

# **PROPERTY MANAGEMENT SYSTEM**

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## **COMMUNICATION INTERFACE SPECIFICATION**

**NEC America, Inc.**

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## Chapter 1 Overview

This document is a description of the interface between the NEC NEAX2400 IMS (hereafter referred to as the NEAX) and the hotel's Property Management System (PMS). This document contains almost all (see below) of the information specified in the *NEAX2400 IMS Hotel System PMS Interface Specifications* (document ND-90265 (E) Issue 2), and is intended to replace it.

The PMS and NEAX may communicate using either an asynchronous or bisynchronous (BSC) method over a serial line. The transmission protocols are thoroughly described in the Architecture section. The descriptions of the messages transmitted are in the Descriptions section. The formats of the messages are in the Formats section. For a complete list of all messages, please see [Appendix C, "Feature Codes"](#) and [Appendix D, "Function Codes"](#).

Information specified in the *NEAX2400 IMS Hotel System PMS Interface Specifications* document, but not included in this document are the messages specific to Model 120. Those messages are 56-3, 61-2, 58-1, 58-2, 58-3, 58-4 and 58-5. These messages are for the Directory Assistance Interface [D-88] feature, which is not used in the United States.

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## Chapter 2 Architecture

The PMS communicates with the NEAX over one or more serial cables. A maximum of three lines can be provided as data links between the NEAX and the PMS.

The three lines are designated as Line 1, Line 2 and Line 3. Line 1 is used for Hotel Processing messages; Line 2 and Line 3 are used for Interactive messages.

Hotel Processing messages, such as Check In, Check Out and Message Waiting Lamp control, have less severe real-time requirements than interactive messages. Line 1 is only utilized for these messages and they will never be sent over Line 2 or Line 3.

Interactive messages are the Direct Data Entry messages and Maid Status Answerback messages. These messages require real-time interaction between the PMS and the NEAX and can therefore be isolated from the Hotel Processing messages. If Line 2 is installed, these messages will be transmitted over that line. If Line 2 and Line 3 are installed, these messages will load share over both lines. If only Line 1 is installed, these messages will be transmitted over Line 1.

The use of Line 1 is mandatory. If only Line 1 is installed, all messages are transmitted over it. Also, if Model 60 is being used, only Line 1 is necessary, as all of the Interactive messages are exclusive to Model 90.

It is very rare for Line 2 or Line 3 to be required. They are only needed if the traffic between the PMS and the NEAX is to be exceptionally heavy. And even the heavy traffic should only require Line 2.

The PMS may communicate with the NEAX through either an asynchronous transmission protocol or a bisynchronous transmission (BSC) protocol.

## Asynchronous Transmission

### Line Control Characteristics

The characteristics of the signals transmitted across the communications link are as follows:

**Table 2-1 Line Control Characteristics**

Item	Conditions
Control Method	Contention method (point to point)
Operating Mode	Half duplex (if modems are used, set to full duplex)
Synchronization	Start-stop system
Data Rate	1200, 2400 or 4800 bits/second (bps)
Frame Contents	ASCII (7bits)
Error Control Method	VRC: Parity, LRC: BCC
Bit Transmission Order	Priority is given to low order bits.
Transmission Intervals	At each data generation. When a stream of information is transmitted to the NEAX continuously, an interval of 0.5 seconds or more should be given between messages. Each message must be delimited by the EOT code.
Priority Sequence	Primary office: NEAX Secondary Office: PMS
Stop bit	1 bit or 2 bits
Error Control	VRC: Even, odd or no parity. LRC: (BCC) Exclusive OR of the message text, starting after the STX, and ending with (and including) the ETX.
Message Composition	One message constitutes one record; SOH, TTB and ETB are not used.
Message Length	Variable length, maximum of 128 characters (including STX and ETX).
Electrical Interface	EIA RS-232C electrical standard interface
Signal Form	EIA RS-404
Interface Distance	Maximum of 50 feet between the NEAX and the PMS when not using a modem.
Word Framing	10 bits (1 start, 7 data, 1 parity, 1 stop) or 11 bits (1 start, 7 data, 1 parity, 2 stop)

The control codes used for the message texts are:

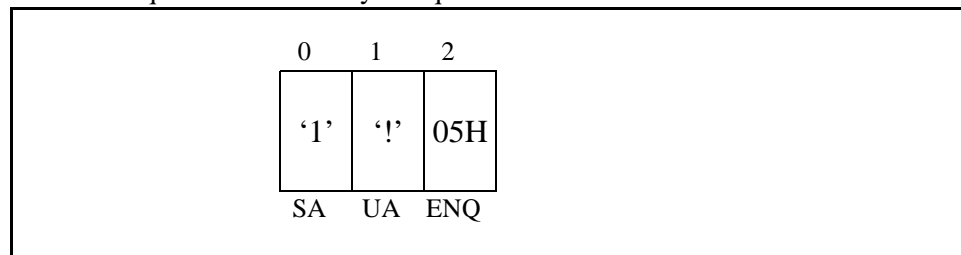
**Table 2-2 Control Codes**

Control Code	Hexadecimal Value	Function
STX	02	Indicates the start of a block.
ETX	03	Indicates the end of a block.
EOT	04	Indicates the end of transmission of a block or release of the data link by the sender.
ENQ	05	Used to query other party for expected response.
ACK	06	Indicates the positive acknowledgment of an information block or start sequence.
NAK	15	Indicates the negative acknowledgment of an information block or start sequence.
DLE <	10, 3C	Indicates the receiver interrupting to ask for sending rights.
DLE :	10, 7C	Indicates the receiver interrupting to ask the sender to stop transmission and to release the data link.
DLE ?	10, 3F	Used as the negative acknowledgment of block and indicates that the receiver temporarily cannot receive data from the sender.

## Transmission Protocol

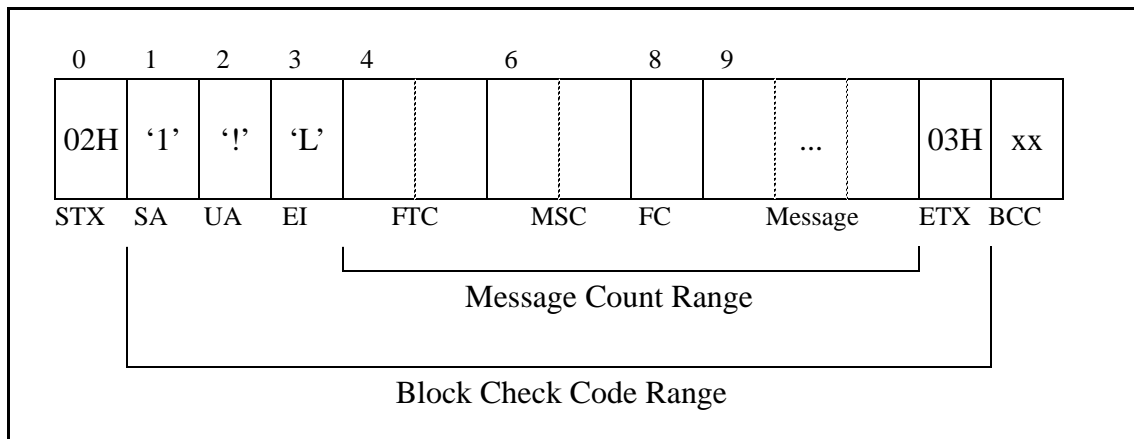
Before a message can be sent, a start sequence (also called a selecting sequence) must be sent to urge the receiver to receive the data. Every transmission sequence will begin with the sender sending a start sequence.

The start sequence is a three byte sequence:



**Figure 2-1 Start Sequence**

The messages (but not the control codes or start sequence) sent between the NEAX and the PMS must have header and trailing sections as defined in the following format:



**Table 2-3 Base Message Format**

The message format breaks down as follows:

- STX -- Start of text block. (One byte - 02H.)
- SA -- System Address. (One byte - '1' [31H].)
- UA -- I/O Unit Address. (One byte - '!' [21H].)
- EI -- Entry Index. (One byte - 'L' [4CH].)
- FTC -- Feature Code. (See below.) A list is provided in [Appendix C, "Feature Codes"](#).
- MSC -- Message Counter. This represents the length of the message. The count of characters starts at the FTC field and ends at the last character of the body of the message, not including the ETX. If the ETX character does not immediately follow the character specified by the message counter, an invalid message is assumed.
- FC -- Function Code. This specifies the individual operation and processing for the feature designated by the Feature Code (FTC). A list is provided in [Appendix D, "Function Codes"](#).
- ETX -- End of text block. (One byte - 03H.)
- BCC -- Block Check Code. This is computed by an exclusive OR of the message from the SA to the ETX (inclusive). Detection of an STX starts the computation (but the STX is not included). Detection of an ETX stops the computation (and the ETX is included). (One byte.)

Feature Codes range in value from 00 to FF (hex). These codes define the "Major Category Codes" for service features.

Codes from 80 to FF are used as "Violation Codes". When a specific message received from the PMS cannot be processed for some reason, 80 (hex) is added to the received Feature Code so that it will be handled as a Violation Code. If the NEAX regards a text as a Violation Code, the system data of the NEAX may be assigned so that a text of this type is returned to the PMS. Therefore, when the PMS has received a Violation Code, provisions should be made for the PMS to print out this violation.



A Violation Code message will be sent to the PMS in the following cases:

- When the message counter does not match the number of characters received.
- When a station number not existing in the NEAX is specified in the message data from the PMS.
- Upon receipt of an invalid Wake Up time (e.g. 25:00).

## Transmission Sequence

The sequence of transmitting a message is slightly different for the PMS and NEAX. However, both sequences follow the same outline.

The party which desires to send must first bid for sender rights. This is done by sending the start sequence (see [Figure 2-1](#)). Once the start sequence has been sent and acknowledged, that party is now the “sender” and the other party is the “receiver”. (Unless both parties have simultaneously sent a start sequence. If this occurs, the PMS must relinquish sending rights to the NEAX.) The receiver must then respond with an answer control code (ACK, NAK, DLE <, DLE :, DLE ?) before the Sender Timer (see “[Sender Timer](#)” on page 10) expires.

If no answer control code is received, the sender will resend the start sequence and again wait for an answer control code.

When an answer control code is received, the sender must respond before the Receiver Timer (see “[Receiver Timer](#)” on page 10) expires. If the answer control code is an ACK, the sender must send the message. Again, the receiver must respond with an answer control code before the Sender Timer expires.

To finish the transmission sequence (regardless of its success), the sender must send an End Code (EOT) to release sending rights. Once that is done, both parties may begin the process over again by bidding for the sender rights.

In the transmission sequence figures that follow, these message names are used:

**Table 2-4 Message Names**

Name	Control Code	Explanation
<b>Start Sequence</b>	SA, UA, ENQ	Bid for sender rights
<b>Message</b>	STX, ..., ETX, BCC	Actual message sent
<b>Query</b>	ENQ	Query for expected answer control code
<b>End Code</b>	EOT	Release sender rights
<i>Accept</i>	ACK	Positive acknowledgment
<i>Reject</i>	NAK	Negative acknowledgment
<i>No Answer</i>	<Nothing>	Timer expired before an answer control code was received
<i>Contention</i>	Start Sequence	Simultaneous start sequences
<i>Interrupt</i>	DLE <	Request to release sender rights
<i>Abort</i>	DLE :	Demand to release sender rights
<i>Pause</i>	DLE ?	Receiver’s queue full; please wait

