cleared by a supervisor transaction.
GS	1	*See* Table Note 75	Group Separator.
g27	1	*See* Table Note 75	Envelope Depository data group ID 'F'
g28	5	*See* Table Note 75	Envelopes Deposited. Consists of one five-digit decimal count of the number of envelopes deposited since the count was last cleared by a Supervisor transaction. The count includes envelopes deposited up to and including the transaction defined in field 'g3'.
g29	5	*See* Table Note 75	Last Envelope Serial Number. The last envelope serial number is always 00000.

Field	Number of Characters	Mandatory/Optional	Description
GS	1	*See* Table Note 75	Group Separator.
g30	1	*See* Table Note 75	Camera data group ID ‘G’.
g31	5	*See* Table Note 75	Camera Film Remaining. The camera film remaining is always 00000.
GS	1	*See* Table Note 75	Group Separator.
g32	1	*See* Table Note 75	DPM data group ID ‘H’. Not supported.
g33	2	*See* Table Note 75	Deposit Bin Identifier. Not supported.
g34	5	*See* Table Note 75 and Table Note 110	Documents Deposited in Bin. Not supported.
GS	1	*See* Table Note 75	Group Separator.
g35	1	*See* Table Note 81 and Table Note 82	BNA Cassette Counts data group ID ‘I’.
g36	3	*See* Table Note 81, Table Note 82 and Table Note 83	NDC Cassette Type. Consists of one three-digit identifier. The identifier can be between 001 and 999.
g37	5	*See* Table Note 81, Table Note 82 and Table Note 83	Total Notes In Cassette. Consists of a five-digit decimal count of the number of notes in the cassette.
g38	3	*See* Table Note 81, Table Note 82 and Table Note 83	Number of Note Types Reported. This is a value in the range ‘000’ to ‘999’
g39	4	*See* Table Note 81, Table Note 82 and Table Note 84	Note Type Identifier. This is a value in the range’0001’ to ‘FFFF’
g40	5	*See* Table Note 81, Table Note 82, Table Note 84 and Table Note 85	Number of notes of the type identified by the note type identifier in field ‘g39’. Consists of a five-digit decimal count of the number of notes of an identified type.
GS	1	*See* Table Note 75	Group Separator.
g41	1	*See* Table Note 86	Cheque processor data group ID ‘J’
g42	1	*See* Table Note 86 and Table Note 87	Bin Number
g43	5	*See* Table Note 86 and Table Note 87	Cheques deposited in bin
GS	1	*See* Table Note 75	Group Separator.

Field	Number of Characters	Mandatory/Optional	Description
g44	1	*See* Table Note 88	BNA Emulation (and Extended Emulation) deposit data group ID 'K'
g45	5	*See* Table Note 88 and Table Note 89	Total Notes Refunded
g46	5	*See* Table Note 88, Table Note 89 and Table Note 92	Total Notes Returned Rejected
g47	5	*See* Table Note 88 and Table Note 89	Total Notes Encashed
g48	5	*See* Table Note 88 and Table Note 89	Total Notes Escrowed
GS	1	*See* Table Note 75	Group Separator.
g49	1	*See* Table Note 75, Table Note 80 and Table Note 90	Dual Dispenser combined data group ID 'I'
g50	3	*See* Table Note 83	Cassette Type. Consists of one three-digit identifier. The identifier can be between 001 and 007 depending on the cash handler configuration.
g51	5	*See* Table Note 83	Notes in Cassette. Consists of a five-digit decimal count of the number of notes in the cassette.
g52	5	*See* Table Note 83	Notes Rejected. Consists of a five-digit decimal count of the number of reject notes.
g53	5	*See* Table Note 83	Notes Dispensed. Consists of a five-digit decimal count of the number of dispensed notes.
g54	5	*See* Table Note 83	Last Transaction Notes Dispensed. Consists of a five-digit decimal count of the number of notes dispensed during the last transaction.
g55	5	*See* Table Note 83 and Table Note 91	Notes Deposited. Consists of a five-digit decimal count of the number of deposited notes.
GS	1	*See* Table Note 75	Group Separator.
g58	1	*See* Table Note 81	ECB 6 Category 2 Notes data group ID 'N' Not supported by Advance NDC.
g59	3	*See* Table Note 81 and Table Note 83	NDC Cassette Type. Consists of one three-digit identifier of the cassette type. The identifier can be between 001 and 999 depending on the cash handler configuration.
g60	5	*See* Table Note 81 and Table Note 83	Total Number Category 2 Notes. Consists of a five-digit decimal count of the number of deposited notes identified as counterfeit under ECB 6.

Field	Number of Characters	Mandatory/Optional	Description
g61	3	*See* Table Note 81 and Table Note 83	Number of Reported Category 2 Note Types. Consists of a three-digit count of the number of deposited note types being reported as counterfeit under ECB 6. The count can be between 000 and 999.
g62	4	*See* Table Note 81 and Table Note 84	Category 2 Note Type Identifier. Consists of one four-digit identifier of the note type reported as counterfeit under ECB 6. The identifier can be between 0001 and FFFF.
g63	5	*See* Table Note 81 and Table Note 84	Category 2 Notes. Consists of a five-digit decimal count of the total number of notes of the note type in field g62 identified as counterfeit under ECB 6.
GS	1	*See* Table Note 75	Group Separator.
g64	1	*See* Table Note 81	ECB 6 category 3 notes group data id 'O' Not supported by Advance NDC.
g65	3	*See* Table Note 81 and Table Note 83	NDC Cassette Type. Consists of one three-digit identifier of the cassette type being reported on. The identifier can be between 001 and 999 depending on the cash handler configuration.
g66	5	*See* Table Note 81 and Table Note 83	Total Number Category 3 Notes. Consists of a five-digit decimal count of the number of deposited notes identified as category 3 under ECB 6.
g67	3	*See* Table Note 81 and Table Note 83	Number of Reported Category 3 Note Types. Consists of a three-digit count of the number of deposited note types being reported as category 3 under ECB 6. The count can be between 000 and 999.
g68	4	*See* Table Note 81 and Table Note 84	Category 3 Note Type Identifier. Consists of one four-digit identifier of the note type reported as category 3 under ECB 6. The identifier can be between 0001 and FFFF.
g69	5	*See* Table Note 81 and Table Note 84	Category 3 Notes. Consists of a five-digit decimal count of the total number of notes of the note type identified in field g62 identified as category 3 under ECB 6.
GS	1	*See* Table Note 75	Group Separator.
g78	1		Second Card Reader data group id 'T'
g79	5	*See* Table Note 77	Cards Captured

Table Note 75: Fields are arranged in groups. The groups included in the message depend on the presence of devices in the SST. When a group is present, all counts of that group are included and the group is terminated by a group separator. In future releases, new groups may be added and new counts added to the end of existing groups.

Table Note 76: Cards Captured is reported as zero when the contactless card reader is the primary card reader.

Table Note 77: Cards Captured is always reported as zero when there is a contactless card reader. From Advance NDC 4.04, a contactless card reader is always the secondary card reader.

Table Note 78: Fields g8 to g13 and g15 to g20 are repeated for each cassette type present in the dispenser. They will be repeated either four or seven times depending on the setting of Enhanced Configuration option 76.

Table Note 79: Fields g22 to g26 are repeated for each configured hopper type in the coin dispenser.

Table Note 80: These fields used only on devices that can recycle deposited items.

Table Note 81: These fields are included in Enhanced Cash Deposit mode.

Table Note 82: These fields are included when bit 3 of Enhanced Configuration option 45 is set and Enhanced Cash Deposit is not enabled. For details of option 45, see "Option 45 – BNA Settings" on page 7-15.

Table Note 83: Fields g36 to g38, g49 to g55 and g58 to g69 are repeated for each NDC cassette type.

Table Note 84: Fields g39 and g40 and g58 to g69 are repeated for each Note Type Identifier within each cassette. These fields are not present if there are no notes in the cassette.

Table Note 85: Field g40 includes all notes identified as category 2, category 3, or category 4 under ECB 6.

Table Note 86: Fields g41 to g43 are only included when a cheque processor is present.

Table Note 87: Fields g42 and g43 report the number of cheques stored in each bin.

Table Note 88: Fields g44 to g48 are only included in BNA Emulation modes.

Table Note 89: Fields g45 to g48 contain the counts for all note types.

Table Note 90: Fields g49 to g55 are included only when dual cash handlers are emulating a single cash handler as defined by

enhanced configuration option 76. For details, see "Option 76 – Cash Handlers" on page 7-19.

Table Note 91: Field g55 is used only if recycling is enabled. If recycling is not enabled, this field contains '00000'.

Table Note 92: Notes returned to the cardholder without being processed are unknown under CEN XFS.

Send Tally Information

Tally reporting is not supported. A default message is sent to the host in response to a Send Tally Group Terminal Command message (a command code of '5').

The data is always as shown in the following table:

Table 9-31
Send Tally Information Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier '3'.
g2	1	M	Group Number. Contains the group number of the requested tallies ('A' to 'N' or 'V').
g3	12	M	Date And Time Last Cleared. This field always contains the following default date and time: YY = Year ('00') MM = Month ('01') DD = Day ('01') HH = Hour ('00') MM = Minute ('00') SS = Second ('00')
g4	6	M	Tally Data. This field is always = 000000

Send Error Log Information

Note: Error log reporting is not supported. A default message is sent to the host in response to a Send Error Log Group message (a command code of '6')

The data is always as shown in the following table:

Table 9-32
Send Error Log Information Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier '4'.
g2	1	M	Group Number. The group number of the requested log group ('A', 'B' or 'C').
g3	2	M	New Entries. This field is always 00.
g4	12	M	Date Last Cleared. This field always contains the following default date and time: YY = Year ('00') MM = Month ('01') DD = Day ('01') HH = Hour ('00') MM = Minute ('00') SS = Second ('00')

Send Date/Time Information

This solicited status message is sent to the host in response to a Send Date And Time message (a command code of '8'). For details, see "Terminal Commands" on page 10-3.

Table 9-33
Send Date/Time Information Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier '5'.
g2	1	M	ToD Clock Status. This field has the following values: '0' - Time is actual. '1' - Time is default (clock not loaded with actual time). '2' - ToD malfunction.
g3	12	M	Terminal Date/Time. The actual date and time returned by the terminal clock in the following format: YY = Year ('00' - '99') MM = Month ('01' - '12') DD = Day ('01' - '31') HH = Hour ('00' - '23') MM = Minute ('00' - '59') SS = Second ('00' - '59') If 00<=YY<=89, the year is taken to be in the range 2000<=YY<=2089. If 90<=YY<=99, the year is taken to be in the range 1990<=YY<=1999. In the case of a ToD malfunction, these are zero. In the case of Default time, the value is initialised to the lowest value, and counting starts from this.

Send Configuration ID

This solicited status message is sent to the host in response to a Send Configuration ID terminal command message (a command code of '3'). For details, see "Terminal Commands" on page 10-3.

Table 9-34
Send Configuration ID Response

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Message Identifier. This message has identifier '6'.
g2	4	M	Configuration ID. Contains the last four-digit configuration ID number (0000-9999) sent to the SST from the host.

Solicited Device Fault Status

This section describes the information contained in the Status Information field when the Status Descriptor is '8' - Device Fault, For details, see "Device Fault Status Information Field" on page 9-79.

All solicited status device fault messages require the host to reply with a Transaction Reply command. The cash handler and depository devices are used only in response to a Transaction Reply (TR) command, and only give unsolicited statuses during Transaction Reply processing.

The first character in the Status Information field identifies the device by means of a DIG. Devices are identified by the same code in Solicited and Unsolicited messages. For details, see Appendix E, "Device Identifiers".

Device Fault Status Responses

The following table shows the solicited device fault status messages which may be returned for each Transaction Reply command.

Table 9-35
Device Fault Status in Response to Transaction Reply Commands

Transaction Reply Command	Device Faults
Deposit and Print	Depository
Dispense and Print	Cash Handler, Coin Dispenser
Print Immediate	None
Set Next State and Print	None
Night Safe Deposit and Print	Night Safe
Card Before Cash	Card Reader/Writer, Cash Handler, Coin Dispenser
Fast Cash	Cash Handler, Coin Dispenser
Card Before Parallel Dispense and Print	Card Reader/Writer, Cash Handler, Coin Dispenser
Print Statement and Wait	Statement Printer and Receipt in sideways mode
Print Statement and Set Next State	Statement Printer and Receipt in sideways mode
Refund	Bunch Note Acceptor

Transaction Reply Command	Device Faults
Encash	Bunch Note Acceptor
Process Cheque	Cheque Processing Module
Process Multiple Cheques	Cheque Processing Module

Device Fault Status Information Field

When the Status Descriptor is '8' - Device Fault, the information given in Table 9-36 is present in the Status Information field. In the "Number of Characters" column, a number in brackets indicates the maximum field length.