From the NEAX to the PMS

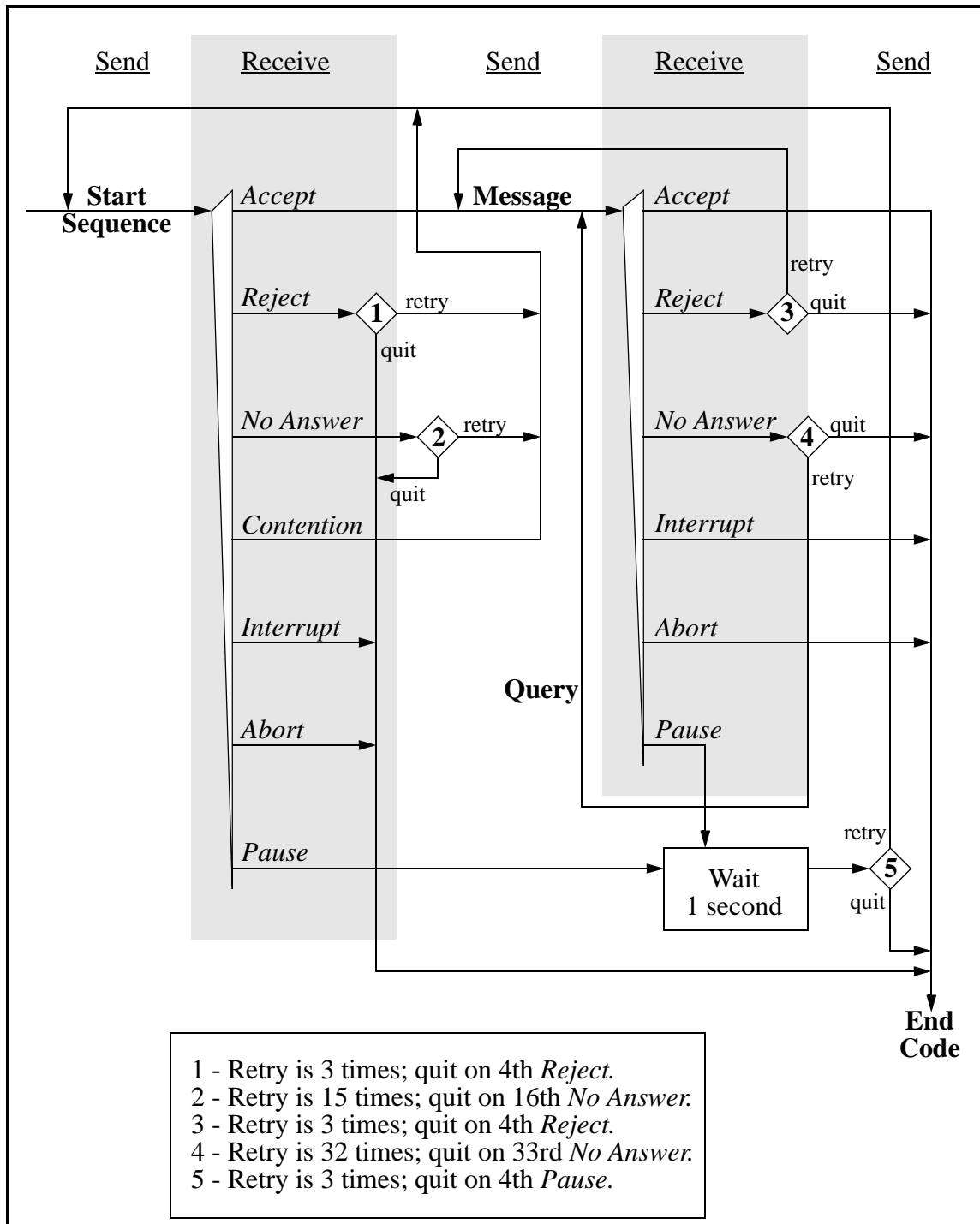


Figure 2-2 NEAX to PMS Protocol

From the PMS to the NEAX

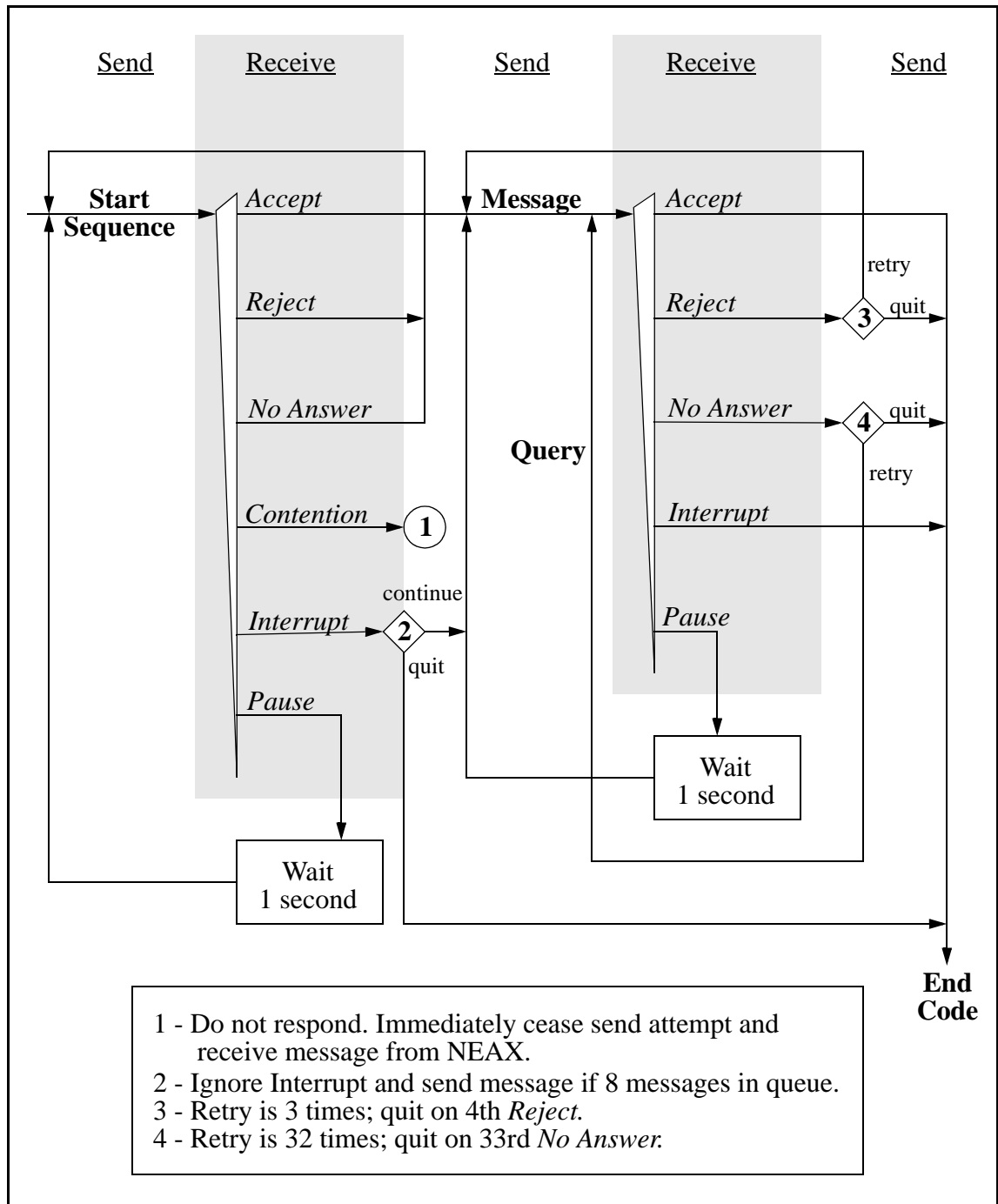


Figure 2-3 PMS to NEAX protocol

**Timers**

The following timers are used to maintain data transmission:

**Sender Timer**

Upon sending a start sequence, message text or query, this timer begins counting and stops counting upon receiving a valid answer control code. This timer is set to one (1) second. If a timeout occurs after the transmission of a start sequence, a start sequence will be resent up to 15 times. If a timeout occurs during the transmission of a message text or query, a query is sent up to 32 times.

**Receiver Timer**

Upon transmission of a positive acknowledgment for a start sequence or a message text, this timer begins counting and stops counting upon receiving a message text or an end code. This timer is set to 35 seconds. If a timeout occurs, the sender loses send rights.

**Cabling Considerations**

When the PMS is connected to the NEAX through a modem, the cables should just be “straight through” cables. There should be no crossing.

When the PMS is directly connected to the NEAX, use the following pin assignments:

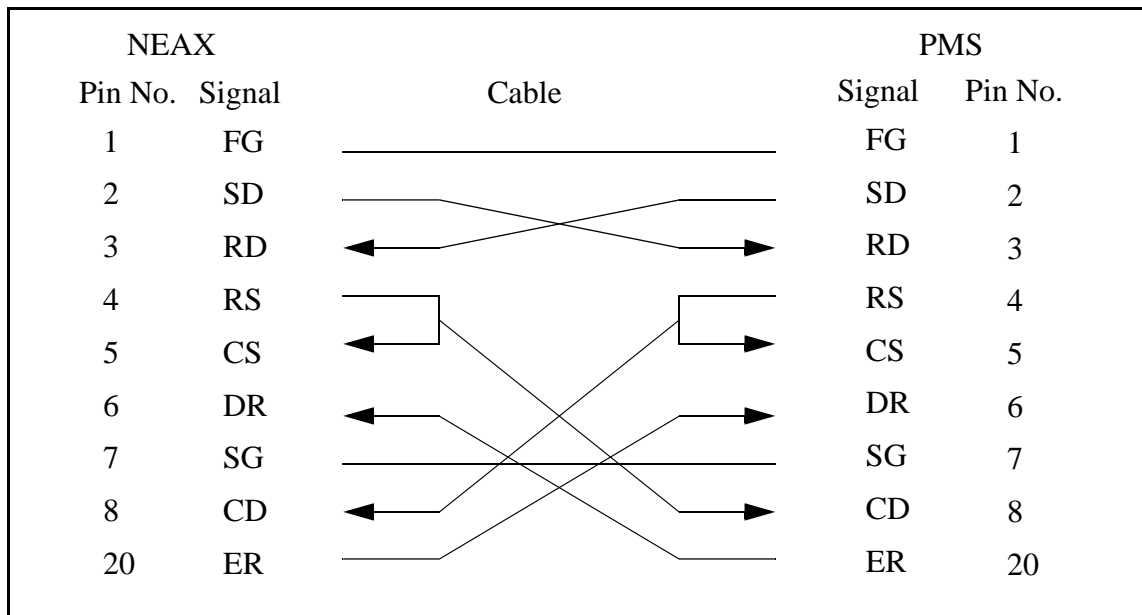


Figure 2-4 Direct Connection Pin Assignments

**Bisynchronous (BSC) Transmission**

**Line Control Characteristics**

The characteristics of the signals transmitted across the communications link are as follows:

Table 2-5 Line Control Characteristics

Item	Conditions
Control Method	Contention method (point to point)
Operating Mode	Half duplex (if modems are used, set to full duplex)
Synchronization	Synchronous
Data Rate	4800 or 9600 bits/second (bps)
Frame Contents	EBCDIC
Error Control Method	CRC-16 ( $X^{16} + X^{15} + X^2 + 1$ )
Bit Transmission Order	Priority is given to low order bits
Transmission Intervals	At each data generation. When a stream of information is transmitted to the NEAX continuously, an interval of 0.5 seconds or more should be given between messages. Each message must be delimited by the EOT code.
Priority Sequence	Primary office: NEAX Secondary Office: PMS
Transfer Mode	Non-transparent mode
Message Composition	One message constitutes one record; SOH, ITB and ETB are not used. Only the non-transparent mode is used.
Message Length	Variable length, maximum of 128 characters (including STX and ETX).
Electrical Interface	RS-232C electrical standard interface
Signal Form	RS-404
Interface Distance	50 feet
Word Framing	10 bits or 11 bits

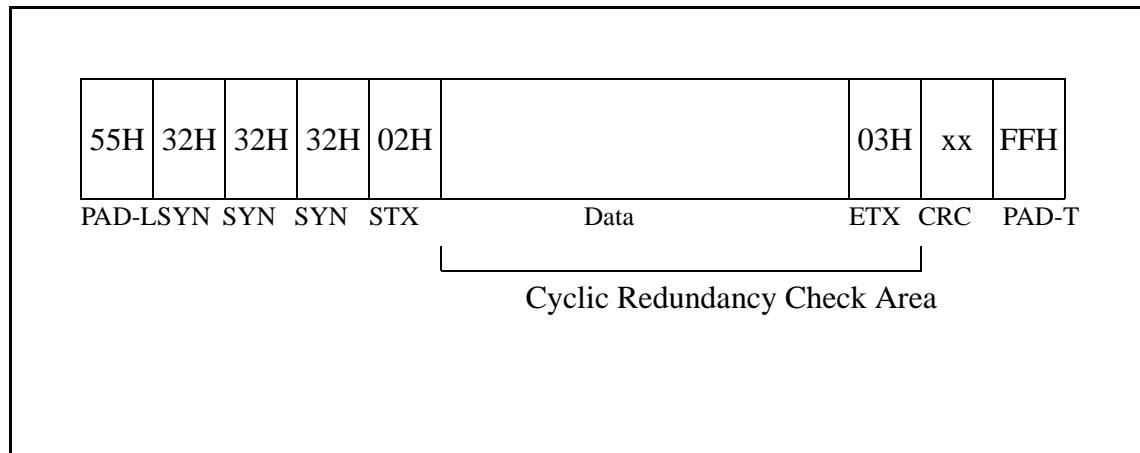
The control codes used for the message texts are:

**Table 2-6 Control Codes**

Control Code	Hexadecimal Value	Function
SYN	32	Synchronization code.
STX	02	Indicates the start of a block.
ETX	03	Indicates the end of a block.
ENQ	2D	Used as the start sequence code. It indicates a reception request to the other side and a request to answer an information block just sent.
EOT	04	Indicates the end of transmission of a block or release of the data link by the sender.
ACK0	10, 70	Used alternately, these indicate the positive acknowledgment of an information block or a start sequence.
ACK1	10, 61	
NAK	3D	Indicates the negative acknowledgment of an information block or a start sequence.
WACK	10, 6B	Used as the positive acknowledgment of an information block or start sequence and indicates that the receiver temporarily cannot receive data from the sender.
TTD	02, 2D	Indicates that the sender cannot transmit the next information block after the receipt of the answer to the previous information block sent from the receiver.
RVI	10, 7C	Indicates the positive acknowledgment of an information block and asks the sender for sending rights.
PAD-L	55	Indicates the absolute beginning of the entire information block.
PAD-T	FF	Indicates the absolute ending of the entire information block.

## Transmission Protocol

The messages sent between the NEAX and the PMS must have header and trailing sections as defined in the following format:

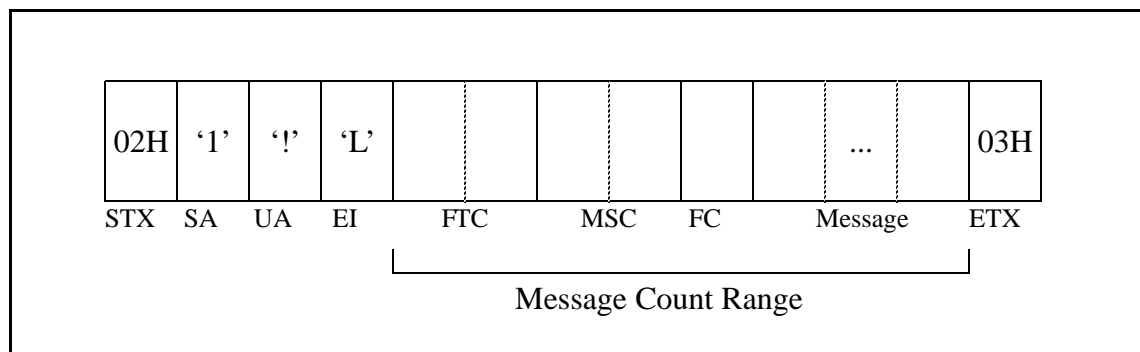


**Figure 2-5 Base Message Format**

The elements of the message is as follows:

- PAD-L -- The leading pad character. (One byte - 55H.)
- SYN -- Synchronization character. At least three of these should be transmitted. (One byte each - 32H.)
- STX -- Start of text block. (One byte - 02H.)
- Data -- The message data is describe below in [Figure 2-6](#).
- ETX -- End of text block. (One byte - 03H.)
- CRC-- Cyclic Redundancy Check. This is computed by an exclusive OR of the message from the SA to the ETX (inclusive). Detection of an STX starts the computation (but the STX is not included). Detection of an ETX stops the computation (and the ETX is included). (One byte.)
- PAD-T -- The trailing pad character. (One byte - FFH.)

The message data is defined as follow:



**Figure 2-6 Message Data Format**

The message format breaks down as follows:

- STX -- Start of text block. (One byte - 02H.)
- SA -- System Address. (One byte - '1' [31H].)
- UA -- I/O Unit Address. (One byte - '!' [21H].)
- EI -- Entry Index. (One byte - 'L' [4CH].)
- FTC -- Feature Code. (See below.) A list is provided in [Appendix C, "Feature Codes"](#).
- MSC -- Message Counter. This represents the length of the message. The count of characters starts at the FTC field and ends at the last character of the body of them message, not including the ETX. If the ETX character does not immediately follow the character specified by the message counter, an invalid message is assumed.
- FC -- Function Code. This specifies the individual operation and processing for the feature designated by the Feature Code (FTC). A list is provided in [Appendix D, "Function Codes"](#).
- ETX -- End of text block. (One byte - 03H.)

Feature Codes range in value from 00 to FF (hex). These codes define the "Major Category Codes" for service features.

Codes from 80 to FF are used as "Violation Codes". When a specific message received from the PMS cannot be processed for some reason, 80 (hex) is added to the received Feature Code so that it will be handled as a Violation Code. If the NEAX regards a text as a Violation Code, the system data of the NEAX may be assigned so that a text of this type is returned to the PMS. Therefore, when the PMS has received a Violation Code, provisions should be made for the PMS to print out this violation.

A Violation Code message will be sent to the PMS in the following cases:

- When the message counter does not match the number of characters received.
- When a station number not existing in the NEAX is specified in the message data from the PMS.
- Upon receipt of an invalid Wake Up time (e.g. 25:00).



## Transmission Sequence

Table 2-7 Data Transmission Sequence (1 of 2)

Status	ENQ	STX	ETX, CRC	ACK0/ ACK1	NAK
Neutral (A)	a: ACK0 -> (B) b: NAK -> (A) c: ENQ -> (D)				
Waiting for STX (B)	(ACK last received) -> (B)	-> (C)			
Waiting for ETX, CRC (C)	f: NAK -> (B) g: EOT -> (A)		h: ACK0/1 i: NAK c: RVI j: EOT -> (A)		
Waiting for ACK after start sequence (D)	f: ENQ -> (D) g: EOT -> (A)	d: ENQ -> (D) e: EOT -> (A)	d: ENQ -> (D) e: EOT -> (A)	Message -> (E) j: EOT -> (A)	f: ENQ -> (D) g: EOT -> (A)
Waiting for ACK after message (E)	d: ENQ -> (D) e: EOT -> (A)	d: ENQ -> (D) e: EOT -> (A)	d: ENQ -> (D) e: EOT -> (A)	k: Message -> (E) l: EOT -> (A)	m: Mes- sage -> (E) j: EOT -> (A)

Table 2-8 Data Transmission Sequence (2 of 2)

Status	EOT	TTD	WACK	(Timeouts)	(Transmission Request)
Neutral (A)					ENQ -> (D)
Waiting for STX (B)	-> (A)	d: NAK -> (B) e: EOT -> (A)		EOT -> (A) (25 sec)	
Waiting for ETX, CRC (C)	-> (A)			EOT -> (A) (25 sec)	
Waiting for ACK after start sequence (D)	-> (A)	d: ENQ -> (D) e: EOT -> (A)	d: ENQ -> (D) e: EOT -> (A)	f: ENQ -> (D) g: EOT -> (A)	
Waiting for ACK after message (E)	-> (A)	d: ENQ -> (D) e: EOT -> (A)	d: ENQ -> (D) e: EOT -> (A)	f: ENQ -> (D) g: EOT -> (A) (3 sec)	

## Notes:

- a: Preparation for reception complete.
- b: Reception impossible.
- c: Requests for preparation for reception (the PMS should not request this).
- d: Transmitted up to 21 times.
- e: Aborted at 22nd time.
- f: Transmitted up to 7 times.
- g: Aborted on the 8th time.
- h: Message is received normally and preparation for next reception is complete.
- i: Error found in message.
- j: Interruption.
- k: Information to be transmitted is present.
- l: Information to be transmitted is absent.
- m: Retransmission of message.

Timers and  
Counters

## Retransmission Counts

Table 2-9 Retransmission Counts

Meaning	Count
The number of retransmissions of the start sequence when there is no answer after transmitting the start sequence.	7
The number of retransmissions of the start sequence when NAK is received after transmitting the start sequence.	7
The number of transmitting ENQs when WACK is received after the transmission of an information block	15
The number of transmitting ENQs when there is no answer after the transmission of an information block. (3 second intervals)	7

## Timer Values

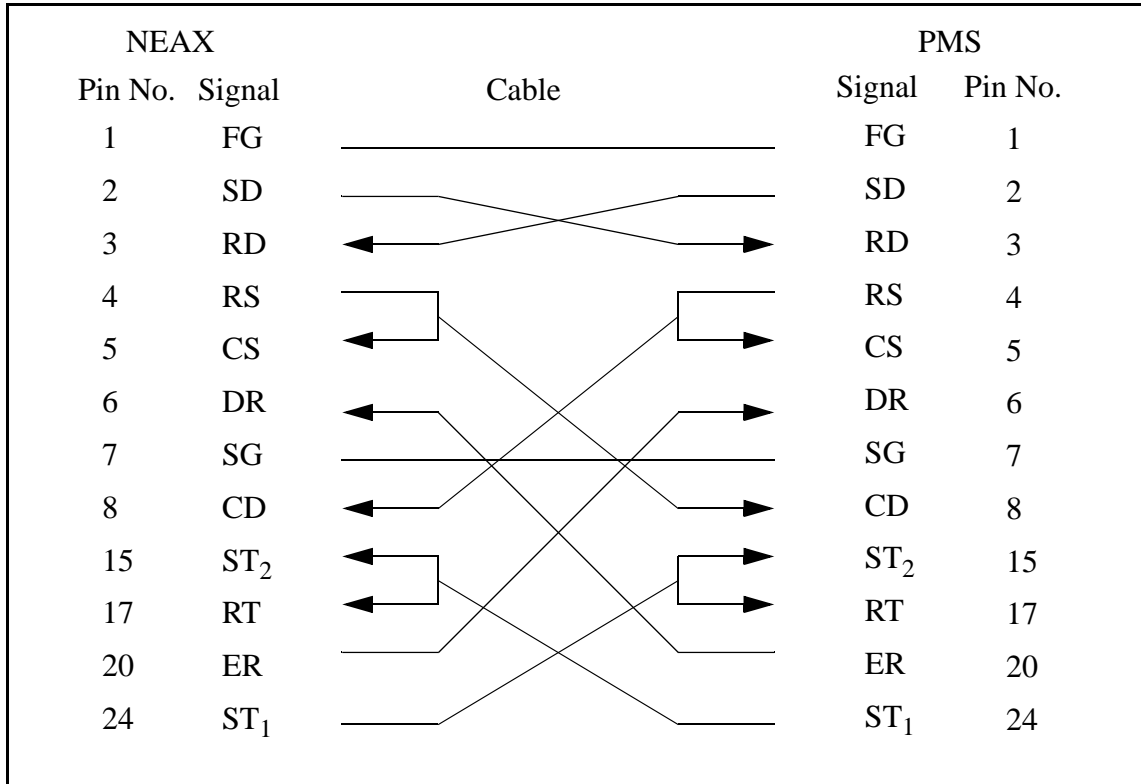
Table 2-10 Timer Values

Party	Starting Condition	Timer value (seconds)
NEAX	Waiting for a start sequence answer.	1
	Waiting for STX after transmitting the start sequence ACK.	20
	Waiting for data reception complete (waiting for ETX, CRC).	20
	Waiting for an answer after the transmission of a message.	1
PMS	Waiting for a start sequence answer.	3
	Waiting for STX after transmitting the start sequence ACK.	25
	Waiting for data reception complete (waiting for ETX, CRC).	25
	Waiting for an answer after the transmission of a message.	3

**Cabling Considerations**

When the PMS is connected to the NEAX through a modem, the cables should just be “straight through” cables. There should be no crossing.

When the PMS is directly connected to the NEAX, use the following pin assignments:



**Figure 2-7 Direct Connection Pin Assignments**

## Chapter 3 Message Descriptions

There are several message groups:

- Data Link Maintenance Messages
- Maid Status
- Message Waiting Lamp Control
- Restriction Control
- Check In/Check Out (Model 60)
- Check In/Check Out (Model 90)
- Wake Up/Group Announcement
- Room Move/Swap/Copy (Model 60)
- Room Data Change
- Extension Report
- Room Recovery (Model 60)
- Room Recovery (Model 90)
- Direct Data Entry (Model 90)
- Extension Connection

Each message group will be described briefly in the following sections.

The NEAX equates rooms with extensions, one extension per room. The exception to this is the suite room feature. When this feature is activated in the NEAX, a primary extension represents a group of extensions in one or more rooms. For a suite room, the PMS should reference only the primary extension in its messages to the NEAX. All associated extensions will inherit the attributes of the primary extension and should effectively be ignored by the PMS.

### Data Link Maintenance

These are the messages used by the PMS and NEAX to maintain communication.

The PMS must regularly send Nop Test messages with an interval of no more than 60 seconds, and no less than 500 milliseconds, between each message. The NEAX will immediately respond with either a Nop Test Normal Answer, under normal conditions, or a Nop Test Recover Answer, if a database recovery for the NEAX is needed.

- Nop Test Normal Answer -- Whenever a Nop Test message is sent by the PMS, the NEAX responds by sending this message, unless the NEAX has just finished an error recovery.
- Nop Test Recover Answer -- If the NEAX has been performing an error recovery, this message is sent in response to the Nop Test in the place of the Nop Test Normal Answer message.

- Recovery Start Report -- After receiving the Nop Test Recover Answer message, the PMS must download NEAX database information (see “[Room Recovery \(Model 60\)](#)” on page 27 and “[Room Recovery \(Model 90\)](#)” on page 28). This message notifies the NEAX of the incoming download.
- Recovery End Report -- Reports to the NEAX that the PMS database download is complete.
- Data Link Release Request -- Used by either system to request a temporary release of the data link.
- Data Link Release Confirmation -- Reply to the above message to acknowledge data link release request.
- Extension Number Request -- Used by the PMS to request the current status of extension numbers.
- Nop Test -- Under the standard protocol the PMS must send this message at least every 60 seconds, but not less than 500 milliseconds, to demonstrate that communication has been maintained.

## Data Link Failure

Either system may recognize a loss of communication by one or more of the following events:

- Lack of system traffic for a 60 second interval: the Nop Test message from the PMS and the Nop Test Answer message (either Normal or Recover) from the NEAX insure that at least one message should be received less than every 60 seconds.
- Detection of hardware problems within the physical data. Note that the NEAX will put EIA pin number 6 (Data Set Ready) into the off state, indicating data set not ready, when the data link has been effectively turned off in the NEAX, either for maintenance or because of repeated, excessive errors.
- Excessive protocol errors (NAK'ed transmission, ENQ's with no ACK/NAK response).
- Other conditions, such as unavailability of buffers or queuing capability, which result in an implied status change message which cannot be communicated to the other system.
- Release of the data link requested and confirmed.

A data link failure will necessitate a database room exchange recovery procedure only if any implied status change cannot be communicated to the other system and cannot be queued for later transmission. If no messages have been lost, and can instead be retransmitted, no database recovery is necessary.

**Release for Maintenance**

Either system may request a temporary release of the data link for maintenance purposes by transmitting a Data Link Release Request message to the other system. The receiving system will perform any necessary processing and return the Data Link Release Confirmation message as soon as possible.

During the NEAX maintenance, the PMS may continue to send Nop Test messages, provided that EIA pin 6 (Data Set Ready) from the NEAX is in the “on” condition. The NEAX will turn on the EIA pin 6 “on” and respond to Nop Test messages when maintenance is completed.

While the data link is release on request of the PMS, the NEAX will continue to attempt to read Nop Test messages from the PMS. The PMS may set EIA pin 20 (Data Terminal Ready) to the “off” condition to indicate that reading should not be attempted.

When EIA pin 20 is in the “on” state and a Nop Test message is received from the PMS, the NEAX will assume that PMS maintenance has ended and that communication can be resumed.

**NEAX Operations During Loss of Communication**

The NEAX will continue to support the basic telecommunications functions if the data link or PMS become unavailable. Upon detection of a data link failure, the NEAX will automatically switch to the “Link Failed Mode” to perform the following tasks:

- Enable Check In and Check Out on the Attendant Console and Front Desk Terminal.
- Continue support of Message Waiting and/or Controlled Restriction if both features are active in the NEAX.

**Recovery from Loss of Communication**

In the event of a PMS failure, it is assumed that Check In and Check Out must be done manually and entered into the PMS system at a later time. The PMS should not resume transmission of the Nop Test message and attempt to reestablish communication until the database has been brought up to date. This prevents the transmission of incorrect data prematurely through the database recovery procedure.

In cases where the PMS has remained operational during a data link failure, the PMS will continue to attempt sending Nop Test messages. A Nop Test Answer message (either Normal or Recover) from the NEAX will indicate that communication has been reestablished.

A Nop Test Normal Answer message indicates that the NEAX has had no status change during the data link failure period and has automatically switched back to the normal operating mode of an active data link.

A Nop Test Recover Answer message indicates that the NEAX has failed and that status memory has been initialized for each room with the following:

- Room Status is Occupied (Checked In),
- Controlled Restriction Level is set to the preassigned restriction,
- Message Waiting Lamps are off,
- Wake Up times are cleared.

## Maid Status

These messages are used by the NEAX to communicate the actions of the cleaning personnel. If the message is designated "Model 90" then that message is only used by the Model 90 version. The other messages are used by both versions.

- Cleaning Start (Guest)
- Cleaning End (Guest)
- Inspection End (Guest)
- Out of Order (Guest)
- Cleaning Start (Administration)
- Cleaning End (Administration)
- Inspection End (Administration)
- Guest Room 1 (Model 90)
- Guest Room 2 (Model 90)
- Guest Room 3 (Model 90)
- Guest Room 4 (Model 90)
- Guest Room 5 (Model 90)
- Guest Room 6 (Model 90)
- Guest Room 7 (Model 90)

**Note:** *This message was not previously defined in NEAX2400 IMS Hotel System PMS Interface Specification.*

- Negative Answer (Model 90)
- Positive Answer (Model 90)
- Administration 1 (Model 90)
- Administration 2 (Model 90)
- Administration 3 (Model 90)
- Administration 4 (Model 90)

For an expanded explanation of how the NEAX treats maid status information, refer to [Appendix A, "Room Status"](#).



## Message Waiting Lamp Control

These messages are used to control the message waiting lamp on an extension. The message waiting lamp is used to notify a guest about the existence of text messages. If the message is designated "Model 90" then that message is only used by the Model 90 version. The other messages are used by both versions.

When the NEAX is configured to use the suite room feature, the primary extension represents all extensions in that suite. Therefore, a message set to the primary extension controls the message waiting lamps on all extensions in that suite.

- MWL On -- This message is sent by the PMS to turn on a message waiting lamp.
- MWL Off -- This message is sent by the PMS to turn off a message waiting lamp.
- MWL On -- This message is sent by the NEAX to notify the PMS that a message waiting lamp has been turned on.
- MWL Off -- This message is sent by the NEAX to notify the PMS that a message waiting lamp has been turned off.
- MWL Status -- This message is sent by the PMS. (Model 90)
- MWL On (FDT) -- This message is sent by the NEAX to notify the PMS that a message waiting lamp has been turned on by the front desk. (Model 90)
- MWL Off (FDT) -- This message is sent by the NEAX to notify the PMS that a message waiting lamp has been turned off by the front desk. (Model 90)

## Restriction Control

There are two messages. They are identical except that one is originated by the PMS, the other by the NEAX. Each message simply transmits the restriction code. Both the Model 60 and the Model 90 version use these messages.

## Check In/Check Out (Model 60)

These messages do not represent unique features as such, but are a convenient tool for activating a sequence of functions commonly performed when a guest checks in or out of a room. With one exception, all of these messages are used exclusively for Model 60. The sole exception is Check Out Outgoing Call Report, which is also used by Model 90.

When the NEAX is configured to use the suite room feature, the primary extension represents all extensions in that suite. Therefore, a message set to the primary extension controls the status of all extensions in that suite.

- Check In 1 -- Sets the Room Status to Stay and cancels Room Cut-Off. This message is sent by the PMS. This message should not be used. Use Check In 3 instead.
- Check Out -- Sets the Room Status to Out and sets Room Cut-Off. This message is sent by the PMS.

- Check Out Message Waiting Lamp Off Report -- This message is sent by the NEAX to report that the Message Category “Front” of that specific guest room is Off.
- Check Out Message Waiting Lamp On Report -- This message is sent by the NEAX to report that the Message Category “Front” of that specific guest room is On.
- Check In 2 -- Same as Check In 1, but also sets the Language and Room Stay. This message should not be used. Use Check In 3 instead.
- Check In 3 -- Same as Check In 2, but also sets the Guest Name and Group Number.
- Check Out Outgoing Call Report -- The NEAX sends this message if, after receiving a check out message from the PMS, it determines that the guest extension is engaged in an outgoing call.
- Check Out Message Waiting Report -- This message is generated by the NEAX to report the status of waiting messages.