The data returned in the fields is variable in length as it is different for each device, but each device will always send the same number of characters. For details, see "Fitness Data" on page E-20.

Table 9-36
Device Fault Status Information Field

Field	Number of Characters	Mandatory/Optional	Description
g1	1	M	Device Identifier Graphic (DIG). The device identifier.
g2	Var (17)	O	Transaction Status. Contains information required to make a transaction completion decision.
FS	1	*See* Table Note 93	Field Separator
g3	Var (14)	O	Error Severity. Contains information required to decide whether to shut down or continue to use the SST. Each character is always coded in the same way: **Code** **Description** '0' No Error. Continue to use - no error has occurred. Diagnostic information follows. '1' Routine. Continue to use - a routine error has occurred and diagnostic information follows. '2' Warning. Continue to use, but it is recommended that the network operator be informed of the error or exception condition. Diagnostic information follows. '3' Suspend. This code indicates that the terminal will suspend transaction processing on completion of the current transaction (state 000 entered). This is sent if cardholder tampering is suspected. If no action is taken by the host, the terminal will attempt to go back in service in five minutes. Diagnostic information follows.

Field	Number of Characters	Mandatory/Optional	Description
			'4' Fatal. This code indicates that the device is out-of-service and will continue to report fatal error until operator intervention at the terminal. It is recommended that the terminal is put out-of-service or that transactions involving the faulty device are not allowed.
FS	1	*See* Table Note 93	Field Separator
g4	Var	O	Diagnostic Status. Used for logging errors. The field length may be omitted if there is no error condition to be reported. The field will always be present if preceded by an Error Severity field with a value of 1 or greater. The following vendor-specific rules are applied for all devices: **Characters 1 and 2** contain a main error status value (M-Status) in the range 0-99, transmitted as two characters which give the decimal representation of the M-Status value. M-Status is used mainly as an error log to assist machine servicing. It may also be used in a transaction log to supplement Transaction status or Device status information. **Note:** For a GBRU with Enhanced Configuration option 78 set to 000, see "GBRU to CDM M-Status Mapping" on page 9-81 for the M-Status reporting. **Characters 3 to n** (M-Data) contain detailed diagnostic information related to the device. Each byte is transmitted as two characters. These give the hexadecimal representation of the value of the byte. **Note:** The data returned for devices is hardware-dependent, except for the EJ printer, where the data is application-driven. **Note:** Where an EPP is present, the data returned in this field is of the format 00*mm*. 00 is always returned in characters 1 and 2, and *mm*, in characters 3 to *n*, contains the value from byte 0 of the T-data.
FS	1	*See* Table Note 93	Field Separator.
g5	Var (8)	O	Supplies Status. Contains information about the state of supplies (paper, currency, magnetic cards, envelopes, inkwells, documents) in the terminal. This field contains 1 character for each supplies container managed by the device. Each character is always coded in the same way: '0' No New State. The state of the container can be assumed to be unchanged. '1' Good State. The state of the container is known to be good, for example, not low, empty or overfilled. '2' Media Low.

Field	Number of Characters	Mandatory/Optional	Description
			'3' Media Out. '4' Overfill. The container has sensed a full condition and should be emptied. If this field is omitted, it can be assumed that there is 'no new state' on any container.

Table Note 93: Included if any of the subsequent fields are present.

As the field lengths may change with the hardware being used, the host should not attempt to analyse these fields by allocating a fixed length to each device. Instead field lengths should be determined by searching for the FS (field separator) characters.

GBRU to CDM M-Status Mapping

For a GBRU device used as a cash dispenser, you can choose to report the M-Status (field 'g4') as a CDM or as a GBRU. This is set using Enhanced Configuration option 78. For details, see "Option 78 – GBRU M-Status Reporting" on page 7-20.

To report the status using the CDM M-Status, the GBRU M-Status is mapped to an equivalent CDM M-Status.

Other Solicited Messages

Other solicited messages that can be sent from the terminal to the host are as follows:

- Encryptor Initialisation Data
- Upload EJ Data Message

Encryptor Initialisation Data

This message class/sub-class is used when initialising the encryptor module, and is used in a similar way to the terminal state message. However, it does not contain any of the fields associated with message authentication, and is therefore suitable for the initial exchange of data required to initialise the encryptor.

This solicited message is returned in response to an Extended Encryption Key Change message, described in "Extended Encryption Key Change" on page 10-37.

Table 9-37
Encryptor Initialisation Data Response

Field	Number of Characters	Mandatory/Optional	Description
a	Var	M	Header. Protocol-dependent.
b	1	M	Message Class. The message class is: '2' - Solicited message.
c	1	M	Message Sub-Class. The message sub-class is: '3' - Encryptor Initialisation Data.
FS	1	M	Field Separator
d	3 or 9	M	Logical Unit Number (LUNO). This number is defined in a field transmitted to the terminal in a Configuration Parameters Load message. The default is 000. If the data security feature is configured, an additional six characters are present. These contain the security terminal number.
FS	1	M	Field Separator
FS	1	M	Field Separator
e	1	M	Information Identifier. Identifies the type of information sent, as follows: '1' EPP serial number and signature '2' EPP public key and signature

Field	Number of Characters	Mandatory/Optional	Description	
			'3'	New Key Verification Value (KVV)
			'4'	Keys status
			'5'	Public Key loaded
			'6'	Key entry mode
			'7'	Certificate RSA encryption KVV
			'8'	SST certificate
			'9'	SST random number
			'A'	PKCS7 key loaded
			'B'	Encryptor capabilities and state
			'C'	Key deleted
			'D'	EPP attributes
			'E'	Variable-length EPP serial number and signature
			'F'	Reserved
			'G'	Reserved
			'H'	Host Certificate
			'I'	EPP Unbound
			'J'	Extended Capabilities
			'K'	Extended Key Status
			'L'	Authentication Token
FS	1	M	Field Separator	
f	Var	O	Encryptor Information, dependent on the Information Identifier in field 'e', as follows:	
	When Information Identifier = '1':			
	8		EPP Serial Number (SN-EPP)	
	320		EPP Serial Number Signature, created using the RSA NCR key, (SN-EPP) * NCR-SK, and base 94 encoded. For further details of EPP authentication and base 94 encoding, see "EPP Authentication Process" on page 11-21 and "Base 94 Encoding and Decoding" on page 11-30.	
	When Information Identifier = '2':			

Field	Number of Characters	Mandatory/Optional	Description
	320		EPP Public Key (PK-EPP), base 94 encoded. The exponent of the EPP Public Key is always 65537, and is therefore not sent to the host.
	320		EPP Public Key Signature, created using the RSA NCR key, (PK-EPP) * NCR-SK, and base 94 encoded. For further details of EPP authentication and base 94 encoding, see "EPP Authentication Process" on page 11-21 and "Base 94 Encoding and Decoding" on page 11-30.
	When Information Identifier = '3':		
	6 or 72		New KVV for key just loaded or reactivated
	When Information Identifier = '4':		
			Keys Status, containing KVVs as follows:
	6		• Master Key KVV
	6		• Communications Key KVV
	6		• MAC Key KVV
	6		• B Key KVV
			If a key has not been loaded, its KVV will be six zeroes. If the hardware does not allow a KVV to be generated, 6 spaces (0x20) will be reported
			Note: The host should accept a variable length Key Status field, in case new keys need to be added in the future.
			For details of the calculation of KVVs, see "Key Verification Values" on page 11-17.
	When Information Identifier = '5':		
			For Key Loaded, this field is absent.
	When Information Identifier = '6':		
			Key Entry Mode, a single character in the range '1' to '4' describing the key entry mode, as follows: '1' Single length without XOR '2' Single length with XOR '3' Double length with XOR '4' Double length, restricted.
	When Information Identifier = '7'		
	3		Binary data length

Field	Number of Characters	Mandatory/Optional	Description
	Var		RSA KVV base 94 encoded
	When Information Identifier = '8'		
	3		Binary data length
	Var		SST certificate base 94 encoded The certificate can either be in the CEN 3.03 or TR34 format
	When Information Identifier = '9'		
	Var		SST random number, ASCII hexadecimal encoded. This message is not required in the Basic Signature Remote Key Loading Scheme and if received, will be rejected with a specific reject code of E02.
	When Information Identifier = 'A'		
	6		KVV of new DES key
	3		Binary data length
	Var		Key Load Acknowledgement Packet, base 94 encoded *See* Table Note 94
	When Information Identifier = 'B'		
	2		Remote Key Protocol. The remote key scheme capabilities reported as a bitmap. This is a two-digit decimal value defined as follows: Bit 0 If set, the EPP supports the Signature Scheme Bit 1 If set, the EPP supports the Certificate Scheme Bit 2 If set, the EPP supports the Enhanced Signature Scheme Bits 3-7 Reserved and must be 0 Examples are as follows: '00' None '01' Signature '02' Certificate '03' Signature and certificate '04' Enhanced signature '06' Enhanced signature and certificate As the Remote Key Protocol is reported as a bitmap, a number of different protocols can be supported simultaneously as shown above The significant bits are 0, 1, 2 and 4

Field	Number of Characters	Mandatory/Optional	Description
	2		Certificate state '00' Not ready or not supported '01' Certificate primary '02' Certificate secondary
	1		EPP Variable Length Serial Number Capability *See* Table Note 95 '0' Variable length EPP serial numbers not supported *See* Table Note 96 '1' Variable length EPP serial numbers supported *See* Table Note 97
	When Information Identifier = 'C'		
			For Key Deleted, this field is absent
	When Information Identifier = 'D'		
			EPP attributes are defined as follows:
	1		'0' EPP Vendor Company Name Identifier
	Var		Alphanumeric characters that define the EPP vendor company name as registered with PCI
	1		Group Separator
	1		'1' EPP Model Identifier Data Identifier
	Var		Alphanumeric characters that define the EPP model identifier as registered with PCI
	1		Group Separator
	1		'2' EPP Hardware Identifier Data Identifier
	Var		Alphanumeric characters that define the EPP hardware identifier as registered with PCI
	1		Group Separator
	1		'3' EPP Firmware Identifier(s) Data Identifier
	Var		Alphanumeric characters that define the EPP firmware module identifiers as registered with PCI.
	1		Group Separator
	1		'4' EPP Application Identifier(s) Data identifier
	Var		Alphanumeric characters that define the application module identifiers as registered with PCI
	When Information Identifier = 'E'		

Field	Number of Characters	Mandatory/Optional	Description
			The variable-length EPP serial number and signature are returned as follows:
	Var		EPP serial number (SN-EPP)
	1		Group Separator
	Var		SN-EPP signature signed using SK-Vendor (SN-EPP * SK-Vendor base 94 encoded)
	When Information Identifier = 'H'		
	1		Certificate loaded flag 0 Certificate is not loaded and certificate data will not follow 1 Certificate is loaded and certificate data will follow
	Var		Contains the host certificate, base 94 encoded *See* Table Note 98
	When Information Identifier = 'I'		
			For EPP Unbound, this field is absent
	When Information Identifier = 'J'		
			The Extended Capabilities are returned as follows
	1		Supports variable length serial numbers
	1		Supports Standard Signature RKL
	1		Supports Enhanced Signature RKL
	1		Supports CEN 3.03 format (Diebold) certificate
	1		Supports TR34 certificate
	1		Supports TR31 symmetric key exchange (Key block A)
	1		Supports TR31 symmetric key exchange (Key block B)
	1		Supports TR31 symmetric key exchange (Key block C)
	Var		New features will be added and must be ignored if the Terminal handler does not support or understand them 0 Not supported 1 Supported
	When Information Identifier = 'K'		
			Extended key status
			Sub-Field

Field	Number of Characters	Mandatory/Optional	Description	
	3	M	f1	Key ID
	1	M	f2	Key loaded and active 0 - Key not loaded 1 - Key loaded and active
	Var	O	f3	Status data
	1	O	f4	Group separator
			Fields f1 to f4 are repeated for every key. There is no group separator after the last key is reported. *See* Table Note 99	
	When Information Identifier = 'L'			
	Var		Contains the Authentication Token, ASCII hexadecimal encoded. *See* Table Note 100	

Table Note 94 The key load acknowledgement packet is summarised as follows:

```
(Sign(SKSST)[RHost||RSST||IHost])
```

This is interpreted as follows:

`SKSST`	= SST's verification secret key
`RHost`	= Host's random number
`RSST`	= SST's random number
`IHost`	= Host identifier

Table Note 95 A number of messages were originally defined with an 8-byte fixed-length field for the EPP serial number. However, 8 bytes are not sufficient for EPPs from some vendors. This field reports whether variable-length serial numbers are supported. When variable-length EPP serial numbers are supported, NCR recommends that the host uses variable-length variants of messages.