## Check In/Check Out (Model 90)

These messages do not represent unique features as such, but are a convenient tool for activating a sequence of functions commonly performed when a guest checks in or out of a room. All of these messages are used exclusively for Model 90. There is also the addition of the Check Out Outgoing Call Report message which is technically a Model 60 message, but is available for Model 90.

When the NEAX is configured to use the suite room feature, the primary extension represents all extensions in that suite. Therefore, a message set to the primary extension controls the status of all extensions in that suite.

- Check In -- This message is sent by the PMS to notify the NEAX of a check in. This cancels Room Cut-Off.
- Check Out -- This message is sent by the PMS to notify the NEAX of a check out.
- Check In Cancellation -- This message is sent by the PMS. It cancels a previously sent check in message. The room status is set to “Vacant.”
- Check Out Cancellation -- This message is sent by the PMS. It cancels a previously sent check out message. Under some circumstances the NEAX may fail to perform this function which means that the guest must be checked in again.
- Room Change -- This message is sent by the PMS to notify the NEAX of a guest room change.
- Provisional Check In -- This is a provisional check in message generated by the NEAX. The room status is set to “Stay” and Room Cut-Off is cancelled.
- Provisional Check Out -- This is a provisional check out message generated by the NEAX. If maid status is not performed, room status is set to “Vacant;” if maid status is performed, room status is set to “Out.”
- Check Out Message Waiting Report -- This message is generated by the NEAX upon receiving a check out message to report the status of waiting messages.

## Wake Up/Group Announcement

These messages allow for the management of wake up calls and group announcements. Both the Model 60 and the Model 90 version use these messages.

- Wake Up Setting (NEAX) -- This message is sent by the NEAX to notify the PMS that a wake up call has been set.
- Wake Up Cancellation (NEAX) -- This message is sent by the NEAX to notify the PMS that a wake up call has been cancelled.
- Wake Up Execution Result -- This message is sent by the NEAX to report the results of the wake up call.
- Wake Up Setting(PMS) -- This message is sent by the PMS to set a wake up call.
- Wake Up Cancellation (PMS) -- This message is sent by the PMS to cancel a wake up call.
- Group Announcement Setting (NEAX) -- This message is sent by the NEAX to notify the PMS that a group announcement has been set.
- Group Announcement Cancellation (NEAX) -- This message is sent by the NEAX to notify the PMS that a group announcement has been cancelled.
- Group Announcement Execution Result -- This message is sent by the NEAX to report the results of a group announcement.
- Group Announcement Setting (PMS) -- This message is sent by the PMS to set a group announcement.
- Group Announcement Cancellation (PMS) -- This message is sent by the PMS to cancel a group announcement.

## Room Move/Swap/Copy (Model 60)

These messages are used to transfer room information. All of these messages are used exclusively for Model 60. The messages are:

- Room Move -- This takes the data for one room and moves it to another room. This will leave the second extension's maid status unchanged, cancels Room Cut-Off and sets all other data to that of the first extension. The first extension's maid status is set to '1', Room Cut-Off is set, Do Not Disturb and Message Waiting is reset, Wake Up is cancelled, Language is set to "Undefined" and Guest Name and Group Number are cleared.
- Room Swap -- This takes the data for one room and moves it to another room, while taking the other room's data and moving it to the first room.
- Room Copy -- This exactly copies the data for one room to another room without changing the data for the first room. The PMS should take care to be consistent in the manner in which this message is used. If the PMS sends a Room Copy message after check in, it should send a Room Copy message after check out.

## Room Data Change

These messages are used to change the room information while a guest is still checked in. Messages designated “Model 60” are only used by the Model 60 version; “Model 90” are only used by the Model 90 version. Messages with neither designation may be used by either version. The messages are as follows:

- Room Data Change 60 -- This is used to change room data after check in. This message is sent by the PMS. (Model 60)
- Group Formation -- This is used when adding a guest to a group or changing a guest’s group after check in. This message is sent by the PMS.
- Group Cancellation -- This is used to remove a guest from a group after check in. This message is sent by the PMS.
- Reservation Setting -- This is used to set reservation for a guest room. The reservation information is cleared by check in processing or when the room status becomes “Vacant” or “Out of Order”. (Model 60)
- Reservation Cancellation -- This cancels guest room reservation. (Model 60)
- Guest Name Change -- This is used to change the guest name after check in. This message is sent by the PMS. (Model 60)
- Room Data Change 90 -- This is used to change room data after check in. This message is sent by the PMS. (Model 90)
- Room Status Change -- This is used to change the room status and/or the cleaning status of the room after check in. This message is sent by the PMS. (Model 90)
- Room Key Status Change -- This is used to change the room key status after check in. This message is sent by the PMS. (Model 90)

## Extension Report

These messages are used by the NEAX to report to the PMS when an extension has been removed or a new extension has been added. Both the Model 60 and the Model 90 version use these messages.

## Room Recovery (Model 60)

These messages are used by the PMS to update the database in the Model 60 version. These messages will usually only be sent if requested by the NEAX using the Nop Test Recover Answer message. However, the PMS may, if necessary, initiate a recovery with a direct request from the NEAX.

Before any recovery messages can be sent, the PMS must first send a Recovery Start Report message. After all information about rooms has been sent by recovery messages, a Recovery End Report message must be sent. Both of these messages are defined in the Data Link Maintenance section.

The recovery messages are grouped into three sets of four messages. Within each set of four messages, the format of the messages is identical, except for the Function Codes, which specify the message. Each set of messages contains more fields (and can therefore convey more information) than the preceding set.

Each set of four messages is composed of two pairs of messages. The PMS must use the same set of recovery messages during the recovery period. The first pair of messages is used when the PMS, in normal operation (i.e. not error recovery), needs to update the information on a given extension. The second pair of messages is used during recovery. This pair will only be used in response to the NEAX sending a Nop Test Recover Answer or Recovery Request message.

The first message (of either pair) is used by the PMS as an update/ request for information on an extension. If a field contains a valid entry, the NEAX database is updated; if the field is entirely filled with NULL (00H) characters, it is a request for the NEAX to send the value from the NEAX database. The second message is the response from the NEAX to the PMS.

- Room Image Set 1 -- Contains the following fields: Extension, Vacancy, MWL and Restriction Level.
- Room Image Set 2 -- In addition to the above fields, the following are added: Room Stay, Reserve, Language, Cleaning Status and Wake Up.
- Room Image Set 3 -- In addition to the above fields, Group Number and Group Announcement are added.

## Room Recovery (Model 90)

These messages are used by the PMS to update the database in the Model 90 version after a failure recovery. These messages will usually only be sent if requested by the NEAX using the Nop Test Recover Answer message. However, the PMS may, if necessary, initiate a recovery with a direct request from the NEAX.

Before any recovery messages can be sent, the PMS must first send a Recovery Start Report message. After all information about rooms has been sent by recovery messages, a Recovery End Report message must be sent. Both of these messages are defined in the Data Link Maintenance section.

- Room Data Report -- Once Recovery has been requested by the NEAX, the PMS uses this message to report the data for each room.
- Guest Room Secretary Telephone -- This message is used to recover data for a secretary telephone.
- Connecting Room -- If any rooms are connecting, this message is used to establish the relationship.
- Message Status Report -- This reports the status of the Message Waiting Lamp.
- Wake Up -- Any wake up data is reported by this message.

## Direct Data Entry (Model 90)

These messages are used to send numeric information from the NEAX to the PMS. An employee provides this information by entering an access code at a guest room telephone. Then the NEAX captures all numeric input following the access code and sends the digits to the PMS.

The NEAX expects to receive a response to this message within 30 seconds. If no response is sent, or a Negative Answer is received, a reorder tone will be heard. If a Positive Answer is received, the NEAX will recognize that the information has been entered successfully and the service set tone will be heard.

- Direct Data Entry -- This message is sent by the NEAX and contains the numeric information entered at the guest room telephone.
- Direct Data Entry Negative Answer -- This message is sent by the PMS to notify the NEAX that the numeric data sent from the specified guest room telephone has been rejected.
- Direct Data Entry Positive Answer -- This message is sent by the PMS to notify the NEAX that the numeric data sent from the specified guest room telephone has been accepted.

## Extension Connection

These messages are used to associate extensions. This association will be either in the form of a Boss/Secretary or of a Master/Secondary. In either case, both of the rooms to be connected must be checked in. There may only be one Secretary for each Boss, but a Secretary may be assigned to multiple Bosses. A Master and Secondary may only be assigned on a one to one basis. The effect of the Boss/Secretary association is that whenever the Boss extension is called, only the Secretary extension will ring. In the case of Master/Secondary, whenever the Master extension is called, both the Master extension and the Secondary extension will ring. All of these messages are used exclusively for Model 90.

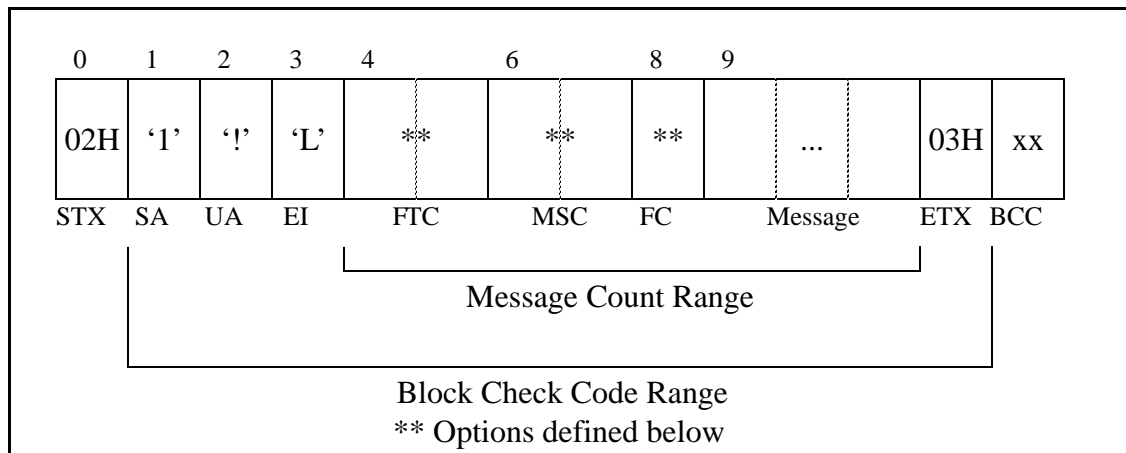
- Guest Room Secretary Telephone (PMS) -- This message is sent by the PMS to set or cancel the guest room telephone.
- Guest Room Secretary Telephone (NEAX) -- This message is sent by the NEAX to notify the PMS that a guest room secretary telephone has been set or cancelled.
- Connecting Room Set -- This message is sent by the PMS to connect a main room with a sub room. This message should only be sent after both rooms have been checked in.
- Connecting Room Cancel -- This message is sent by the PMS to cancel a room connection.

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## Chapter 4 Message Formats

All messages sent between the NEAX and the PMS must have header and trailing sections as defined in the following format:



**Figure 4-1 Base Message Format**

The message format breaks down as follows:

- STX -- Start of text block. (One byte - 02H.)
- SA -- System Address. (One byte - '1' [31H].)
- UA -- I/O Unit Address. (One byte - '!' [21H].)
- EI -- Entry Index. (One byte - 'L' [4CH].)
- FTC -- Feature Code. Used in conjunction with the Function Code to uniquely identify a message. A list of values are included in [Appendix C, "Feature Codes"](#). (Two bytes.)
- MSC -- Message Count. This is the number of bytes from the FTC character up to the character before the ETX. (Two bytes.)
- FC -- Function Code. This entry is dependent on the FTC entry. A list of values are included in [Appendix D, "Function Codes"](#). (One byte.)
- ETX -- End of text block. (One byte - 03H.)
- BCC -- Block Check Code. This is computed by an exclusive OR of the message from the SA to the ETX (inclusive). Detection of an STX starts the computation (but the STX is not included). Detection of an ETX stops the computation (and the ETX is included). (One byte.)

**Note 1:** Unless otherwise noted, if the data to be stored in a message field has fewer characters than the size of the field, all data must be left justified and the remaining characters must be filled with space (20H) characters.

**Note 2:** In the message diagrams, the STX, SA, UA, EI, FTC, MSC, FC and ETX fields will show the actual entries needed. The remaining fields will have the name of the field in the box and the length of the field below. For all fields, the beginning byte number is listed on the top of the field.

**Note 3:** *In the case of messages that are almost identical, the FC will be marked with “\*\*”. Also, differing FTC values will be marked with “\*”. The final message is then constructed by simply inserting the desired FC value (and, if necessary, the desired FTC value).*

All messages in this section have been previously defined in *NEAX2400 IMS Hotel System PMS Interface Specification* (except for one Maid Status message, which is so noted). The versions supported are Model 60 and Model 90; Model 120 messages are not supported. Any message that is intended to work with only one version is so designated; any message that is intended to work with both has no special designation.

The Feature Codes used are as follows:

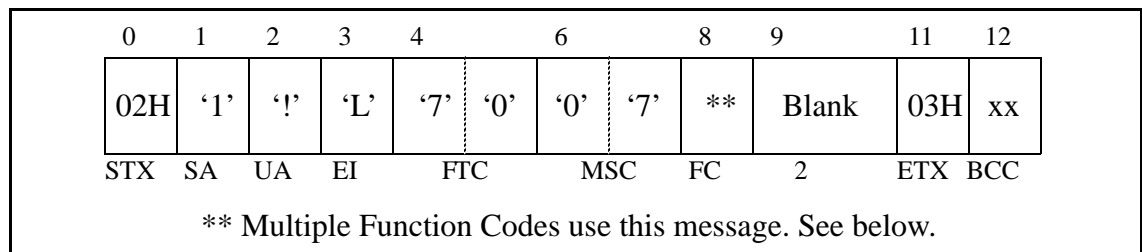
- 70 -- Data Link Maintenance
- 11, 12, 51, 52 -- Maid Status
- 13, 53 -- Message Waiting Lamp Control
- 15 -- Restriction Control
- 16 -- Check-In/Out (Model 60)
- 56 -- Check-In/Out (Model 90)
- 19 -- Wake Up/Group Announcement
- 20 -- Room Move/Swap/Copy (Model 60)
- 21, 61 -- Room Data Change
- 17 -- Extension Report
- 17 -- Room Recovery (Model 60)
- 57 -- Room Recovery (Model 90)
- 59 -- Direct Data Entry (Model 90)
- 62 -- Extension Connection

## Data Link Maintenance

These messages are used by the NEAX and the PMS to maintain the data link between them. The messages are as follows:

- 70-0 -- Nop Test Normal Answer (Sent by NEAX)
- 70-2 -- Nop Test Recover Answer (Sent by NEAX)
- 70-3 -- Recovery Start Report (Sent by PMS)
- 70-4 -- Recovery End Report (Sent by PMS)
- 70-5 -- Data Link Release Request (Sent by PMS and NEAX)
- 70-6 -- Data Link Release Confirmation. (Sent by PMS and NEAX)
- 70-8 -- Extension Number Request (Sent by PMS)
- 70-F -- Nop Test (Sent by PMS)

The format of all Data Link Maintenance messages are exactly as follows:



**Figure 4-2 Data Link Maintenance Message Format**

The message format breaks down as follows:

- FC -- Function Codes that use this message format are: (FTC-FC)
  - 70-0 -- Nop Test Normal Answer
  - 70-2 -- Nop Test Recover Answer
  - 70-3 -- Recovery Start Report
  - 70-4 -- Recovery End Report
  - 70-5 -- Data Link Release Request
  - 70-6 -- Data Link Release Confirmation
  - 70-8 -- Extension Number Request
  - 70-F -- Nop Test
- Blank -- Field consists of two space (20H) characters.