Table Note 96: If variable length EPP serial numbers are not supported, the following conditions apply:

- Only EPPs with 8-byte serial numbers can be supported
- The EPP serial number can only be requested through the Extended Encryption Key Change (EEKC) command with a modifier of 'F' (the response is Data Identifier '1').

Table Note 97 If variable length EPP serial numbers are supported the following apply:

- EPPs with any length of serial number can be supported
- The EPP serial number can be requested through the EEKC command with a modifier of 'F' (the response is Data Identifier '1'). This works only on EPPs with 8-byte serial numbers.
- The EPP serial number can be requested through the EEKC command with a modifier of 'V' (the response is Data Identifier 'E'). This works on EPPs with serial numbers of any length.

Table Note 98 The data consists of the host certificate encoded using base 94. The certificate can either be in the CEN 3.03 or TR34 format.

Table Note 99 The encryption keys managed by NDC have the following identifiers:

Table 9-38
Encryption Keys

ID	Encryption Key
001	A Key/ Master Key/TR31 Key Block Protection Key
002	B Key
003	Communication Key
004	MAC Key
005	Host Public Key
006	Host Root Public Key
007	Host Public Key Certificate Loaded (TR34 or CEN 3.03 compatible certificate)
008	Certificate Module State

The above list of keys will be extended and reported in the Extended Encryption Key Status.

The format of the Key Status Data field depends on the type of key. The data can report multiple types of key status data for each key and each block of data associated with a single key is separated using a Record Separator character. In future releases, more data may be added to any key type. New data will be added by preceeding the data with a Record Separator. Host should be written to ignore data it does not expect.

For Key IDs 001–004 (symmetric keys), the Key Status Data is formatted as follows:

Table 9-39
Key Status Data (Key IDs 001 - 004)

Number of Bytes	Mandatory/ Optional	Symmetric Key Data
6	O	KVV - Present only if Key is loaded
1	O	Record Separator - Present only if any data follows
Var	O	Key Block Header - Present only if key is loaded through TR31

For Key IDs 005–007, no additional Key Status Data is returned. If the TR34 Host Certificate is loaded, it can be retrieved using the EEKC command with modifier 'g'.

For the Key ID 008 (Certificate Module State), the Key Status Data is formatted as follows:

Table 9-40
Key Status Data for the Key ID 008

Number of Bytes	Mandatory/ Optional	Symmetric Key Data
2	M	Certificate Module Status '00' - Not ready/Not supported '01' - Primary Certificates will be accepted '02' - Secondary Certificates will be accepted

Table Note 100 The data consists of the authentication token that is used by the host when generating the authentication data. In some cases, TR34 Forced Unbind, this token needs to be generated by the EPP but is not used to generate the Authentication Block. In these cases the token will still be generated and sent to the host but should not be included when generating the authentication data. The TR34 standard specifies what must be used to generate the authentication data. The content of the data returned to the host is controlled by the TR34 standard, the data transmitted will be in ASCII hexadecimal format.

Upload EJ Data Message

The SST sends this solicited message to the host in response to an EJ Command, taking the data from the file *ejdata.log* in the *c:\program files\ncr aptra\advance ndc\data* directory on the SST. A pointer is maintained in persistent memory to indicate the location of the next block of data to be uploaded. Any binary zeros in the electronic journal data are replaced with an ASCII question mark (?) character before the upload data is sent.

The size of the electronic journal data blocks that are sent in each upload message can be set in the EJ Options and Timers command.

For details of EJ Options and Timers and acknowledgement messages, see "EJ Commands" on page 10-96.

The SST will continue to upload EJ data blocks as long as an acknowledgement message is received from the host for each message sent. If an acknowledgement is not received within the time specified by timer 60, the SST will re-send the current block up to the maximum number of retries set in the EJ Options and Timers message. When all EJ data is uploaded, the data is deleted from the *ejdata.log* file.

The SST will only send an Upload EJ Data message, or process an EJ command, when in Out-of-Service mode or In-Service mode when there is no transaction in progress. Upload EJ Data messages will not be sent when the SST is in Supervisor mode. Any EJ data accumulated in the EJ file *ejdata.log* while the SST is in Supervisor mode will be sent at the next opportunity.

Note: The Supervisor function INIT EJRNL should not be performed during EJ upload. For more information, refer to Chapter 3, "Replenish Menu" of the *APTRA Advance NDC, Supervisor's Guide, .*

Table 9-41
Format of the Upload EJ Data Message

Field	Number of Characters	Mandatory/Optional	Description
a	Var	M	Header. Protocol-dependent.
b	1	M	Message Class. The message class is: '6' - Electronic Journal.
c	1	M	Message Sub-Class. The message sub-class is: '1' - Upload Data.
FS	1	M	Field Separator
FS	1	M	Field Separator
FS	1	M	Field Separator
FS	1	M	Field Separator
d	6	M	Machine Number. Range 000000 to 999999.
e	6	M	Date. Range 000000 to 999999 in the format YYMMDD. Date the block was sent, determined by the SST's internal clock.
f	6	M	Time. Range 000000 to 999999 in the format HHMMSS. Time the block was sent, determined by the SST's internal clock.

Field	Number of Characters	Mandatory/Optional	Description
g	6	M	Last Char Previous Block. Range 000000 to 999999. *See* Table Note 101.
h	6	M	Last Char This Block. Range 000000 to 999999. *See* Table Note 101. The SST compares the Last Character Received field in the acknowledgement message sent from the host with the Last Char This Block field of the last Upload EJ Data message it sent to the Host. If these two values are not the same, the acknowledgement message is ignored. For more details, see the "EJ Commands" section in Chapter 10, "Central to Terminal Messages". The Last Character Previous Block field can be used by the host to check on the received message.
i	3	M	Block Length. Range 001-350. Default is 200. Set using the EJ Options and Timers command message; only the last data block sent to the host should be less than this block length.
j	Var	M	Response Data. Range as specified by Field 'i' Range 001-350. Upload data consists of ASCII text with a carriage return (CR) at the end of each line. Lines are a maximum of 40 characters. *See* Table Note 102.

Table Note 101: The Last Char Previous Block and Last Char This Block values are based on a modulus 1,000,000 character count which starts at zero following a cold start of the SST. The count is incremented for each character written to the electronic journal. The count is not reset for a warm start, that is, a power fail or reset during which the persistent memory is preserved.

Table Note 102: If the last block length at the end of file is less than specified in Field 'i', that length will be returned.

Unsolicited Status Messages

Unsolicited status messages are used to report any change of condition at the SST, such as the following:

- Recognition of an external event
- Device errors
- Supplies problems.

Conditions for Sending Unsolicited Messages

Unsolicited status messages do not require a reply from the host. They are sent under the following conditions:

- Power failure: a message is sent on power-up
- An external event is detected. This includes bin inserted/removed, alarm activated, Supervisor keys and switches. The reporting of supervisor switch changes is delayed if the SST is in use
- A device fault is detected as a result of processing a Transaction Reply command, but the fault condition does not require host recovery action. This means that Transaction Reply processing can continue as if no fault had occurred
- A device fault is detected that is not the result of processing a Transaction Reply command. For example, printer/MCRW errors
- If an alarm is activated during a power failure or communications loss, a message is sent when power or communications are restored
- If Supervisor/supply switch values are changed while off-line, the last change of both switches is reported when communications are restored
- If the message mode option is set to enable the ***Cancel*** key while a Statement and Wait function is being carried out and the consumer presses the ***Cancel*** key. For details, refer to the *APTRA Advance NDC, Supervisor's Guide.*
- Errors in the Close state.

Note: Exits can also send unsolicited status messages. These are of the same format as standard unsolicited status messages, but the content of the Status Information field depends on the Exit. For more information, refer to *APTRA Advance NDC, Extending the Product.*

Table 9-42
Unsolicited Status: Message Format

Field	Number of Characters	Mandatory/Optional	Description
a	Var	M	Header. Protocol-dependent.
b	1	M	Message Class. The message class is: '1' - Unsolicited message.
c	1	M	Message Sub-Class. The message sub-class is: '2' - Status message.
FS	1	M	Field Separator
d	3 or 9	*See* Table Note 103	Logical Unit Number (LUNO). This number is defined in a field transmitted to the SST in a Configuration Parameters Load message. The default is 000. If the data security feature is configured, an additional six characters are present. These contain the security terminal number.
FS	1	M	Field Separator
FS	1	M	Field Separator
e	Var	M	Status Information. The content of this field varies according to the message mode selected at installation time. *See* Table 9-43.
f	Var	M	Trailer. Protocol-dependent.

Table Note 103: In power-up status messages, this field contains either the LUNO that has been previously downloaded, or '000'.

Unsolicited Status Information Field

One of the following conditions must be satisfied before an unsolicited message is sent:

- Device status is non-zero
- Error severity is 2 (warning) or greater
- Supplies status is 2, 3, or 4.

A routine error does not generate an unsolicited status message.

The following table shows the structure of the Status Information field in unsolicited status messages.

Table 9-43
Unsolicited Status: Status Information Field

Field	Number of Characters	Mandatory/Optional	Description
e1	1	M	Device Identifier Graphic (DIG). The device identifier
e2	Var (154 max)	O	Device Status. Used for recording any transaction exception of change of state of the device. For devices which report both Solicited and Unsolicited Status messages, a common set of Transaction/ Device Status codes are defined for use in either type of message. When processing a Transaction Reply command, any unsolicited Transaction exceptions are reported prior to the solicited 'device fault' or 'ready' status.
FS	1	*See* Table Note 104	Field Separator
e3	Var (14)	O	Error Severity. As 'g3' in Solicited messages.
FS	1	*See* Table Note 104	Field Separator
e4	Var	O	Diagnostic Status. As 'g4' in Solicited messages.
FS	1	*See* Table Note 104	Field Separator
e5	Var (8)	O	Supplies Status. As 'g5' in Solicited messages.
e6	Var	O	Additional data specific to device message. Can be used to report the card number of a captured card.

Table Note 104: This field separator is included if any of the optional fields that follow it are included.

Device Status Information

Solicited or unsolicited status information can be reported for devices as described in the following sections.

For information on the journaling that occurs, refer to the *APTRA Advance NDC, Supervisor's Guide*.

Time-Of-Day Clock (Unsolicited)

This message indicates that the Time-of-Day Clock is not available. The host can either keep the SST out-of-service or return it to service.

Table 9-44
Time-Of-Day Clock Status

Field	Number of Characters	Content
e1	1	Device Identifier Graphic 'A'.
e2	1	Device Status. '1' - Clock reset but running. '2' - Clock has stopped.
e3	1	Error Severity. '2' - Warning - clock reset. '4' - Fatal - clock malfunction.
e4		Not present.
e5		Not present.

Power Failure (Unsolicited)

This message is sent during power-up to tell the host that a power interruption has occurred. If the SST is configured to send a message whenever communications is restored, this message is sent when the connection is re-established.

The host can use the configuration ID contained in this message to check whether a download is needed before sending a Start Up Terminal Command message to put the SST into service.

Table 9-45
Power Failure Status

Field	No. of Characters	Content
e1	1	Device Identifier Graphic 'B'.
e2	4	Device Status. This contains the configuration identification number (0000-9999) of the customisation data stored on disk. The host can use this information to check if a download is needed before putting the SST in-service. A value of '0000' indicates that a download must be performed.
e3		Not present.
e4		Not present.
e5		Not present.

Card Reader/Writer (Solicited/Unsolicited)

This message gives details of any exception condition that is detected during card processing.

A card reader can be either a contact or contactless card reader. When both the card readers are available on an SST, the contact card reader is always the primary card reader. When a contactless card reader alone is present on an SST, it is the primary card reader.

If the primary card reader is a contactless card reader, the following information is reported to the host:

- '1' for Supplies status
- '0' for Transaction/Device status

Solicited device faults are reported only on Card Before Cash transactions.

If failure occurs in the physical connection, an unsolicited status message is reported indicating that the card reader has a fatal severity and that the device is inoperative. Advance NDC does not put the SST into Out of Service mode when the card reader enters a fatal state. It is the responsibility of the host and the host must be configured to do this if required.