## Maid Status

This message group uses multiple Feature Codes. The code pairs are as follows (first number is the Feature Code, second number is the Function Code):

- 11-1 -- Cleaning Start (Guest)
- 11-2 -- Cleaning End (Guest)
- 11-3 -- Inspection End (Guest)
- 11-4 -- Out of Order (Guest)
- 12-1 -- Cleaning Start (Administration)
- 12-2 -- Cleaning End (Administration)
- 12-3 -- Inspection End (Administration)
- 51-1 -- Guest Room 1 (Model 90)
- 51-2 -- Guest Room 2 (Model 90)
- 51-3 -- Guest Room 3 (Model 90)
- 51-4 -- Guest Room 4 (Model 90)
- 51-5 -- Guest Room 5 (Model 90)
- 51-6 -- Guest Room 6 (Model 90)

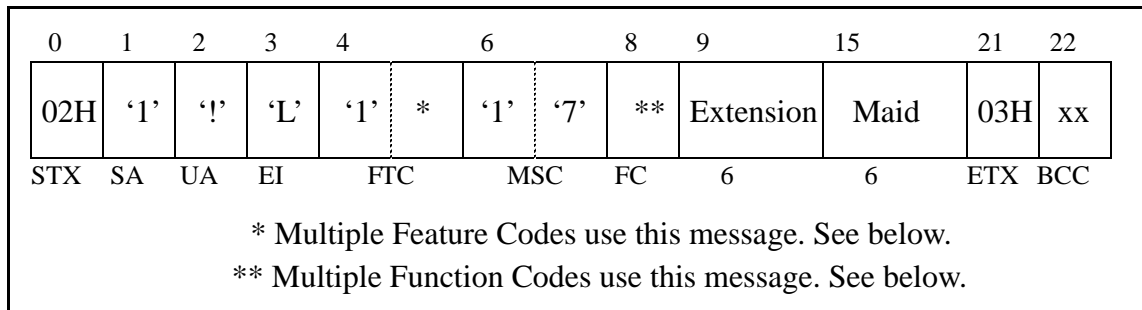
- 51-7 -- Guest Room 7 (Model 90)

**Note:** This message was not previously defined in NEAX2400 IMS Hotel System PMS Interface Specification.

- 51-8 -- Negative Answer (Model 90)
- 51-9 -- Positive Answer (Model 90)
- 52-1 -- Administration 1 (Model 90)
- 52-2 -- Administration 2 (Model 90)
- 52-3 -- Administration 3 (Model 90)
- 52-4 -- Administration 4 (Model 90)

All messages designated “Model 90” are used only by the Model 90 version. The other messages are used by either the Model 60 or the Model 90 version.

### Cleaning

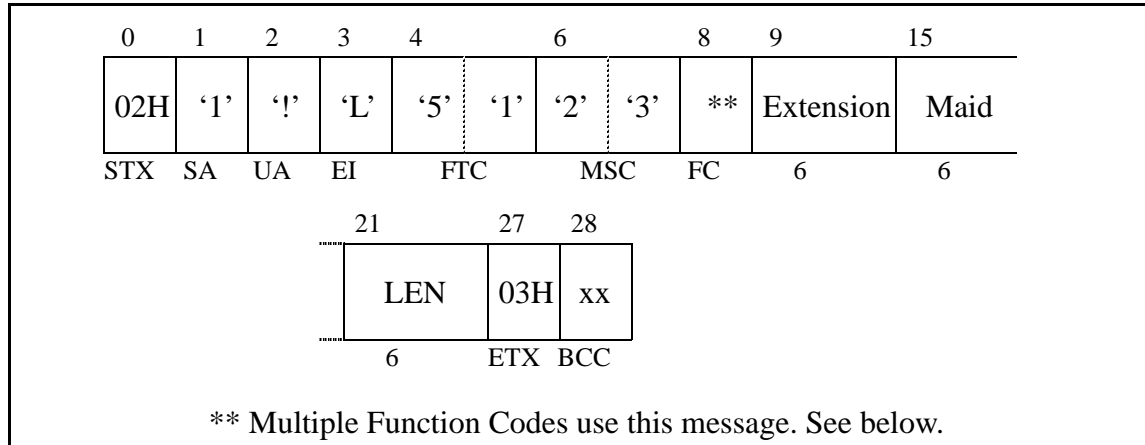


**Figure 4-3 Cleaning (General)**

Message fields are:

- FTC -- Feature Codes that use this message format are: 11 and 12.
- FC -- Function Codes that use this message format are: (FTC-FC)
  - 11-1 -- Cleaning Start (Guest)
  - 11-2 -- Cleaning End (Guest)
  - 11-3 -- Inspection End (Guest)
  - 11-4 -- Out of Order (Guest)
  - 12-1 -- Cleaning Start (Administration)
  - 12-2 -- Cleaning End (Administration)
  - 12-3 -- Inspection End (Administration)
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Maid -- Identification number of the maid. If the maid identification number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

## Guest Room



**Figure 4-4 Guest Room (General)**

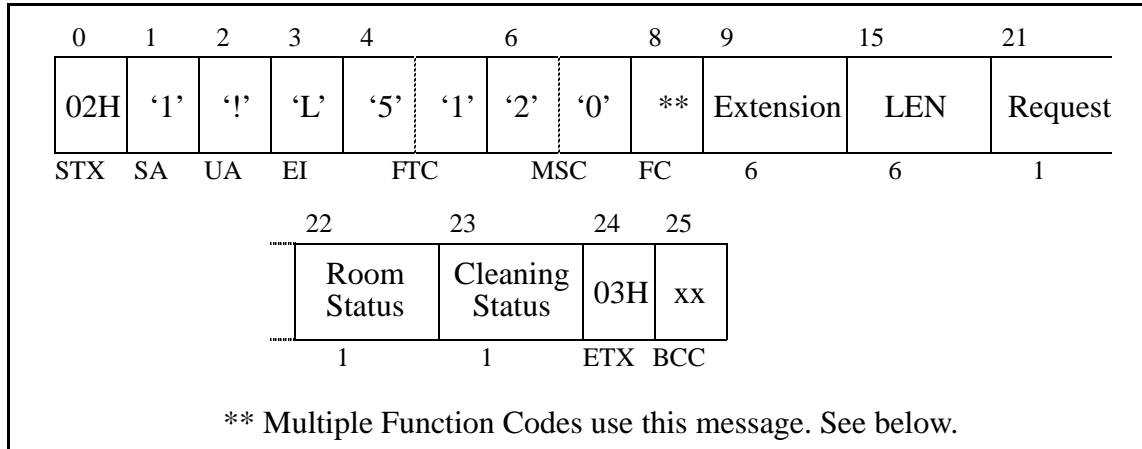
Message fields are:

- FC -- Function Codes that use this message format are: (FTC-FC)
  - 51-1 -- Guest Room 1 (Model 90)
  - 51-2 -- Guest Room 2 (Model 90)
  - 51-3 -- Guest Room 3 (Model 90)
  - 51-4 -- Guest Room 4 (Model 90)
  - 51-5 -- Guest Room 5 (Model 90)
  - 51-6 -- Guest Room 6 (Model 90)
  - 51-7 -- Guest Room 7 (Model 90)

**Note:** *This message was not previously defined in NEAX2400 IMS Hotel System PMS Interface Specification.*

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Maid -- Identification number of the maid. If the maid identification number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- LEN -- Line Equipment Number.

Room Answer



**Figure 4-5 Room Answer (General)**

Message fields are:

- FC -- Function Codes that use this message format are: (FTC-FN)
  - 51-8 -- Negative Answer (Model 90)
  - 51-9 -- Positive Answer (Model 90)
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- LEN -- Line Equipment Number.
- Request -- Room Status Change Request. The possible values are:
  - 0 -- Room Status is not to be changed.
  - 1 -- Room Status is to be changed.
- Room Status -- Room status. This flag is used in conjunction with the cleaning status flag to determine the status of the room.
- Cleaning Status -- Cleaning status. The possible combinations with room status are listed below:

Room	Clean	Status of the Room
0	3	Vacant (Ready to sell)
1	0	Stay (Occupied)
1	1	Stay, Cleaning in progress
1	2	Stay, Cleaning ended
1	3	Stay, Inspected
2	0	Stay, Departure Day
2	1	Stay, Departure Day, Cleaning in progress
0	0	Out (Checked Out)
0	1	Out, Cleaning in progress
0	2	Out, Cleaning ended
0	4	Out of Order (Cannot sell)

## Administration

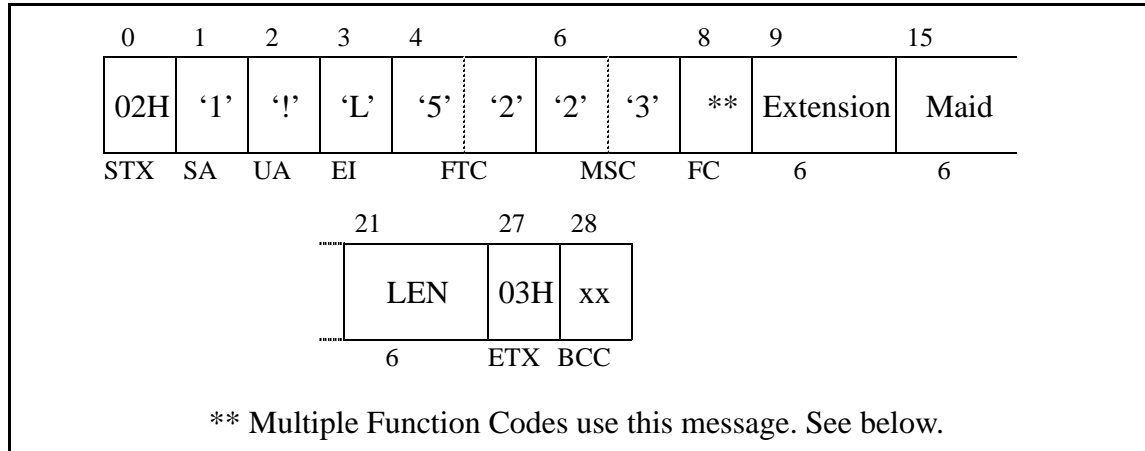


Figure 4-6 Administration (General)

Message fields are:

- FC -- Function Codes that use this message format are: (FTC-FC)
  - 52-1 -- Administration 1 (Model 90)
  - 52-2 -- Administration 2 (Model 90)
  - 52-3 -- Administration 3 (Model 90)
  - 52-4 -- Administration 4 (Model 90)
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Maid -- Identification number of the maid. If the maid identification number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- LEN -- Line Equipment Number.

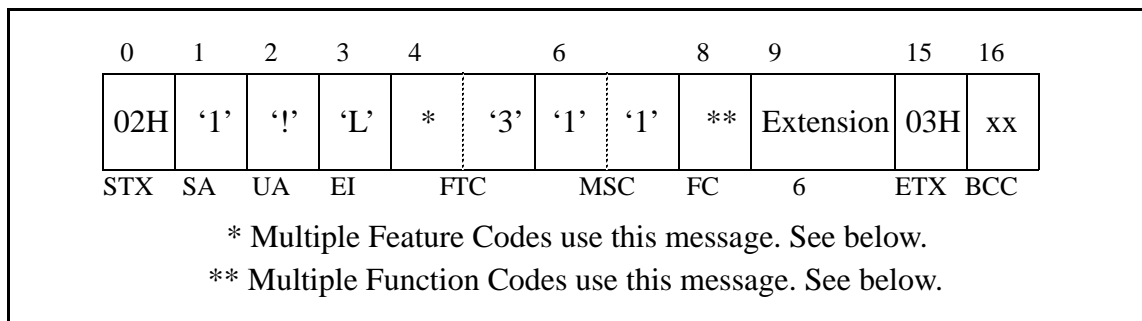
## Message Waiting Lamp Control

These messages are used to control the message waiting lamps on all of the phones. Messages sent by the PMS are commands to turn a message waiting lamp on or off. Messages sent by the NEAX are notification that a message waiting lamp has been turned on or off. This message group uses multiple Feature Codes. The code pairs are as follows (first number is the Feature Code, second number is the Function Code):

- 13-1 -- MW Lamp On (Sent by PMS)
- 13-2 -- MW Lamp Off (Sent by PMS)
- 13-3 -- MW Lamp On (Sent by NEAX)
- 13-4 -- MW Lamp Off (Sent by NEAX)
- 53-1 -- MW Lamp Status (Model 90)
- 53-2 -- MW Lamp On - FDT (Sent by NEAX) (Model 90)
- 53-3 -- MW Lamp Off - FDT (Sent by NEAX) (Model 90)

All messages designated “Model 90” are used only by the Model 90 version. The other messages are used by either the Model 60 or the Model 90 version. All messages apply to text message status only.

### MWL Control



**Figure 4-7 MWL Control (General)**

Message fields are:

- FC -- Function Codes that use this message format are: (FTC-FC)
  - 13-1 -- MWL On (Sent by PMS)
  - 13-2 -- MWL Off (Sent by PMS)
  - 13-3 -- MWL On (Sent by NEAX)
  - 13-4 -- MWL Off (Sent by NEAX)
  - 53-2 -- MWL On - FDT (Sent by NEAX) (Model 90)
  - 53-3 -- MWL Off - FDT (Sent by NEAX) (Model 90)
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.



## MWL Status

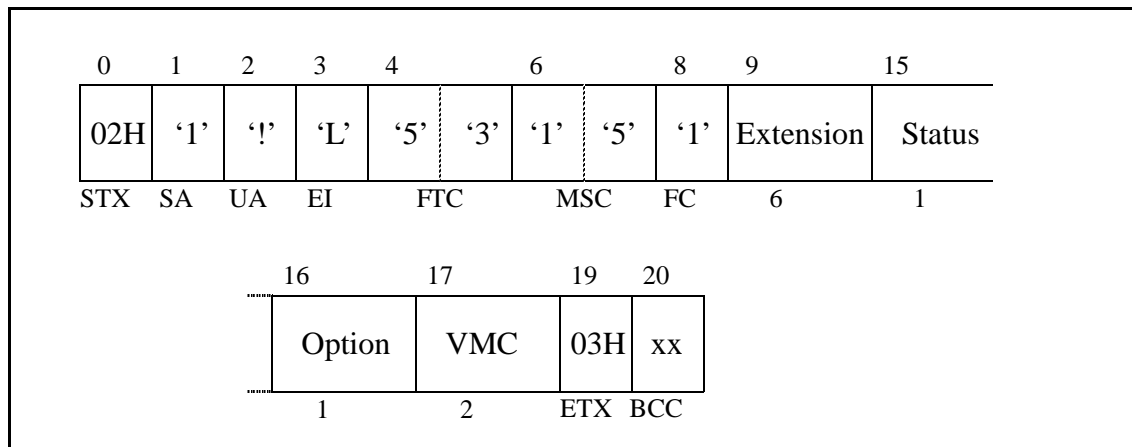


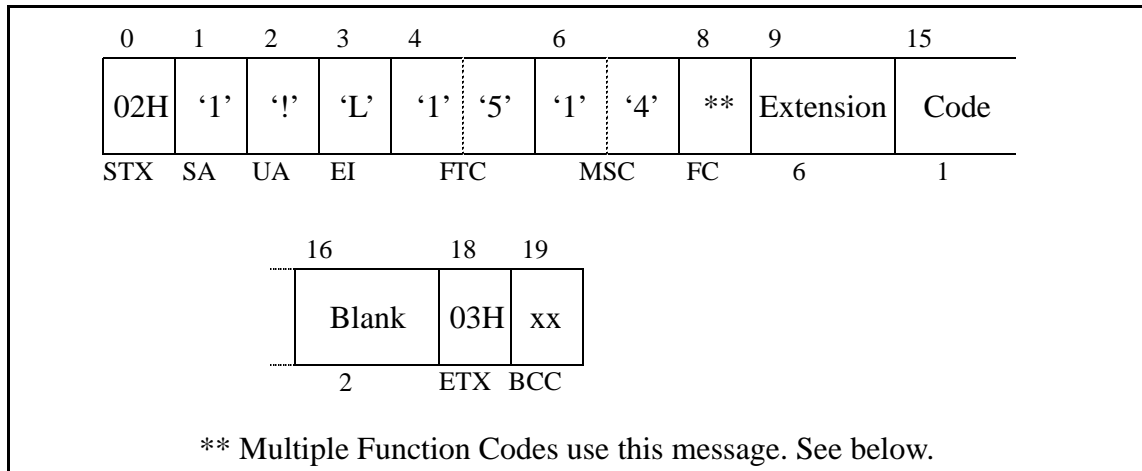
Figure 4-8 MWL Status

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Status -- Message Waiting Lamp status. The status values are:
  - 0 -- No messages waiting.
  - 1 -- Message waiting set by the NEAX.
  - 4 -- Message waiting set by the PMS.
  - 5 -- Message waiting set by both the PMS and NEAX.
- Option -- Message Waiting Lamp status option. This field must always contain zero ('0').
- VMC -- This is reserved for future use. Should be filled with two space (20H) characters.

## Restriction Control

There are two messages. They are identical, except that message 15-1 is sent from the PMS to the NEAX, and message 15-2 is sent by the NEAX to the PMS. These messages simply communicate a new restriction code for an extension. These messages are used by both the Model 60 and the Model 90 version.



**Figure 4-9 Restriction Control**

Message fields are:

- FC-- There are two functions: (FTC-FC)
  - 15-1 -- Originated from the PMS.
  - 15-2 -- Originated from the NEAX.
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Code -- Restriction code for this extension. The possible codes are:
  - 0 -- Do Not Disturb and Room Cut-Off are cancelled.
  - 1 -- Room Cut-Off is set, Do Not Disturb is cancelled.
  - 5 -- Do Not Disturb is set, Room Cut-Off is cancelled.
  - 6 -- Do Not Disturb and Room Cut-Off are set.
- Blank -- Field contains two space (20H) characters.

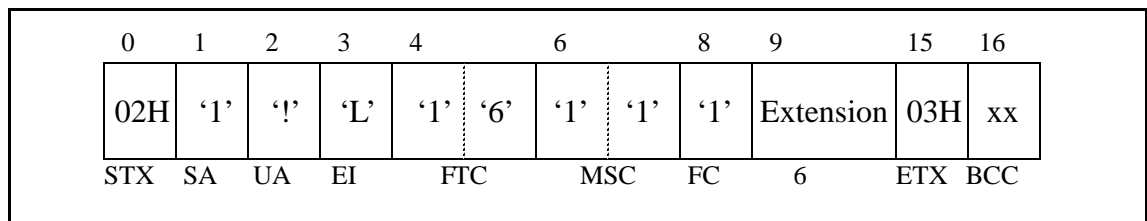
## Check In/Check Out (Model 60)

These messages do not represent unique features as such, but are a convenient tool for activating a sequence of functions commonly performed when a guest checks in or out of a room. These messages are exclusively used by the Model 60 with the sole exception of Check Out Outgoing Call Report (16-C) which is also used by the Model 90 version.

The Feature Codes are as follows:

- 16-1 -- Check In 1
- 16-2 -- Check Out
- 16-5 -- Check Out Message Waiting Lamp Off Report
- 16-6 -- Check Out Message Waiting Lamp On Report
- 16-A -- Check In 2
- 16-B -- Check In 3
- 16-C -- Check Out Outgoing Call Report
- 16-D -- Check Out Message Waiting Report

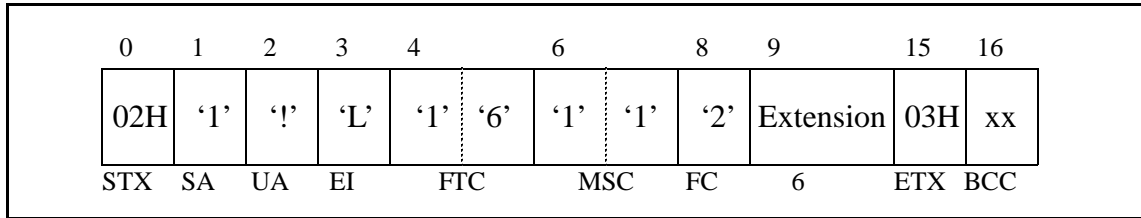
### Check In 1



**Figure 4-10 Check In 1**

The only message field is the extension number who is being checked in. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters. The Room Status is set to "Stay" and Room Cut-Off is cancelled.

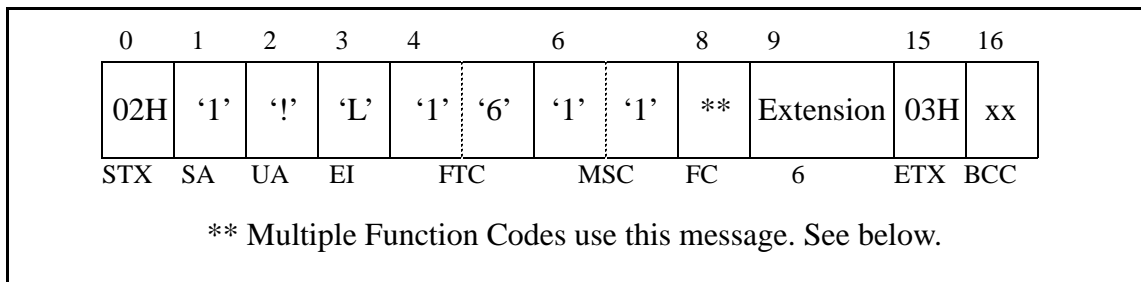
**Check Out**



**Figure 4-11 Check Out**

The only message field is the extension number who is being checked out. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters. The Room Status is set to “Out” and Room Cut-Off is set.

**Check Out Message Report**



**Figure 4-12 Check Out Message Waiting Lamp Report**

Message fields are:

- FC-- There are two functions: (FTC-FC)
  - 16-5 -- Check Out Message Waiting Lamp Off Report
  - 16-6 -- Check Out Message Waiting Lamp On Report
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

## Check In 2

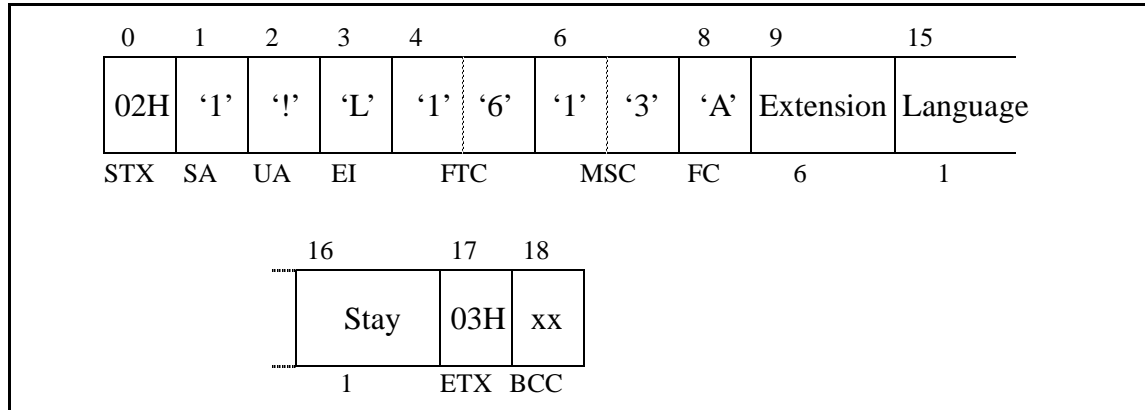


Figure 4-13 Check In 2

This causes the Room Status to be set to Stay and cancels Room Cut-Off.

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Language -- Language category for the guest. The possible values are:
  - 0 -- Not specified
  - 1 -- Japanese
  - 2 -- English
  - 3 -- German
  - 4 -- French
  - 5 -- Spanish
  - 6 -- Chinese
  - 7 -- Russian.
- Stay -- Room stay. The possible values are listed below:

Stay	VIP	Out
1	No	No (Key is not in key rack.)
2	Yes	No (Key is not in key rack.)
3	No	Yes (Key is in key rack.)
4	Yes	Yes (Key is in key rack.)

Check In 3

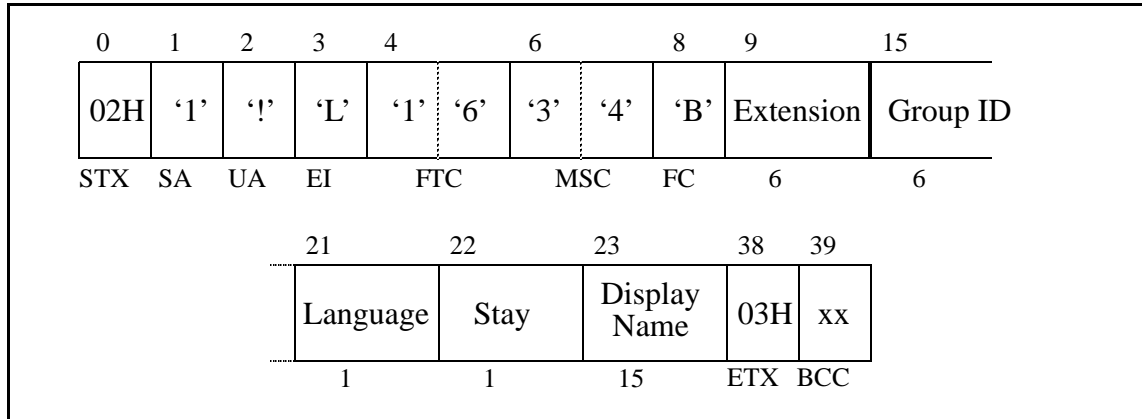


Figure 4-14 Check In 3

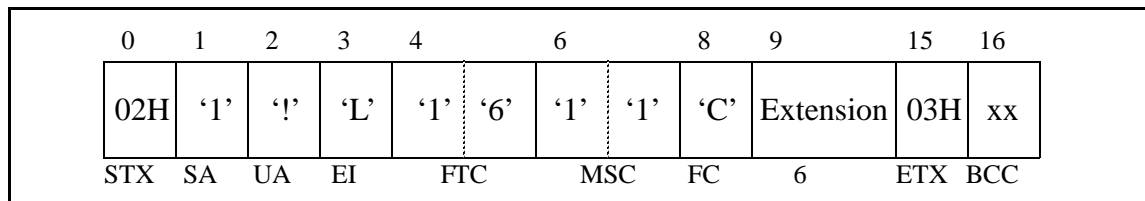
This causes the Room Status to be set to Stay and cancels Room Cut-Off.

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Group ID -- Group number for the extension. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Language -- Language category for the guest. The possible values are:
  - 0 -- Not specified
  - 1 -- Japanese
  - 2 -- English
  - 3 -- German
  - 4 -- French
  - 5 -- Spanish
  - 6 -- Chinese
  - 7 -- Russian.
- Stay -- Room stay. The possible values are listed below:
 

Stay	VIP	Out
1	No	No (Key is not in key rack.)
2	Yes	No (Key is not in key rack.)
3	No	Yes (Key is in key rack.)
4	Yes	Yes (Key is in key rack.)
- Display Name -- The display name of the guest. The name must be left justified, and any remaining space must be filled with space (20H) characters.

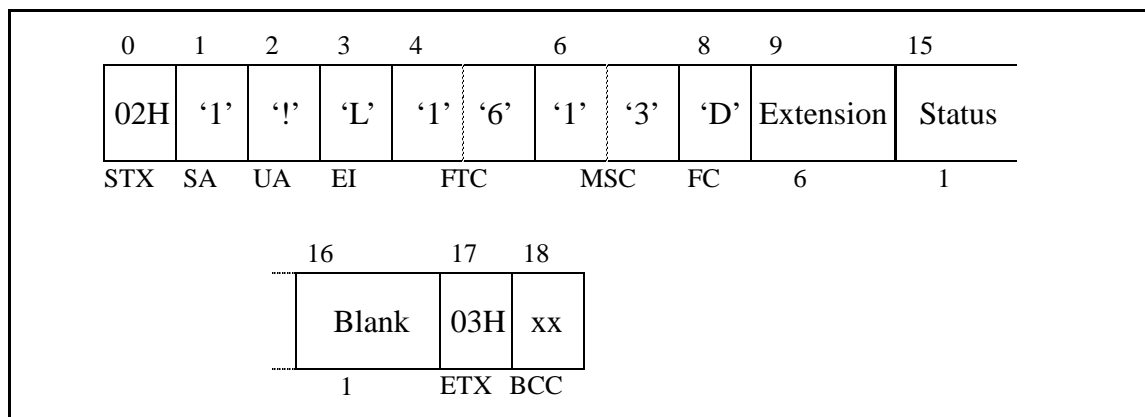
### Check Out Outgoing Call Report



**Figure 4-15 Check Out Outgoing Call Report**

The only message field is the extension number who is being checked out. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

### Check Out Message Waiting Report



**Figure 4-16 Check Out**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Status -- Message Waiting Lamp status. The status values are:
  - 0 -- No messages waiting.
  - 1 -- Message waiting set by the NEAX.
  - 4 -- Message waiting set by the PMS.
  - 5 -- Message waiting set by both the PMS and NEAX.
- Blank -- Field contains one space (20H) character.