Table 9-46
Card Reader/Writer Status

Field	Number of Characters	Content
g1/ e1	1	Device Identifier Graphic 'D'. The primary card reader.
g2/ e2	1	Transaction/Device Status. Gives details of any transaction-related exception condition detected while processing a card at the SST. Possible values are:

Sol/ Unsol	Code	Description
U	'0'	No transaction exception condition occurred but consult other fields for error severity, diagnostic status or supplies status changes.
S/U	'1'	The cardholder did not take his card within the allowed time and it was captured or jammed. *See* Table Note 105 and Table Note 106
S/U	'2'	The mechanism failed to eject the card, which was either captured or jammed. *See* Table Note 105 and Table Note 106
S/U	'3'	The mechanism failed to update the requested tracks on the card.
S/U	'4'	Invalid track data received from the host.
U	'7'	Error in track data.

		If using EMV/CAM2, use the EMV/CAM2-generated hardware error to identify the device status. EMV/CAM2 can also generate messages to identify whether the error is due to hardware or data problems using a DIG of 'c'. For more information about EMV/CAM2 messages, refer to the *EMV Integrated Circuit Card (icc) Reference Manual*.
g3/ e3	Var (1 or 2)	Error Severity. This is a one or two character field coded in the standard way to be used to make a shut-down decision.
g4/ e4	Var	Diagnostic Status (M-status plus M-data). This contains information to be used for logging device errors. The M-status describes the main error found. *See* Table Note 143
g5/ e5	1	Supplies Status. This is a single character field indicating the state of the Card Capture bin.

Code	Description
'0'	No new state, No cassette accessed
'1'	No overfill condition (capture bin)
'4'	Overfill condition (capture bin)

Table Note 105: If a card jams during a capture operation, multiple unsolicited messages are sent. The final message will have a device status of '1' although the preceding messages may have a device status of '0'.

Table Note 106: If Enhanced Configuration option 41 is set to include data read from a card when retracted, all the magnetic track details are included in the status message. If this data is to be included, the fields described in Table 9-47, "Additional Track Data on Card Retract" are added to the message.

Table 9-47
Additional Track Data on Card Retract

Field	Number of Characters	Content
FS	1	Field separator
e600	Var (78)	Track 1 data
GS	1	Group separator
e601	Var (39)	Track 2 data
GS	1	Group separator
e602	Var (106)	Track 3 data

Cash Handler (Solicited/Unsolicited)

This message gives details of a dispense operation in response to a Transaction Reply command message.

The format depends on the setting of Enhanced Configuration option 76, as described in Table 9-48 below. When Enhanced Configuration option 76 is set to 001, the counts and status fields report cassette types in numerical order.

For details of the status and supplies reported when cassettes are replenished during deposits, see "Cassette Re-enabled During Deposit Transactions" on page 9-103. If Option Digit 4A is set, a solicited status message is returned when notes are successfully retracted. For details of option digits, refer to the *APTRA Advance NDC, Supervisor's Guide*.

Table 9-48
Cash Handler Status

Field	Number of Characters	Content
g1/e1	1	Device Identifier Graphic 'E'.

<table>
<tr><th>Field</th><th>Number of Characters</th><th>Content</th></tr>
<tr><td>g2/e2</td><td>Var (23)</td><td>Transaction/Device Status (T-code plus T-data). Gives details of a dispense operation in response to a Transaction Reply Command message. Character 1 (T-code) can be:
<table>
<tr><th>Sol/Unsol</th><th>Code</th><th>Description</th></tr>
<tr><td>U</td><td>‘0’</td><td>Successful operation and no cassette accessed, but an exception has occurred as detailed in subsequent fields.</td></tr>
<tr><td>S</td><td>‘1’</td><td>Short dispense.
For a spray dispenser, this can also indicate that an extra note has been dispensed.</td></tr>
<tr><td>S</td><td>‘2’</td><td>No notes dispensed.</td></tr>
<tr><td>S</td><td>‘3’</td><td>Notes dispensed unknown. The cardholder may have had access to any presented notes, so it should be assumed some may have been dispensed. Intervention may be required to reconcile the cash amount totals. The following counts contain requested dispense values.</td></tr>
<tr><td>S</td><td>‘4’</td><td>No notes dispensed or card not ejected. This status is returned on a card before cash transaction if the stack operation fails and the notes are purged prior to card eject.</td></tr>
<tr><td>S/U</td><td>‘5’</td><td>Some notes have been retracted when the notes were not taken following a Present time-out. The number of notes retracted is unknown.</td></tr>
</table>
See Table Note 113

When Enhanced configuration option 76 is set to 000, the counts are reported as follows:

Characters 2-9 (T-data) contain notes dispensed counts. Each pair of characters represents a two-digit decimal value in the range 00-99 for a particular cassette type.
<table>
<tr><th>Characters</th><th>Cassette Types</th></tr>
<tr><td>2-3</td><td>1</td></tr>
<tr><td>4-5</td><td>2</td></tr>
<tr><td>6-7</td><td>3</td></tr>
<tr><td>8-9</td><td>4</td></tr>
</table>
The following optional characters 10-17 are only valid for a spray cash dispenser, and contain a count of notes dispensed to the cardholder plus notes in an unknown location. Each pair of characters represents a two-digit decimal value in the range 00-99 for a particular cassette type.
The default message format does not include these characters. The extra fields are enabled in Option Digit 4C. For details of option digits, refer to the APTRA Advance NDC, Supervisor’s Guide.
<table>
<tr><th>Characters</th><th>Cassette Types</th></tr>
</table></td></tr>
</table>

Field	Number of Characters	Content
		10-11 1 12-13 2 14-15 3 16-17 4
		When Enhanced configuration option 76 is set to 001, the counts are reported as follows: Characters 2-15 (T-data) contain notes dispensed counts. Each pair of characters represents a two-digit decimal value in the range 00-99 for a particular cassette type. **Characters** **Cassette Types** 2-3 1 4-5 2 6-7 3 8-9 4 10-11 5 12-13 6 14-15 7 The following optional characters 16-31 are only valid for a spray cash dispenser, and contain a count of notes dispensed to the cardholder plus notes in an unknown location. Each pair of characters represents a two-digit decimal value in the range 00-99 for a particular cassette type. The default message format does not include these characters. The extra fields are enabled in Option Digit 4C. For details of option digits, refer to the *APTRA Advance NDC, Supervisor's Guide*. **Characters** **Cassette Types** 16-17 1 18-19 2 20-23 3 24-25 4 26-27 5 28-29 6 30-31 7
g3/e3	5 or 8	Error Severity. Used to make a shut-down decision. Character '0' Severity information related to complete device Character '1' Severity related to cassette type 1 Character '2' Severity related to cassette type 2 Character '3' Severity related to cassette type 3 Character '4' Severity related to cassette type 4 If enhanced configuration option 76 is set to 001, the error severity is reported for the further cassettes as follows: Character '5' Severity related to cassette type 5

Field	Number of Characters	Content
		Character '6' Severity related to cassette type 6 Character '7' Severity related to cassette type 7 If all cassettes of one type are unusable for any reason, for example, empty, not present, or faulty, then the severity code for that cassette type is marked as fatal. If dual cash handlers are used, this severity code can be changed to suspend using a registry key, as described in the *APTRA Advance NDC, Developer's Guide*. The suspend severity is reported when neither cash handler has the required note mix. Reporting a fatal severity means that an available note type is never requested; the suspend severity allows transactions to continue requesting both note types.
g4/e4	Var	Diagnostic Status (M-status plus M-data). The M-status describes the main error found and occupies two characters.
g5/e5	5	Supplies Status. Indicates the state of the currency cassettes and reject bin. *See* Table Note 108 Character '0' state of reject bin Character '1' state of cassette type 1 Character '2' state of cassette type 2 Character '3' state of cassette type 3 Character '4' state of cassette type 4 If Enhanced Configuration option 76 is set to 001, the supplies status is reported for the further cassettes as follows: Character '5' state of cassette type 5 Character '6' state of cassette type 6 Character '7' state of cassette type 7 Codes for characters 1 to 7 are: **Code** **Description** '0' No new state (cassette not accessed or state unknown because of a fatal hardware malfunction). *See* Table Note 109 '1' Sufficient notes. '2' Notes low. '3' Out of notes. Codes for character 0 are:

Field	Number of Characters	Content	
		Code	**Description**
		'0'	No new state (cassette not accessed or state unknown because of fatal hardware malfunction). *See* Table Note 109
		'1'	No overfill condition.
		'4'	Overfill condition.
		Note: If an attempt is made to dispense notes from a cassette type that is not installed, a supplies status code of '3' is returned.	

Table Note 107: For a spray dispenser the notes dispensed counts are significant. For example, the cardholder may have received some, but not all, requested notes due to an error condition. In this case, these are counts of the notes delivered to the cardholder. However, if the notes stick in the transport, these counters display the number of notes requested and not the number delivered.

Table Note 108: When notes are retracted, the supplies status of all cassettes is included in the unsolicited message and journaled.

Table Note 109: By default, the supply status reported for repeated transactions, is that of the cassette referenced by the transaction. If the status remains the same as the previous transaction, it does not change to 0 ("no new state"). The purge bin never reports 0. Reporting of the actual status of all cassettes can be configured through the registry. For details of the registry setting, refer to the *APTRA Advance NDC, Developer's Guide*.

Cassette Re-enabled During Deposit Transactions

A recycling cassette previously reported as out of notes can be replenished during a deposit transaction. When this occurs, the cassette is re-enabled for dispensing and the following information is reported in an unsolicited status message:

- The Transaction/Device Status (field 'g2') reports a successful operation ('0') and both the dispensed and presented counts report zero
- The Error Severity (field 'g3') reports the current cash handler severity values
- The Diagnostic Status (field 'g4') reports no error ('00')
- The Supplies Status (field 'g5') reports the following:
  - Updated supply values for any supply status that has changed

— No change (‘0’) for any supply status that has not changed.

Depository (Solicited/Unsolicited)

This message gives details of a deposit operation in response to a Transaction Reply Command message.

Table 9-49
Depository Status

Field	Number of Characters	Content
g1/e1	1	Device Identifier Graphic ‘F’.
g2/e2	1	Transaction/Device Status. Gives details of a deposit operation in response to a Transaction Reply Command message. The values are:

Sol/ Unsol	Code	Description
U	‘0’	Successful operation, but an exception has occurred as detailed in subsequent fields.
S	‘1’	Time-out on cardholder deposit.
S	‘2’	Failure to enable mechanism for a deposit.
S	‘3’	Envelope/document jam or envelope/document deposit failed. The cardholder has access. This status is also returned if there is any doubt about cardholder access.
S	‘4’	Envelope/document jam or envelope/document deposit failed. The cardholder does not have access.

g3/e3	1	Error Severity. Standard code.
g4/e4	Var	Diagnostic Status (M-status plus M-data). The M-status describes the main error found.
g5/e5		Supplies Status. Indicates the state of the deposit bin. This field is not sent with the message when a deposit time-out occurs. States reported are:

Code	Description
‘0’	No envelope deposited
‘1’	No overfill condition
‘4’	Overfill detected

Receipt Printer (Solicited/Unsolicited)

This message indicates whether or not a print operation has been successfully completed. A solicited status message may be sent in response to the following Transaction Reply commands if sideways printing has been requested:

- Print Statement and Wait
- Print Statement and Set Next State.

Table 9-50
Receipt Printer Status

Field	Number of Characters	Content		
e1	1	Device Identifier Graphic 'G'.		
e2	1	Transaction/Device Status. Indicates whether or not the print was successfully completed.		
		Sol/ Unsol	**Code**	**Description**
		U	'0'	Successful print
		S/U	'1'	Print operation not successfully completed
		U	'2'	Device not configured
		U	'4'	Cancel key pressed during sideways receipt print
		U	'5'	Receipt retracted
e3	Var (2)	Error Severity. Standard code used to make a shut-down decision. Holds the severity information about the receipt printer and capture bin.		
		Byte/char 1		Receipt Printer
		Byte/char 2		Capture Bin By default, not reported; can be included through the registry For details, refer to Chapter 5, "Configuring Advance NDC and Associated Components" of the *APTRA Advance NDC Developer's Guide*
e4	Var	Diagnostic Status (M-status plus M-data). The M-status describes the main error found.		
e5	5	Supplies Status. Indicates the status of the printer paper, ribbon, print-head, knife and capture bin. The capture bin severity and supplies will be reported as '0', if the printer does not have a capture bin.		
		Char	**Code**	**Description**
		0	'1'	Sufficient paper
			'2'	Paper low
			'3'	Paper exhausted
		1	'1'	Ribbon OK
			'2'	Ribbon replacement recommended
			'3'	Ribbon replacement mandatory
		2	'1'	Print-head OK
			'2'	Print-head replacement recommended
			'3'	Print-head replacement mandatory

Field	Number of Characters	Content		
		3	'1'	Knife OK
			'2'	Knife replacement recommended
		4	1	Capture bin OK
			4	Capture bin overfill
		When a 'paper exhausted' condition is detected and the capture bin status is reported, the status message is: Transaction Status = 0 Error Severity = 40 Supplies Status = 31111 (Ribbon, print-head, knife and capture bin are OK).		

Journal Printer (Unsolicited)

This message indicates whether or not a print operation has been completed successfully. Continuous messaging of fatal journal device status is set and cannot be changed.

Note: Although no knife is present on the 40-column journal printer, a status of '1' (knife OK) is always returned in any unsolicited status message, as a common format is used across all the 40-column printers.

Table 9-51
Journal Printer Status

Field	Number of Characters	Content		
e1	1	Device Identifier Graphic 'H'.		
e2	1 or 25	Transaction/Device Status. Indicates whether or not the print was successfully completed. *See* Table Note 110, Table Note 111, and Table Note 112.		
		Sol/ Unsol	**Code**	**Description**
		U	'0'	Successful print
		U	'1'	Print operation not successfully completed
		U	'2'	Device not configured
		U	'6'	Journal printer backup activated
		U	'7'	Journal printer backup and reprint terminated
		U	'8'	Journal printer backup reprint started

Field	Number of Characters	Content		
		U	'9'	Journal printer backup halted
		U	':'	Journal printer backup log security error
		U	';'	Journal printer backup reprint halted
		U	'<'	Journal printer backup tamper state entered
e3	1	Error Severity. Standard code used to make a shut-down decision.		
e4	Var	Diagnostic Status (M-status plus M-data). The M-status describes the main error found.		
e5	4	Supplies Status. Indicates the status of the printer paper, ribbon and print-head.		
		Char	**Code**	**Description**
		0	'1'	Sufficient paper
			'2'	Paper low
			'3'	Paper exhausted
		1	'1'	Ribbon OK
			'2'	Ribbon replacement recommended
			'3'	Ribbon replacement mandatory
		2	'1'	Print-head OK
			'2'	Print-head replacement recommended
			'3'	Print-head replacement mandatory
		3	'1'	Knife OK
		When a 'paper exhausted' condition is detected, the status message is: Transaction Status = 0 Error Severity = 4 Supplies Status = 3111 (Ribbon and print-head are OK; knife is always OK).		

Table Note 110: If the transaction code is ':', Journal Printer backup is operational, and the value of Enhanced Configuration Parameter option 22 is '2', the following extra data is sent:

An ASCII digit string with a format of `*XXX*dd/mm/yy*hh:mm*YYYY`, as follows:

`XXX`	the last printed Security Trace Number
`dd/mm/yy hh:mm`	the record date and time

YYYY	the record number relative to the last printed Security Trace Number

Table Note 111: If required, supervisor message mode option 12 can be used to report a journal out status as low. For more information, refer to the *APTRA Advance NDC, Supervisor's Guide*.

Table Note 112: When no journal printer is connected to the SST and the EJ has not been activated, no unsolicited message is sent to the host to indicate that the journal is not configured.

Electronic Journal Printer (Unsolicited)

This message indicates whether or not a print operation has been completed successfully.

Note: If cutover automatic initialisation is in use, this message should not be returned when the EJ file reaches 90% or 100% full. As cutover performs an initialisation operation when the EJ file reaches 90% full, the 100% full message is returned only if the cutover operation fails. For information on enabling cutover, refer to the *APTRA Advance NDC, Supervisor's Guide*.

Table 9-52
Electronic Journal Printer Status

Field	Number of Characters	Content		
e1	1	Device Identifier Graphic 'H'.		
e2	1	Transaction/Device Status. Indicates whether or not the print was completed successfully.		
		Sol/ Unsol	**Code**	**Description**
		U	'0'	Successful print
		U	'1'	Print operation not completed successfully
		U	'2'	Device not configured. By default this code is suppressed. For more information, refer to the *APTRA Advance NDC, Developer's Guide*.
	See Table Note 113	U	'='	EJ in dual mode print operation successful
		U	'>'	EJ in dual mode print operation not successful
e3	1	Error Severity. Standard code used to make a shut-down decision.		
e4	Var	Diagnostic Status (M-status plus M-data). This data is generated by Advance NDC. The M-status describes the main error found, as follows:		

Field	Number of Characters	Content		
			0	EJ status OK
			1	EJ fatal
			5	EJ log file full
			6	EJ not configured
			7	EJ log file not found
			50	EJ log file open failure
			51	EJ log file close failure
			52	EJ flex disk not found
			53	EJ flex disk drive head jam
			54	EJ flex disk protected
			55	EJ flex disk full.
e5	1	Supplies Status. Indicates the status of the electronic journal, as follows:		
		Char	**Code**	**Description**
		0	'1'	EJ log space OK
			'2'	EJ log space low
			'3'	EJ log full
		1	'1'	Value always '1'
		2	'1'	Value always '1'
		3	'1'	Value always '1'

Field	Number of Characters	Content
		When an 'electronic journal log space low' condition is detected, the status message is: Transaction Status = 0 Error Severity = 2 Supplies Status = 2111

Table Note 113: If option 35 in the Enhanced Configuration Parameters load (see page 10-17) is set to 001 ('report EJ in dual mode' unsolicited errors) or 002 ('report EJ and hard copy backup in dual mode' unsolicited errors) and both the journal printer and the EJ are in error, two unsolicited errors will be reported: one for the physical device and one for the EJ. If the option is set to the default of 000, only the physical device will be reported. The following table lists the message sequences returned for dual mode for each type.

Table 9-53
Unsolicited Message Sequences for Option 35 (EJ Dual Mode)

Option 35 Value	Type	Message Sequence		Comment
000	Physical journal	H0	Print operation succeeded	Paper supplies are low or out
		H1	Print operation failed	Sent when the print operation is unsuccessful **Note:** No messages are sent from the EJ or hard copy backup
001	Physical journal	H0	Print operation succeeded	Paper supplies are low or out
		H1	Print operation failed	Sent when the print operation is unsuccessful
	EJ only	H=	EJ print operation succeeded	Sent in addition to messages for physical journal. EJ is nearly full
		H>	EJ print operation failed	EJ is full **Note:** No messages are sent from hard copy backup
002	EJ and hardcopy backup	H0	Print operation succeeded	Paper supplies are low
		H6	Journal printer backup activated	Sent when the physical journal printer enters a fatal state

Option 35 Value	Type	Message Sequence		Comment
		H8	Journal printer backup reprint started	Sent when the journal printer restarts
		H7	Journal printer backup and reprint terminated	Sent after H8 when the reprint is successfully completed
		H;	Journal printer backup reprint halted	Sent if the journal printer enters a fatal state during a reprint
	EJ only	H=	Successful EJ print operation	Sent in addition to messages for physical journal. EJ is nearly full
		H>	EJ print operation failed	EJ is full

Night Safe Depository (Solicited/Unsolicited)

A solicited status message is sent in response to a Transaction Reply Command message if the deposit has not been detected. It indicates that one of the following conditions has occurred:

- Cardholder has not attempt a deposit
- Deposit door is jammed closed
- Bag detection mechanism is faulty.

The unsolicited status message is sent on the tenth consecutive 'cardholder did not attempt deposit' indication.

Table 9-54
Night Safe Depository Status

Field	Number of Characters	Content		
g1	1	Device Identifier Graphic 'K'.		
g2	1	Transaction/Device Status.		
		Sol/ Unsol	**Code**	**Description**
		U	'0'	Tenth consecutive 'customer did not attempt a deposit'. Reported only once.
		S	'1'	Undetected deposit, or bag detection switch blocked before enable. *See* Table Note 114.
g3	1	Error Severity.		
		Code	**Description**	
		'0'	No error. Bag detection mechanism was clear when the deposit door was unlocked.	

Field	Number of Characters	Content	
		'2'	Warning. Bag detection mechanism was blocked when the deposit door was unlocked (solicited status). NCR recommends that you shut down the SST if you require confirmation of all deposits.
		Tenth consecutive 'customer did not make deposit' (unsolicited status).	
g4	Var	Diagnostic Status (M-status plus M-data). The M-status describes the main error found.	
g5	1	Supplies Status. Indicates the status of the night safe.	
		Code	**Description**
		'0'	No new state (solicited only)
		'1'	No overfill condition
		'4'	Overfill condition

Table Note 114: If the bag detection mechanism is blocked when the deposit door is unlocked, the cardholder is given time to make the deposit (timer 08). When timer 08 expires, the error status is sent. The 'more time' screen (screen 'C00') is not displayed unless the bag detection mechanism is clear when the door is unlocked.

If message mode Option Digit 3A is set to check the bag detection mechanism before unlocking the Night Deposit door, and the dour is found to be blocked (overfill), the solicited status message is sent immediately. For details, refer to the *APTRA Advance NDC, Supervisor's Guide*. In this case, no deposit is allowed. The current transaction must be terminated by Central, and no further Night Deposit transactions will be allowed by Central until the condition is cleared.

Encryptor (Unsolicited)

This message indicates that an attempt to use the encryptor has failed. If an error status is reported, NCR recommends that an attempt be made to re-enter the local encryption keys.

Table 9-55
Encryptor Status

Field	Number of Characters	Content	
e1	1	Device Identifier Graphic 'L'.	
e2	1	Device Status.	
		'1'	Encryptor error.
		'2'	Encryptor not configured.

Field	Number of Characters	Content
e3	1	Error Severity. Standard code used to make a shutdown decision.
e4	Var	Diagnostic Status. **Note:** The encryptor status is reported in the M-data field of the Diagnostic Status for compatibility with NDC+.
e5	1	Not used.

Camera (Unsolicited)

This message indicates that a camera error has been detected. For details of the Enhanced Configuration option to enable unsolicited error reporting for the security camera, see "Option 32 – Unsolicited Reporting Control" on page 7-10.

Supervisor message mode Option Digit 3B can also be set to send unsolicited messages. For details, refer to the *APTRA Advance NDC, Supervisor's Guide*.

Table 9-56
Camera Status

Field	Number of Characters	Content
e1	1	Device Identifier Graphic 'M'.
e2	1	Device Status. Always '0'.
e3	1	Error Severity. This can be good, warning or fatal.
e4	Var	Diagnostic Status. **Note:** The M-data information applies only to certain types of camera.
e5	1	Supplies Status. Indicates the status of the storage capacity for pictures. **Code** **Description** 1 Capacity OK 2 Nearly Full 3 Capacity Exhausted

Sensors (Unsolicited)

This message is sent on Supervisor mode entry and exit, tamper indicating bin in/out conditions and alarm conditions.

Table 9-57
Sensors Status

Field	Number of Characters	Content		
e1	1	Device Identifier Graphic 'P'.		
e2	19	Device Status. This field contains up to 19 bytes.		
		Byte 1 indicates the type of change being reported:		
		Char	**Code**	**Description**
		1	'1'	'TI' sensor change
			'2'	Mode change
			'3'	Alarm state change
	See Table Note 117		'5'	Full TI and full alarms change detected
	See Table Note 117		'6'	Flexible TI and alarms change detected
		If byte 1 = '2' (mode change) the next byte gives details of the current state:		
		2	'0'	Supervisor mode exit
			'1'	Supervisor mode entry
		3	'1'	Simulated Supervisor mode entry/exit during AER (if configured through the registry)
		Bytes 3/4-13 are omitted.		
		For example, 'P21' indicates Supervisor mode entry and 'P20' Supervisor mode exit. If an extra field is included to distinguish between simulated Supervisor entry and exit during AER, the codes are 'P211' and 'P201'. Byte 3 is used if the extra field is added in the message. For information on configuring the extra field through the registry, refer to the "Configuring Supervisor Functionality" section in chapter 5 "Configuring Advance NDC and Associated Components" of the *APTRA Advance NDC, Developer's Guide.*		
		If byte 1 = '1'(TI sensor change) or '3' (Alarm state change) bytes 2-13 give details of the state of the following sensors:		
		2	'0'	Supervisor mode inactive
			'1'	Supervisor mode active

Field	Number of Characters	Content		
		3	'0'	Vibration and/or heat sensor inactive. *See* Table Note 115 and Table Note 116.
			'1'	Vibration and/or heat sensor active
		4	'0'	Door contact sensor inactive. *See* Table Note 115 and Table Note 116.
			'1'	Door contact sensor active
		5	'0'	Silent signal sensor inactive. *See* Table Note 115 and Table Note 116.
			'1'	Silent signal sensor active
		6	'0'	Electronics enclosure sensor inactive. See Table Note 115 and Table Note 116.
			'1'	Electronics enclosure sensor active
		7	'0'	Deposit bin out
			'1'	Deposit bin in
		8	'0'	Zero is always returned
		9	'0'	Currency reject bin out
			'1'	Currency reject bin in
		10	'0'	Currency cassette in position 1 (top) out
			'1'	Currency cassette in position 1 (top) in
		11	'0'	Currency cassette in position 2 (second) out
			'1'	Currency cassette in position 2 (second) in
		12	'0'	Currency cassette in position 3 (third) out
			'1'	Currency cassette in position 3 (third) in
		13	'0'	Currency cassette in position 4 (bottom) out
			'1'	Currency cassette in position 4 (bottom) in

If byte 1 = '5' (full TI and full alarms change detected) bytes 2-13 are as above. Bytes 14-19 give details of the state of the following sensors.