- Cleaning Status-- Cleaning status. The possible combinations with room status are listed below:

Room	Clean	Status of the Room
1	0	Stay (Occupied)
1	1	Stay, Cleaning in progress
1	2	Stay, Cleaning ended
1	3	Stay, Inspected
2	0	Stay, Departure Day
2	1	Stay, Departure Day, Cleaning in progress

- Key -- Room key status:
  - 0 -- Key is in the key rack.
  - 1 -- Key is not in the key rack.
- VIP -- VIP category:
  - 0 -- Guest is not a VIP.
  - 1 -- Guest is a VIP.
- Language -- Language category for the guest. The possible values are:
  - 0 -- Not specified
  - 1 -- Japanese
  - 2 -- English
  - 3 -- German
  - 4 -- French
  - 5 -- Spanish
  - 6 -- Chinese
  - 7 -- Russian.
- Display Name -- The display name of the guest. The name must be left justified, and any remaining space must be filled with space (20H) characters.
- Data A & B-- Condition Data A and B. The contents of the option data are to be assigned on an individual hotel basis.

Check Out

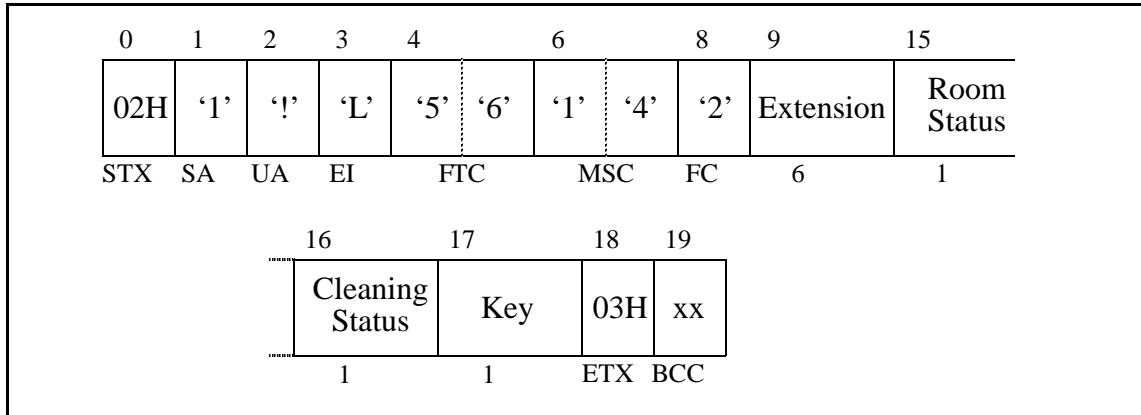


Figure 4-18 Check Out

When Cleaning Status is set to 0, 1, or 2, Room Cut Off is cancelled.

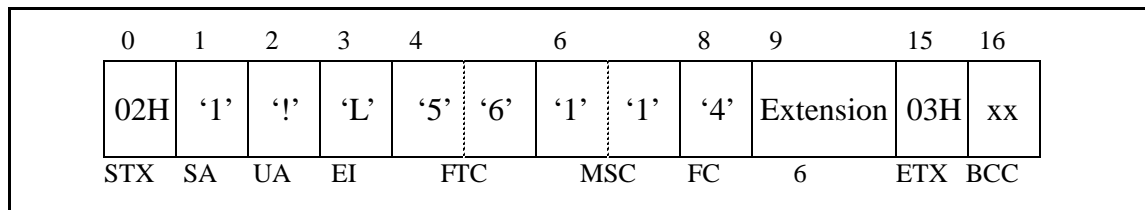
Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Room Status -- Room status. This flag is used in conjunction with the cleaning status flag to determine the status of the room.
- Cleaning Status -- Cleaning status. The possible combinations with room status are listed below:

Room	Clean	Status of the Room
0	3	Vacant (Ready to sell)
0	0	Out (Checked Out)
0	1	Out, Cleaning in progress
0	2	Out, Cleaning ended
0	4	Out of Order (Cannot sell)

- Key -- Room key status:
  - 0 -- Key is in the key rack.
  - 1 -- Key is not in the key rack.

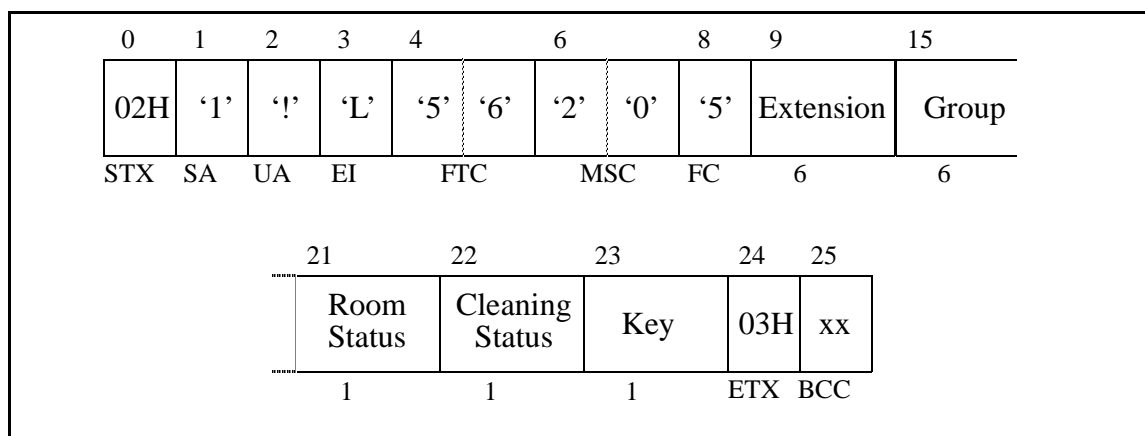
## Check In Cancellation



**Figure 4-19 Check In Cancellation**

The only message field is the extension number that was previously checked in. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters. The room status is set to "Vacant" (Room Status = '0', Cleaning Status = '3').

## Check Out Cancellation



**Figure 4-20 Check Out Cancellation**

Message fields are:

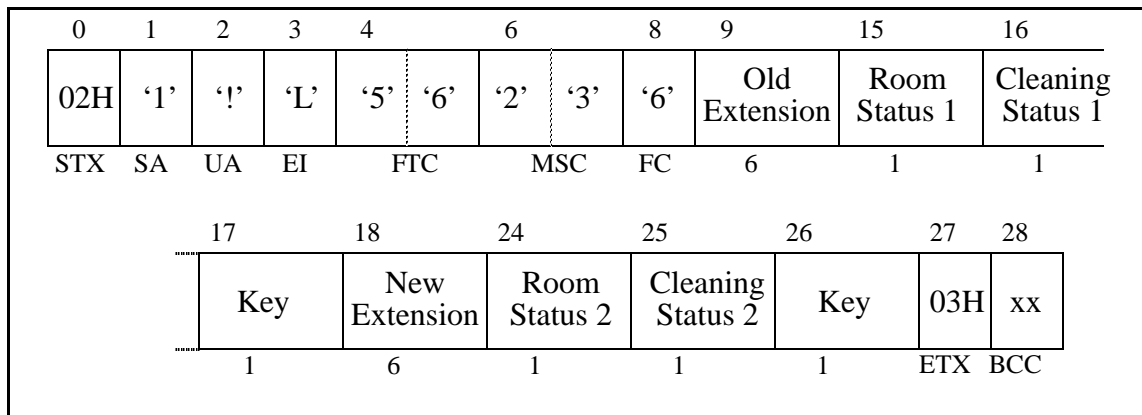
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Group ID -- Group number for the extension. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Room Status -- Room status. This flag is used in conjunction with the cleaning status flag to determine the status of the room.

- Cleaning Status -- Cleaning status. The possible combinations with room status are listed below:

Room	Clean	Status of the Room
1	0	Stay (Occupied)
1	1	Stay, Cleaning in progress
1	2	Stay, Cleaning ended
1	3	Stay, Inspected
2	0	Stay, Departure Day
2	1	Stay, Departure Day, Cleaning in progress

- Key -- Room key status:
  - 0 -- Key is in the key rack.
  - 1 -- Key is not in the key rack.

**Room Change**



**Figure 4-21 Room Change**

Message fields are:

- Old Extension -- Old extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Room Status 1 -- Room status of the old room. This flag is used in conjunction with the cleaning status flag to determine the status of the room.
- Cleaning Status 1 -- Cleaning status of the old room. The possible combinations with room status are listed below:

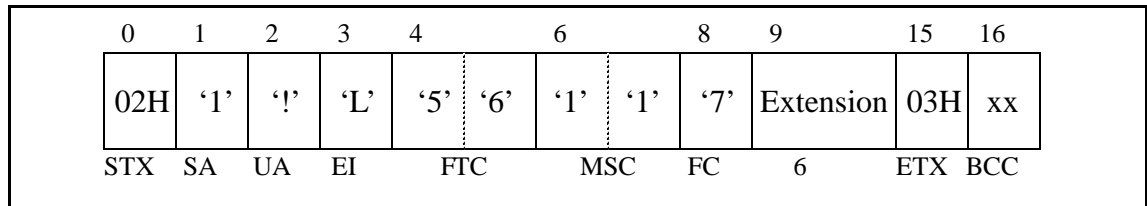
Room	Clean	Status of the Room
0	3	Vacant (Ready to sell)
0	0	Out (Checked Out)
0	1	Out, Cleaning in progress
0	2	Out, Cleaning ended
0	4	Out of Order (Cannot sell)

- Key -- Old room key status:
  - 0 -- Key is in the key rack.
  - 1 -- Key is not in the key rack.
- New Extension -- New extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Room Status 2 -- Room status of the new room. This flag is used in conjunction with the cleaning status flag to determine the status of the room.
- Cleaning Status 2 -- Cleaning status of the new room. The possible combinations with room status are listed below:

Room	Clean	Status of the Room
1	0	Stay (Occupied)
1	1	Stay, Cleaning in progress
1	2	Stay, Cleaning ended
1	3	Stay, Inspected

- Key -- New room key status:
  - 0 -- Key is in the key rack.
  - 1 -- Key is not in the key rack.

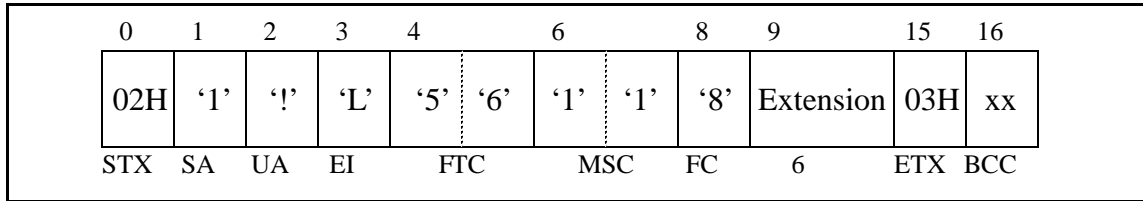
**Provisional Check In**



**Figure 4-22 Provisional Check In**

The only message field is the extension number that has been provisionally checked in. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters. The room status is set to “Stay” (Room Status = ‘1’, Cleaning Status = ‘0’) and Room Cut-Off is cancelled.

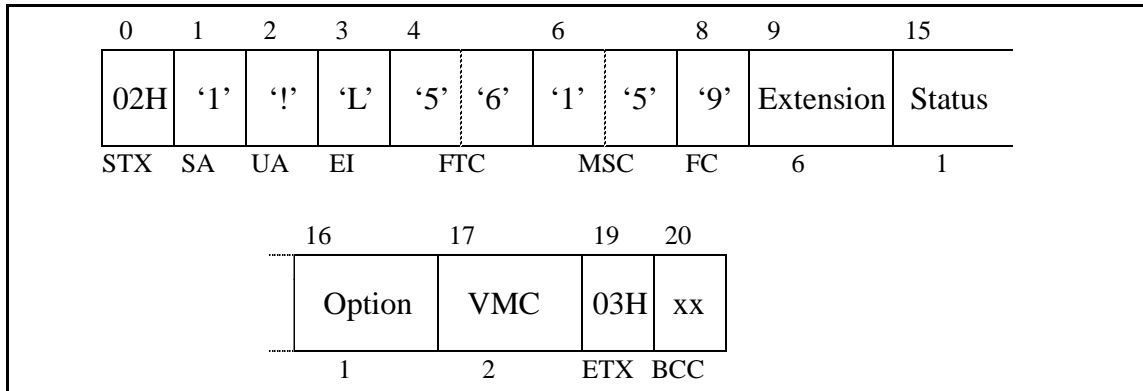
**Provisional Check Out**



**Figure 4-23 Provisional Check out**

The only message field is the extension number that has been provisionally checked out. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters. When maid status is not performed, room status is set to “Vacant” (Room Status = ‘0’, Cleaning Status = ‘3’); if maid status is performed, room status is set to “Out” (Room Status = ‘0’, Cleaning Status = ‘0’).

**Check Out Message Waiting Report**



**Figure 4-24 Check Out Message Waiting Report**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Status -- Message Waiting Lamp status. The status values are:
  - 0 -- No text messages waiting.
  - 1 -- Message waiting set by the NEAX.
  - 4 -- Message waiting set by the PMS.
  - 5 -- Message waiting set by the PMS and the NEAX.
- Option -- Message Waiting status option. This field must always contain zero ('0').
- VMC -- This is reserved for future use. Should be filled with two space (20H) characters.

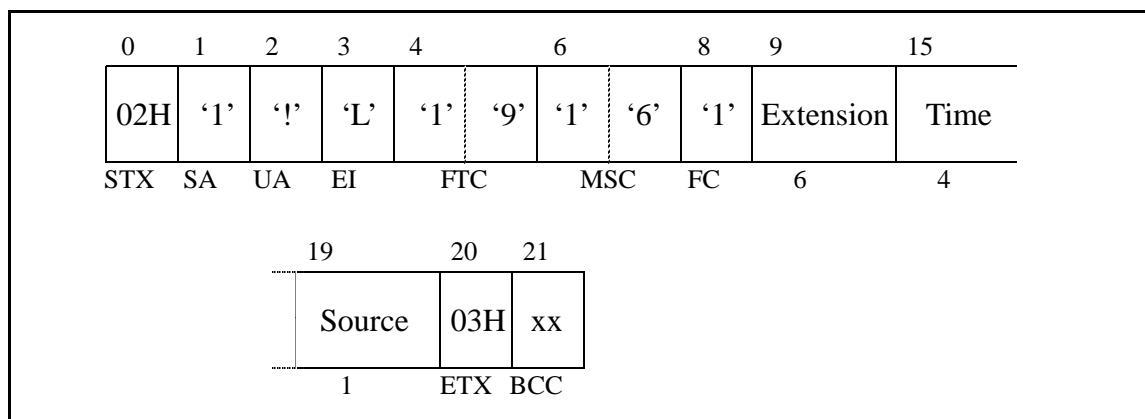
## Wake Up/Group Announcement

The Function Codes are as follows:

- 19-1 -- Wake Up Setting (Sent by NEAX)
- 19-2 -- Wake Up Cancellation (Sent by NEAX)
- 19-3 -- Wake Up Execution Result
- 19-4 -- Wake Up Setting (Sent by PMS)
- 19-5 -- Wake Up Cancellation (Sent by PMS)
- 19-6 -- Group Announcement Setting (Sent by NEAX)
- 19-7 -- Group Announcement Cancellation (Sent by NEAX)
- 19-8 -- Group Announcement Execution Result
- 19-9 -- Group Announcement Setting (Sent by PMS)
- 19-A -- Group Announcement Cancellation (Sent by PMS)

These messages are used by both the Model 60 and the Model 90 versions.