Char	Code	Description
14	'0'	Coin dispenser out
	'1'	Coin dispenser in
15	'0'	Coin dispenser hopper 1 out
	'1'	Coin dispenser hopper 1 in
16	'0'	Coin dispenser hopper 2 out

Field	Number of Characters	Content		
			'1'	Coin dispenser hopper 2 in
		17	'0'	Coin dispenser hopper 3 out
			'1'	Coin dispenser hopper 3 in
		18	'0'	Coin dispenser hopper 4 out
			'1'	Coin dispenser hopper 4 in
		19	'0'	CPM pockets open
			'1'	CPM pockets closed
		If byte 1 = '6' (flexible TI and alarms change detected), the data is the same as that for the Extended Tamper Indicator Identifier 'C' of the Tamper and Sensors Data command. For details, see Table 9-24, "Tamper and Sensor Data Response" on page 9-56.		
e3		Not present		
e4		Not present		
e5		Not present		

Table Note 115: If the SST is not configured with the Tamper Indicating feature, a code of '1' is never returned and bytes 7-13 are omitted from all messages.

Table Note 116: If a device is not configured, the associated tamper byte will take the value zero.

Table Note 117: These types of change are reported only when option 24 is set to send the Enhanced TI/Sensor status.

Touch Screen Keyboard (Unsolicited)

This message indicates that the keyboard has detected an error.

Table 9-58
Touch Screen Keyboard Status

Field	Number of Characters	Content
e1	1	Device Identifier Graphic 'Q'.
e2	1	Device Status. Always '3', indicating a hardware error.

Field	Number of Characters	Content
e3	1	Error Severity. Always '4', indicating fatal.
e4	Var	Diagnostic Status (M-status plus M-data). The M-status describes the main error found.
e5	-	Not present.

Supervisor Keys (Unsolicited)

This message is sent to inform the host of the functions selected by the operator after entry to Supervisor mode.

Note: When Diagnostics is selected from the Select menu in Supervisor, an R07 message is sent to the host. This indicates that the Diagnostics option has been selected, but not whether entry to Diagnostics has been successful.

Table 9-59
Supervisor Keys Status

Field	Number of Characters	Content
e1	1	Device Identifier Graphic 'R'.
e2	Var	Device Status.

Char	Code	Description
If Option Digit 0 = '0', the device status field will contain two characters:		
1-2	'00' - '98'	Key selection from Select menu.
or		
If Option Digit 0 = '1', the device status field will contain three characters:		
1	'0'	Select menu
	'1'	Replenishment menu
	'2'	Configure menu
	'3'	Access menu
	'4'	Reserved.
	'7'	Exit menu. *See* Table Note 118.
	'8'	Exit menu. *See* Table Note 118.
2-3	'00' - '98'	Menu item selected. For the permitted values for each menu, refer to the *APTRA Advance NDC, Supervisor's Guide*.
or		

Field	Number of Characters	Content	
If Option Digit 0 = '2', the device status field will contain five characters:			
	1-3	as for Option Digit 0 = '1'	
	4-5	'00' - '98'	Item selected from a sub-menu, such as the Key Entry menu. For the permitted values for each menu, refer to the *APTRA Advance NDC, Supervisor's Guide*.
	or		
If Option Digit 0 = '3', the device status field will contain three to seven characters:			
	1-5	as for Option Digit 0 = '2'	
	6-7	'00' - '98'	Item selected from the options, such as component selection on the Key Entry menu. For the permitted values for each menu, refer to the *APTRA Advance NDC, Supervisor's Guide*.
	or		
If Option Digit 0 is set to any value greater than '3', the selections are reported as if Option Digit 0 had been set to '2'; that is, the component selections are not reported.			

Table Note 118: Menu numbers 7 and 8 are reserved for Exits designers. You may also redefine these messages using the SUPCTR file. For more information, refer to the *APTRA Advance NDC, Extending the Product* publication.

Table Note 119: When a menu is longer than one screen, function '99' is used to switch between the screens. No message is transmitted for this selection.

The menu item is normally as defined in the *APTRA Advance NDC, Supervisor's Guide*, but with the following exception:

For compatibility with previous releases, function '25' Key Entry on the Access menu is not reported when Option Digit 0 = '1'. Actions in the Key Entry sub-menu are reported using the Access menu functions '6' to '11'. The components of each key are entered and written to the encryptor as follows:

Key	Enter Component	Write to Encryptor
V	06	07
A	08	09
B	10	11

All other fields are omitted.

Cardholder Display Alarm (Unsolicited)

An unsolicited message is sent to indicate a state change in the cardholder display sensor. The reporting of unsolicited message is controlled through Enhanced Configuration Parameter option 32. For details, see "Option 32 – Unsolicited Reporting Control" on page 7-10.

Table 9-60
Cardholder Display Alarm Status

Field	Number of Characters	Content
e1	1	Device Identifier Graphic 'S'.
e2	1	Device Status Always '0'
e3	1	Error Severity. This is a single character field coded in the standard way to be used to make a shutdown decision. The value can either be 0 or 4. '0' - No error/not supported. '4' - Fatal.
e4		Field not present.
e5		Field not present.

Statement Printer (Solicited/Unsolicited)

A solicited status message is sent to the host if a fault requiring attention occurs during transaction processing. An unsolicited status message is sent when a statement is detected in the transport, the statement printer supplies (paper, ribbon, print-head, knife, capture bin) require attention, or an error occurs on a cut-and-deliver function during a Close state.

Table 9-61
Statement Printer Status

Field	Number of Characters	Content		
g1/ e1	1	Device Identifier Graphic 'V'.		
g2/ e2	1	Transaction/Device Status.		
		Sol/ Unsol	**Code**	**Description**
		U	'0'	No transaction error condition, but check other fields for error severity, diagnostic status or supplies status change.
		S/U	'1'	Print/cut not successful

Field	Number of Characters	Content		
		S	'2'	Device not configured
		U	'3'	Statement present in transport
		U	'4'	Cardholder pressed ***Cancel*** during a 'print statement and wait' function.
		N/A	'5'	Reserved
		N/A	'6'	Reserved
g3/ e3	1	Error Severity. Standard code used to make a shut-down decision.		
g4/ e4	Var	Diagnostic Status (M-status plus M-data). The M-status describes the main error found.		
g5/ e5	5	This five-character field indicates the status of the printer paper, paper ribbon, print-head, knife and capture bin.		
		Char	**Code**	**Description**
		0	'1'	Sufficient paper
			'2'	Paper low
			'3'	Paper exhausted
		1	'1'	Ribbon OK
			'2'	Ribbon replacement recommended
			'3'	Ribbon replacement mandatory
		2	'1'	Print-head OK
			'2'	Print-head replacement recommended
			'3'	Print-head replacement mandatory
		3	'1'	Knife OK
			'2'	Knife replacement recommended
			'3'	Knife replacement mandatory
		4	'1'	Capture bin OK
			'4'	Capture bin overfill. *See* Table Note 121.

Table Note 120: If message mode Option Digit 3C is set, the ***Cancel*** key on the consumer keyboard is enabled during Print Statement And Wait functions. For details, refer to the *APTRA Advance NDC, Supervisor's Guide*. If the cardholder presses the ***Cancel*** key, a new unsolicited status message is sent to the host. If this option is used,

the host application must be changed so that it recognises the new status message.

The print statement function being performed when the consumer presses ***Cancel*** is unaffected and is completed as normal.

Table Note 121: If the statement capture bin returns a status of 'overfill', the statement printer must be initialised using the Supervisor option 'INIT STMNT' from the Replenish Menu, once the capture bin has been emptied. For details, refer to the *APTRA Advance NDC, Supervisor's Guide*.

Voice Guidance (Unsolicited)

If there is a problem with the voice guidance system and Enhanced Configuration option 32 is set, this unsolicited message gives the status of the following features of voice guidance:

- The audio card
- The enhanced audio control
- The audio jack
- The voice guidance XML configuration file.

For details of option 32, see "Option 32 – Unsolicited Reporting Control" on page 7-10.

Table 9-62
Voice Guidance Status

Field	Number of Characters	Content
e1	1	Device Identifier Graphic 'a'.
e2	1	Device Status. Indicates there is a problem with the voice guidance system. The value is: **Sol/ Unsol** / **Code** / **Description** U / '1' / An error has occurred
e3	1	Error Severity. **Code** / **Description** 0 / No errors 2 / Warning 4 / Fatal

Field	Number of Characters	Content		
e4	Var	Diagnostic Status. The diagnostic status is formatted as follows:		
		Byte	**Code**	**Description**
		1	00	Audio card is inaccessible
			01	Audio card is accessible
		2	00	No audio jack available
			01	The audio system is in manual mode and the public state. All audio messages are played through the speakers.
			02	The audio system is in automatic mode and the public state. When a headset is inserted, the audio messages are played through the audio jack; otherwise audio messages are played through the speakers.
			04	The audio system is in semi-automatic mode and the public state. When a headset is inserted, the audio messages are played through the audio jack; otherwise audio messages are played through the speakers.
			08	The audio system is in manual mode and the private state. All audio messages are played through the audio jack only, whether or not a headset is inserted.
			16	The audio system is in automatic mode and the private state. When a headset is inserted, audio messages are played through the audio jack; when the headset is removed, the device enters the public state.
			32	The audio system is in semi-automatic mode and the private state. All audio messages are played through the audio jack; when the headset is removed, the audio system remains in the private state.
		3	00	No audio jack is present
			01	A headset is connected
			02	No headset is connected
		4	00	The XML definition file is inaccessible
			01	The XML definition file is accessible
e5		Not used.		

Note Acceptor (Solicited/Unsolicited)

This message gives the status of the cash acceptor or recycling unit in the following situations:

- Solicited device status messages sent in response to the following Transaction Reply command messages:
  - — Refund Cash Deposit
  - — Deposit Cash
  - — Deposit Cash and Wait

  - — Dispense notes first during valuable media exchange
  - — Deposit notes first during valuable media exchange
- As a result of a cash acceptor or recycling unit error
- Whenever the device completes an operation, for example, after processing inserted notes. This is always reported, whether the operation is successful or produces an error.

  In the event of an error, for example when a refund operation jams, the number of notes at each location in the BNA will become indeterminable. In this case, the best known representation of the counts will be shown. A counter of 0, represented by a space in the message, may be reported for active note types whose counts are unknown.

  Counts are returned as follows:

  - — All count fields (for notes in the escrow, vaulted notes and returned notes) in status messages include category 3 (suspect) and category 4 (authenticated) notes combined.
  - — Counts for category 2 (counterfeit) notes are never included except in ECB 6 messages for category 2 notes, indicated by the message designator '?'.
  - — ECB 6 messages for category 3 notes have a message designator of '@' and include the counts for category 3 notes.
- During a dispense operation where recycling is enabled and the supplies status changes from Media Full to Media High or from Media High to Good for a cassette, an unsolicited status message is sent. No transaction note counts are reported.
- If error recovery is enabled and a power failure occurs with notes in the escrow, then on power-up an unsolicited status message is sent reporting the vaulted counts returned by XFS. If the platform has limitations in reporting updated counts, the message `COUNTS MAY BE INACCURATE` is journaled.

Reporting of CIM NDC Cassette Types

The number of CIM NDC cassette types and the order in which they are reported to the host depends on the reporting of the XFS logical cash units by the platform.

On a GBXX system, CIM NDC cassette type reporting depends on the initial position of the cassettes following installation. If new XFS logical cash units are inserted, these are appended to the existing reporting order.

Counts in ECB 6 Unsolicited Messages

When category 2 (counterfeit) notes are sent in a `w?` unsolicited message or category 3 (suspect) notes in a `w@` unsolicited message, counts are reported as follows:

- Direct deposits
  Counts are reported in the Vaulted Counts field, which is used to report note counts after notes are inserted
- Escrow deposits
  Counts are reported in the Escrow Counts field

Table 9-63
Bunch Note Acceptor Status

Field (Subfield)	Number of Characters	Content		
g1/e1	1	Device Identifier Graphic 'w'.		
g2/e2	1	Transaction/Device Status; gives details of a cash acceptor or recycle unit operation in response to a Transaction Reply command message, or as a result of a cash acceptor or recycling unit error Values are:		
(g200/ e200)	1	Error Code *See* Table Note 122		
		Sol/ Unsol	**Code**	**Description**
		U	'0'	Successful operation, but an exception has occurred or notes have been moved in the device outside a Transaction Reply function. Up to date counts are included, which will be in the escrow notes field (refundable deposits) or the vaulted notes field (direct deposits). In this case, both counts are cumulative within the transaction. *See* Table Note 123 It is also possible for a `w0` code to be returned when notes are refunded for example, in the Close state. In this case, counts are reported in the Refunded counts fields
		U	'1'	***Cancel*** selected, ***Refund*** selected or a time-out occurs during the Cash Accept state. Note counts will be in the escrow notes field (refundable deposit) or the vaulted notes field (direct deposit). *See* Table Note 123
		N/A	'2'	Reserved for legacy implementations
		S/U	'3'	Error - if counts are included, they are as accurate as the available information allows, except for notes left in the escrow in the Close state when the note counts *are* accurate. *See* Table Note 123 and Table Note 124
		S/U	'4'	Device inoperative - notes are left at the exit slot; counts are included. Usually this is returned counts in the w4 message as notes are at the exit slot. *See* Table Note 123
		S	'5'	No notes in the escrow when the Transaction Reply function attempts to vault escrowed notes or return cash, indicating an error at the host

Field (Subfield)	Number of Characters	Content		
		U	'6'	Notes detected at power-up; if automatic error recovery is disabled counts are included in the escrow counts field; if automatic error recovery is enabled and the notes are successfully moved, the counts will be in the vaulted counts field.
		U	'7'	Notes not taken, but retracted; counts are included in the Vaulted Counts field. (not reported on cash acceptors that do not support retract operations or with retract disabled) *See* Table Note 125 and Table Note 126
		N/A	'8'	Unable to be vaulted. Not supported
		N/A	'9'	Reserved for legacy implementations
		U	'?'	Counterfeit notes have been detected. *See* Table Note 127, Table Note 128 and Table Note 129
		U	'@'	Suspect notes have been detected. *See* Table Note 127, Table Note 128 and Table Note 129
		N/A	A	Reserved for legacy implementations
		N/A	B	Reserved for legacy implementations
		N/A	C	Reserved for legacy implementations
		N/A	D	Reserved for legacy implementations
		U	F	In the Close state, the notes are captured to casettes and/or bins as part of the Auto Error Recovery. The captured notes are reported in the vaulted counts, which includes the counts of all the notes that are moved to the cassettes and/or bins from all parts of the device during the auto error recovery. The counts may not be accurate if the device has not detected all the notes that are captured during error recovery. *See* Table Note 133
(g201/ e201)	50	Escrow counts up to 90 for each of the 50 NDC note types (1 byte each) *See* Table Note 130		
(g202/ e202)	50	Vaulted counts up to 90 for each of the 50 NDC note types (1 byte each) *See* Table Note 130		
(g203/ e203)	50	Returned counts up to 90 for each of the 50 NDC note types (1 byte each) *See* Table Note 130		
(g204/ e204)	1	Total number of notes, up to 90, returned to the exit slot *See* Table Note 131		
g205/ e205)	1	Total number of notes, up to 90, in the escrow *See* Table Note 131		
(g206/ e206)	1	Total number of notes, up to 90, just vaulted *See* Table Note 131		

Field (Subfield)	Number of Characters	Content
When bit 1 of option 45 is set, the following fields are also present for note types with more than 90 notes. Each pair consists of a Note Type, and a Note Count the value of which is added to the previous note count to report the total number of notes entered. **Note:** These fields are repeated for each note type where the number of notes entered is more than 90. If any of these fields is present, all the group separators must be present even if there is no data for the data groups. If all the total values are not more than 90 notes, no fields after g206/e206 will be present.		
(g207/ e207)		Escrow counts for each NDC note type with more than 90 notes *See* Table Note 132
	2	Note type as a hexadecimal value
	3	Note count as a decimal value, added to the previous note count for that type, to report the total number of notes entered
(g208/ e208)		Vaulted counts for each NDC note type with more than 90 notes *See* Table Note 132
	2	Note type as a hexadecimal value
	3	Note count as a decimal value, added to the previous note count for that type, to report the total number of notes entered
(g209/ e209)		Returned counts for each NDC note type with more than 90 notes *See* Table Note 132
	2	Note type as a hexadecimal value
	3	Note count as a decimal value, added to the previous note count for that NDC note type, to report the total number of notes entered
(g210/ e210)	3	Total number (decimal value) of notes returned (moved to the exit slot) in excess of 90 *See* Table Note 134
(g211/ e211)	3	Total number (decimal value) of notes in the escrow or in the top transport in excess of 90 *See* Table Note 134
(g212/ e212)	3	Total number (decimal value) of notes just vaulted in excess of 90 *See* Table Note 134
g3/e3	Var	Error severity, as described in "Cash Acceptor Fitness (DIG 'w')" on page E-25
g4/e4	Var	Diagnostic status (M-status plus M-data); the M-status describes the main error found *See* Table Note 135 and Table Note 136
g5/e5	Var	Supplies status of all cassettes in the device, as described in "Cash Acceptor Supplies (DIG 'w')" on page E-17 The status is reported as follows: **Code** **Description** '0' No change '1' Good state

Field (Subfield)	Number of Characters	Content	
		'2'	Bin out (missing or removed)
		'3'	Media high (nearly full)
		'4'	Media full (overfill)

Table Note 122: For field 'g2', the error code information is obtained by mapping from XFS to the corresponding error code.

Table Note 123 Counts are cumulative up to the point that notes are refunded. Then a retract operation will restart the count.

Table Note 124: If a deposit transaction is initiated on an SST without a BNA, no status message is sent to the host.

Table Note 125: If notes not taken by the consumer are retracted to the escrow, the cash acceptor is reported as in a fatal condition. The notes must be removed from the SST and either the Initialise BNA or Clear BNA Supervisor options must be performed to resolve this condition.

Table Note 126: If notes are taken late, that is, just as the retract operation starts, no `w7` message is sent and Advance NDC remains in the Cash Accept state.

Table Note 127: The reporting of counterfeit and suspect notes can be configured. For details of this configuration, refer to Chapter 5, "Configuring Advance NDC and Associated Components" in the *APTRA Advance NDC, Developer's Guide*. If both counterfeit and suspect notes are detected, separate unsolicited messages are sent for each type. Suspect note counts are included in the note counts for all status messages other than 'w?' status messages. Counterfeit notes are included only in 'w?' status messages.

Table Note 128: The counterfeit and suspect note counts in both the escrow counts field (refundable deposit) and the vaulted counts field (direct deposit) are cumulative. That is, each message reports the total counts in the Escrow counts field for all bunches of notes inserted until either a Transaction Request message is sent or notes are refunded. In multiple bunch deposits, a message is sent for each bunch deposited even if no more suspect or counterfeit notes have been added. For refundable deposit in ECB 6 mode, the inserted suspect notes (category 3) will be reported together with the authenticated notes (category 4) in the Escrow counts fields

independently of the actual possible physical location of the suspect notes.

The 'w?' and 'w@' messages are not sent if no notes of the category have been inserted during the transaction.

Table Note 129: If counterfeit and suspect notes are configured, this message can also be configured to include cardholder data after the supplies data. If this data is to be included, the fields described in Table 9-64 are added to the message. For details of configuring this extension to the message, refer to Chapter 5 "Configuring Advance NDC and Associated Components" of the *APTRA Advance NDC, Developer's Guide*.

Table 9-64
Additional Cardholder Data

Field	Number of Characters	Content
FS	1	Field separator
e600	Var (78)	Track 1 data
GS	1	Group separator
e601	Var (39)	Track 2 data
GS	1	Group separator
e602	Var (106)	Track 3 data

Table Note 130: Each byte contain an ASCII value between 20H and 7AH, representing the number of notes of that denomination; for example, ASCII char !(21H) in position 2 means one note of NDC note type 2.

Table Note 131: A single ASCII value between 20H and 7AH, representing a total for the number of notes within a processing category; for example, ASCII char !(21H) means one note.

Table Note 132: A group of zero or more data pairs providing information for denominations with more than 90 notes. Only denominations that have more than 90 notes are included; denominations with exactly 90 notes are not. Each data pair consists of a Denomination Type field and a Note Count field. The Denomination Type field has a hexadecimal value in the range 01 to 32. The Note Count field has a decimal value in the range 001 to 999. The Note Count value is added to the equivalent previous single-byte ASCII note count. The sum of the previous field and the current field provides the total number of notes.

Table Note 133 The status message "wF" does not journal the counts as these counts are journaled as part of the recovery.

Table Note 134: The decimal value (001 to 999) to be added to the equivalent previous single byte ASCII note count. The sum of the previous field and this value provides the total number of notes. If any of fields 'e210'/'g210' to' e212'/'g212' are present, all must be present.

Table Note 135: When a 'w6' message (notes detected at start of day) or a 'w3' message (device error) is sent, and the platform has not provided an M-Status value, an appropriate fixed non-zero M-Status value will be included in the message.

Table Note 136 Native diagnostics data is reported if available (always available on NCR SSTs) otherwise XFS values are mapped to GBRU M-Status values.

Envelope Dispenser (Unsolicited)

The envelope dispenser reports unsolicited status messages depending on the value of Enhanced Configuration Parameter option 23 (see page 10-17). Status messages are sent when the envelope dispenser is detected as being low/out or an envelope failed to be presented or retracted.

Remote status indicators and the remote relay are optionally set and enabled depending on the value of option 23. Solicited status messages are never sent for the envelope dispenser, regardless of the value of option 23.

Messages detailing fitness, configuration and supplies information are sent to the host in response to the 'send configuration data' terminal command.

Table 9-65
Envelope Dispenser Status

Field	Number of Characters	Content		
e1	1	Device Identifier Graphic '\'.		
e2	1	Device Status. Indicates whether the last operation was successful.		
		Sol/ Unsol	**Code**	**Description**
		U	'0'	Envelope presented satisfactorily.
		U	'1'	Failure - envelope not presented or retracted.
e3	1	Error Severity. Standard code.		
e4	Var	Diagnostic Status (M-status plus M-data). The M-status describes the main error found.		
e5	1	Supplies Status. Indicates the replenishment status of the bin containing envelopes to be dispensed.		

Field	Number of Characters	Content	
		Code	**Description**
		'1'	Sufficient envelopes.
		'2'	Envelopes low.
		'3'	Envelopes exhausted.

Cheque Processor (Solicited/Unsolicited)

This message gives details of possible cheque processor responses to a Transaction Reply command, some of which can be controlled by Enhanced Configuration option 83 in Close State. For details, see "Option 83 – Cheque Processor" on page 7-21.

If a Transaction Reply command contains one of the cheque processor function values and the SST does not have a cheque processor configured, a solicited error message is returned.

Table 9-66
Cheque Processor Status

Field	Number of Characters	Content
g1	1	Device Identifier Graphic 'q'.
g2	Var(2)	Transaction/Device Status. Gives details of a cheque processor operation in response to a Transaction Reply Command message. The values are: Error Code (e200/g200). **Sol/Unsol / Code / Description** U / '0' / Successful operation, but an exception has occurred. S/U / '1' / Cancel selected/Time-out occurs during processing (entry/retrieval) of cheque, due to one of the following: - Cardholder did not insert a cheque - Cardholder inserted cheque which was not successfully accepted, but retrieved by cardholder - Cardholder selected Cancel key instead of inserting cheque. When option 83 bit 0 and bit 1 are set to zero, this code also reports retracts. S/U / '2' / Cheque processor failure. U / '3' / Cheque detected at power-up. S/U / '4' / Error, no access (error on bin). S/U / '5' / Cheque jam. S / '6' / Cheque jam, no access. When option 83 bit 0 or bit 1 is set to one, the following code may also be returned: S/U / '7' / Cheque retracted and captured. Error Position (e201/g201) **Code / Description** (space) / ' ' / Non-hardware status reported, or error position not known (severity is Good, Suspend or Fatal).

Field	Number of Characters	Content	
		'E'	Cheque entry/re-entry error (Suspend or Fatal). On a bunch cheque acceptor, this is reported after an error has occurred while inserting cheques or when an error occurs while retracting cheques
		'F'	Image lifting error (Suspend or Fatal). On a bunch cheque acceptor, this is not reported
		'J'	Eject error (Suspend or Fatal). On a bunch cheque acceptor, this is reported after an error when all cheques are returned to the cardholder
		'C'	Capture error (Suspend or Fatal). On a bunch cheque acceptor, this is reported after an error when all cheques are captured
		'W'	Endorse error (Suspend or Fatal). On a bunch cheque acceptor, this is reported when an error is detected with the endorser before cheques are moved from the stacker or any items have been endorsed. All cheques are waiting to be processed
		'P'	Power-fail error, last cheque endorsed (Error code 3, Suspend only). On a bunch cheque acceptor, this is not reported
		'N'	Power-fail error, last cheque not endorsed (Error Code 3, Suspend only). On a bunch cheque acceptor, if a power fail error occurs, some cheques may have been endorsed, but some may not
		When option 83 bit 1 is set to one, the following additional data is returned to indicate the location of the media *See* Table Note 137	
	1	GS	Group Separator *See* Table Note 138 and Table Note 139
	3	Cheque ID. The three-digit decimal number assigned to each cheque in the range 000-999	
	2	Cheque Location	
		Value	**Description**
		01	The cheque is inside the device, but not in a bin
		02	The cheque is in a bin. The bin is identified in the Bin Number field
		03	The cheque has been returned to the cardholder
		04	The location of the cheque is unknown
	2	Bin Number. A two-digit decimal value containing the number of the bin in which the cheque has been deposited If the cheque is not in a bin, this is '00'	

Field	Number of Characters	Content
g3/ e3	Var	Error Severity. When option 83 bit 0 and bit 1 are set to zero, a single character is returned, which represents the overall error severity of the device. **Char** **Description** 1 Overall cheque processor When option 83 bit 0 or bit 1 is set to one, the following is returned: **Char** **Description** 1 Overall cheque processor 2 Endorse printer 3 Stamper 4 Reserved 5 Reserved 6 Bin 1 7 Bin 2 8 Bin 3 : : *n* Bin *n* The number of bins reported depends on hardware configuration Each character can take one of the following values: **Value** **Description** '0' No error / Not configured '1' Routine '2' Warning '3' Suspend '4' Fatal
g4/ e4	Var	Diagnostic Status. When option 83 bit 0 and bit 1 are set to zero, this field contains zeroes and is 14 bytes long. When option 83 bit 0 or bit 1 is set to one, this field is variable length and contains the cheque processor diagnostic information.

Field	Number of Characters	Content	
g5/ e5	Var	Supplies Status.	
		When option 83 bit 0 and bit 1 are set to zero, this field contains zeroes and is 4 bytes long.	
		When option 83 bit 0 or bit 1 is set to one, the following is returned:	
	1		Endorse printer
	1		Stamper
	1		Reserved
	1		Reserved
	1		Bin 1
	1		Bin 2
	1		Bin *n*
		Supplies Status Values	
		Value	**Description**
		‘0’	Not configured / Reserved
		‘1’	Good state
		‘2’	Media low
		‘3’	Media out
		‘4’	Overfill
		‘5’	Media high (almost full)

Table Note 137: If an error occurs, it is not always possible to accurately report the location of a cheque.

Table Note 138: When information on cheque location is reported, each cheque is reported within a group separated by a group separator. All fields must be present for each cheque that has a cheque ID, including any cheques that the cardholder requested for return. Each cheque data group is preceded by a group separator. No group separator follows the final cheque to be reported, and if no cheques are reported, no group separator is present.

Table Note 139: When the unsolicited message is generated before a transaction request has been sent to the host, no information on the cardholder or the cheques is available to the host. However, all local data is journaled.

Coin Dispenser (Solicited/Unsolicited)

This message gives details of a Coin Dispenser response to a Transaction Reply Command message. Unsolicited messages always have a device status of 0.

When option 79 is set to '000', this message reports the status of four hopper types. When option 79 is set to '001', this message reports the status of the number of hopper types reported in the Hardware Configuration message. The status is always reported for a minimum of four hopper types. For details of option 79, see "Option 79 – Coin Dispenser" on page 7-21.

Table 9-67
Coin Dispenser Status

Field	Number of Characters	Content		
g1/ e1	1	Device Identifier Graphic 'Y'.		
g2/ e2	1 *See* Table Note 140	Transaction/Device Status. Gives details of a coin dispense operation in response to a Transaction Reply Command message. The values are:		
	See Table Note 141	**Sol/ Unsol**	**Code**	**Description**
		S/U	'0'	Successful operation, but an exception has occurred, described in the Diagnostic Status field.
		S	'1'	The coin dispenser low thresholds for each coin hopper were not set during the configuration of the SST. No coins have been dispensed.
		S	'3'	The coin dispense has not started as the requested hopper is: • in a fatal state • out of coins • not in the correct position to allow a dispense • in a low condition without enough coins to perform the dispense. No coins have been dispensed.
		S	'4'	The coin dispense has failed for a reason other than a jam. Some coins may have been dispensed.
		S	'9'	The coin dispense has failed due to a jam in the hopper. Some coins may have been dispensed.
		S	':'	The coin dispense has failed due to a jam in the transport chute. Some coins may have been dispensed.
		S	';'	The transport chute exit sensor was blocked at the start of the coin dispense. No coins have been dispensed.
		S	'<'	A coin dispense has been attempted while the coin dispenser is in a fatal state. No coins have been dispensed.

Field	Number of Characters	Content		
		S	'='	Tampering detected during dispense. The coin dispense has failed due to the module being accessed during the dispense. Some coins may have been dispensed.
	Var	Coins Dispensed		
	See Table Note 142	**Char**	**Description**	
		2-3	Decimal representation of the number of coins dispensed from hopper type 1	
		4-5	Decimal representation of the number of coins dispensed from hopper type 2	
		6-7	Decimal representation of the number of coins dispensed from hopper type 3	
		8-9	Decimal representation of the number of coins dispensed from hopper type 4	
		10-11	Decimal representation of the number of coins dispensed from hopper type 5	
		<n>-(*<n>*+1)	Decimal representation of the number of coins dispensed from hopper type *<n>*	
g3/ e3	Var	Error Severity. Used to make a shut-down decision. Holds the severity information for the coin dispenser and the sub-device elements (coin hoppers 1 to *<n>*).		
		Char	**Description**	
		1	Coin dispenser core components	
		2	Coin hopper type 1	
		3	Coin hopper type 2	
		4	Coin hopper type 3	
		5	Coin hopper type 4	
		6	Coin hopper type 5	
		<n>	Coin hopper type*<n>*	
		Each character can take one of the following values:		
		Value	**Description**	
		'0'	No error	
		'1'	Routine	
		'2'	Warning	
		'3'	Suspend. This is only used for the coin dispenser core components character	
		'4'	Fatal	
g4/ e4	Var(14)	Diagnostic Status. Maintenance data reported by the coin dispenser.		

Field	Number of Characters	Content
g5/ e5	Var(4)	Supplies Status. Holds the replenishable condition for the coin dispenser and the sub-device elements. See field g3/e3 (Error Severity) for the order of reporting on the coin dispenser and the sub-device elements.

Value	Description
'0'	State not determined during this operation
'1'	Good
'2'	Hopper Low. The sensor associated with this hopper has indicated a low condition.
'3'	Hopper Empty. The sensor associated with this hopper has indicated low and the coin low threshold limit has been reached.

Table Note 140: For field g2, the error code information is obtained by mapping the received ActiveXFS event to its corresponding error code.

Table Note 141: Unsolicited messages always have a device status of '0'.

Table Note 142: This information can be used to facilitate a transaction reversal or correction if required. The information refers to coins that have left the hopper, but not necessarily reached the cardholder.

Barcode Reader (Unsolicited)

This message gives details of the barcode reader response to a Transaction Reply command message. Unsolicited device status messages are sent only if option 48 is set to 1. For more information, see "Option 48 – Barcode Reader" on page 7-18.

Table 9-68
Barcode Reader Status

Field	Number of Characters	Content
e1/ g1	1	Device Identifier Graphic 'f'
e2/ g2	1	Device Transaction Status Error Code (e200/g200)

Field	Number of Characters	Content		
		Sol/ Unsol	**Code**	**Description**
		U	'0'	Good operation but some exception has occurred as detailed in the accompanying data.
		U	'1'	Barcode reader is inoperative.
	1	Field Separator		
e3/ g3	1	Overall Barcode Reader Error Severity		
		Code	**Description**	
		'0'	No error / Not configured	
		'1'	Routine	
		'2'	Warning	
		'3'	Suspend	
		'4'	Fatal	
	1	Field Separator		
e4/ g4	Var	Diagnostic status Barcode reader diagnostic information		
	1	Field Separator		
e5/ g5	0	Supplies Status		

Secondary Card Reader (Unsolicited)

This message gives details of any exception condition that is detected during card processing by the secondary card reader. Advance NDC supports only a contactless card reader as the secondary card reader and does not report solicited device faults for a secondary card reader. If a contact and a contactless card reader are available on an SST, the contactless card reader is always the secondary card reader.

Note: If failure occurs in the physical connection or in the configuration of the reader, an unsolicited status message is reported indicating that the secondary card reader has a fatal severity and that the device is inoperative. Advance NDC does not put the SST into Out of Service mode even when either or both the card readers enter a fatal state. It is the responsibility of the host and the host must be configured to do this if required.

Table 9-69
Secondary Card Reader Status

Field	Number of Characters	Content
g1/ e1	1	Device Identifier Graphic 'y'
g2/ e2	1	Transaction/Device Status. Gives details of any transaction-related exception condition detected while processing a card at the SST. Only one value is returned as follows:

Sol/ Unsol	Code	Description
U	'0'	No transaction exception condition occurred but consult other fields for error severity, diagnostic status or supplies status changes.

Field	Number of Characters	Content
g3/ e3	Var (1 or 2)	Error Severity. This is a one or two character field coded in the standard way to be used to make a shut-down decision. For details, see "Device Fault Status Information Field" on page 9-79 "
g4/ e4	Var	Diagnostic Status (M-status plus M-data). This contains information to be used for logging device errors. The M-status describes the main error found. *See* Table Note 143
g5/ e5	1	Supplies Status. This is a single character field indicating the state of the card capture bin.

Code	Description
'1'	No overfill condition (capture bin)

Table Note 143 When the contactless card reader fails as a result of any error, one of the following m-status is reported:

Table 9-70
M-Status for Card Reader Failure

M-Status (Dec)	Severity	Literal	Description
53	ROUTINE	MS_XML_CONFIG_ERROR	There has been an error when configuring the device using the *contactlessenabler .xml* file.
54	ROUTINE	MS_TRANSIDNOTFOUND_ERROR	Transaction Identifier not found in the *contactlessenabler.xml* file.
55	FATAL	MS_READER_DATA_ERROR	The data returned by the reader is invalid and this could be as a result of the reader firmware getting corrupted, or the installed reader firmware does not support the contactless card reader. See Table Note 144

M-Status (Dec)	Severity	Literal	Description
96	FATAL	MS_USB_COMMS_FAILURE	There has been an error due to transmission of data with a contactless card reader.
97	FATAL	MS_DEVICE_TIMEOUT	There has been an error due to no response received from the contactless card reader.
98	FATAL	MS_DEVICE_COMMS_ FAILURE	There has been an error when USB communications cable is disconnected from the contactless card reader.

Table Note 144 When m-Status 55 is sent to the host, FIRMWARE MISMATCH is displayed on the fault display, indicating that the USB contactless card reader (USBCCR) component of 93.01.00.03 version or above must be installed.

For more information on the *ContactlessEnabler.xml* file, refer to section "Configuring Contactless Card Reader" in Chapter 5, "Configuring Advance NDC and Associated Components" of the *APTRA Advance NDC, Developer's Guide*.