### Wake Up Setting (NEAX)

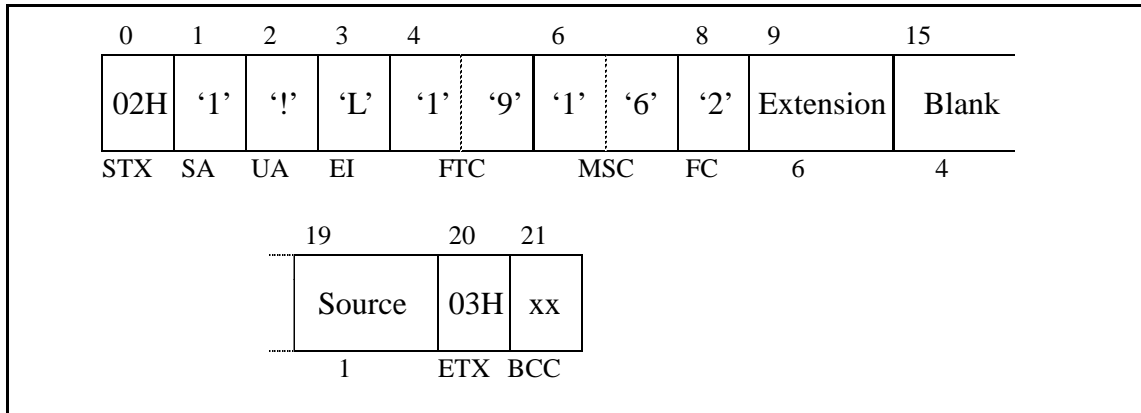


**Figure 4-25 Wake Up Setting (NEAX)**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Time -- Time for which a wake up call is set. Format used is HHMM using military time.
- Source -- Code for the source of the wake up setting. Possible values are:
  - 1 -- Guest Extension.
  - 2 -- Attendant.
  - 3 -- Administration Extension.
  - 4 -- Property Management System.

**Wake Up  
Cancellation  
(NEAX)**



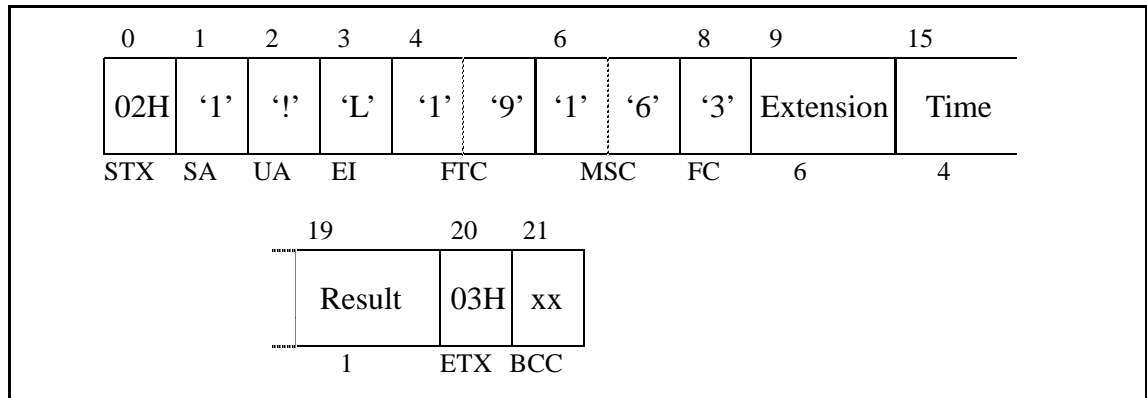
**Figure 4-26 Wake Up Cancellation (NEAX)**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Blank -- Field contains four space (20H) characters.
- Source -- Code for the source of the wake up setting. Possible values are:
  - 1 -- Guest Extension.
  - 2 -- Attendant.
  - 3 -- Administration Extension.
  - 4 -- Property Management System.



## Wake Up Execution Result

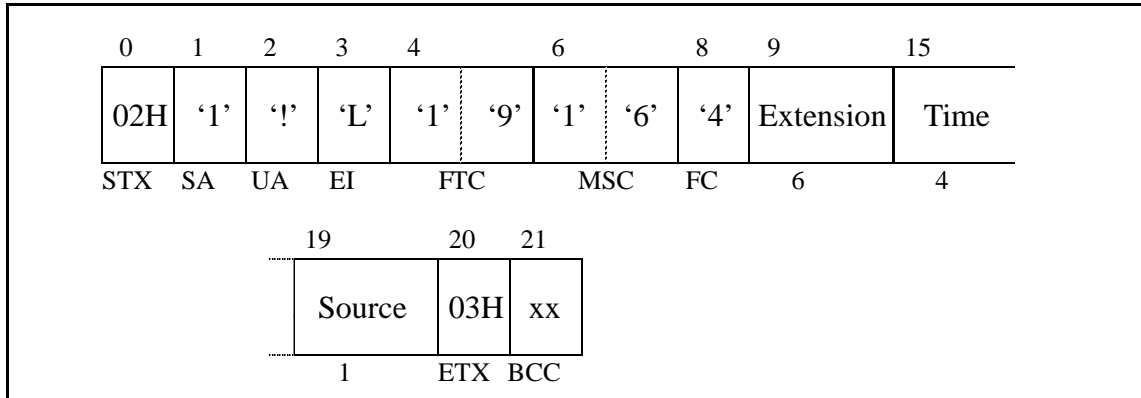


**Figure 4-27 Wake Up Execution Result**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Time -- Time for which a wake up was set. Format used is HHMM using military time.
- Result -- Code for the result of the wake up call. Possible values are:
  - 1 -- Answer.
  - 2 -- Busy.
  - 3 -- No answer.
  - 4 -- Block.
  - 5 -- Call Termination to Attendant Console.

**Wake Up Setting (PMS)**

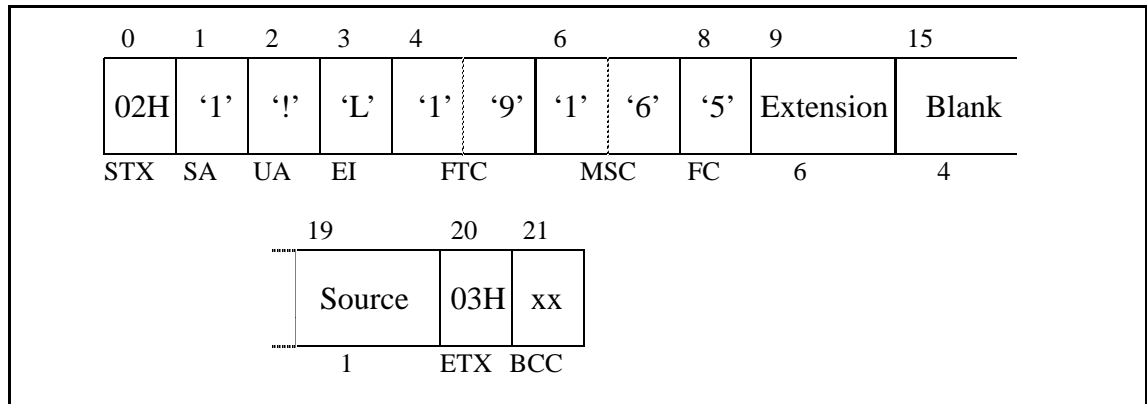


**Figure 4-28 Wake Up Setting (PMS)**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Time -- Time for which a wake up call is set. Format used is HHMM using military time.
- Source -- Code for the source of the wake up setting. Possible values are:
  - 1 -- Guest Extension.
  - 2 -- Attendant.
  - 3 -- Administration Extension.
  - 4 -- Property Management System.

## Wake Up Cancellation (PMS)

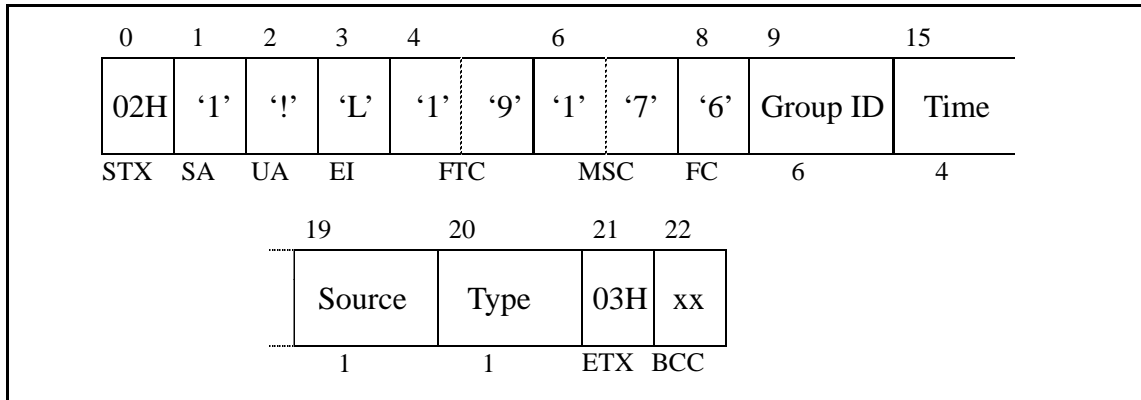


**Figure 4-29 Wake Up Cancellation (PMS)**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Blank -- Field contains four space (20H) characters.
- Source -- Code for the source of the wake up setting. Possible values are:
  - 1 -- Guest Extension.
  - 2 -- Attendant.
  - 3 -- Administration Extension.
  - 4 -- Property Management System.

**Group  
Announcement  
Setting (NEAX)**

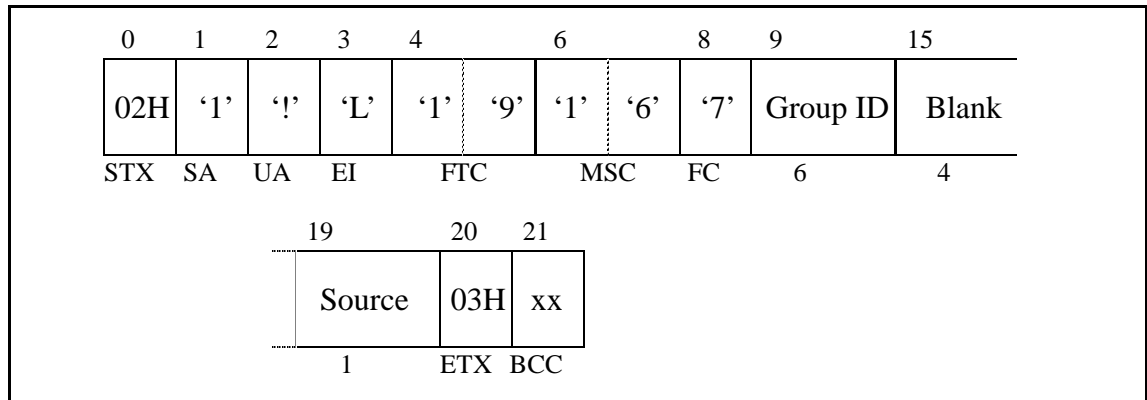


**Figure 4-30 Group Announcement Setting (NEAX)**

Message fields are:

- Group ID -- Group number to set. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Time -- Time for which a group announcement call is set. Format used is HHMM using military time.
- Source -- Code for the source of the group announcement setting. Possible values are:
  - 1 -- Guest Extension.
  - 2 -- Attendant.
  - 3 -- Administration Extension.
  - 4 -- Property Management System.
- Type -- Code for the type of announcement. The values for the code are determined by the site, and therefore cannot be listed here.

## Group Announcement Cancellation (NEAX)

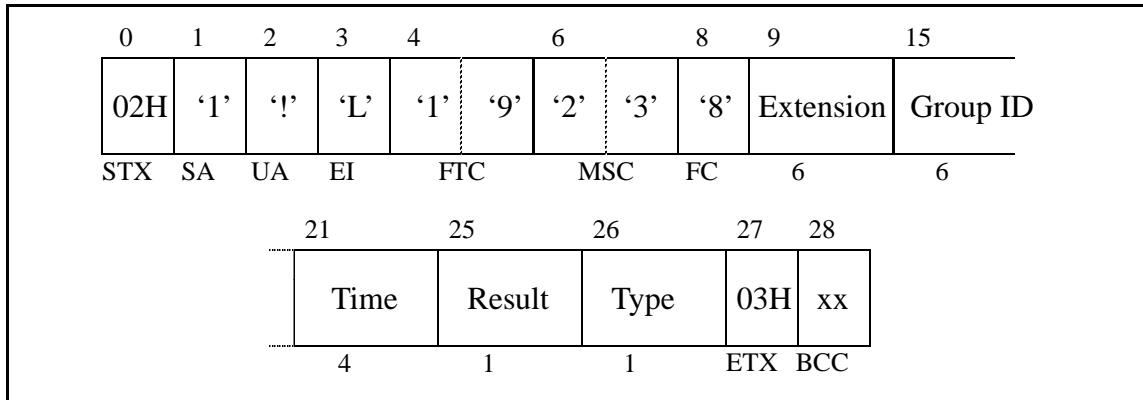


**Figure 4-31 Group Announcement Cancellation (NEAX)**

Message fields are:

- Group ID -- Group number to cancel. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Blank -- Field contains four space (20H) characters.
- Source -- Code for the source of the group announcement setting. Possible values are:
  - 1 -- Guest Extension.
  - 2 -- Attendant.
  - 3 -- Administration Extension.
  - 4 -- Property Management System.

**Group  
Announcement  
Execution Result**

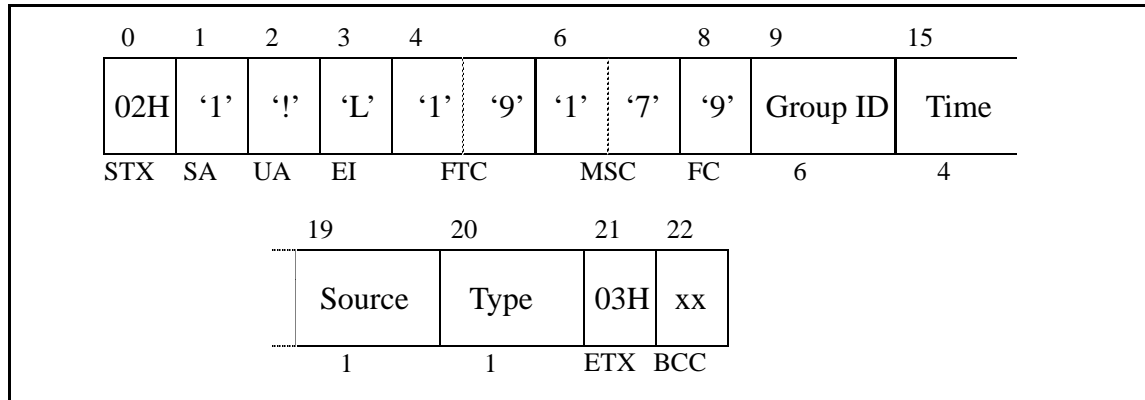


**Figure 4-32 Group Announcement Execution Result**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Group ID -- Group number to set. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Time -- Time for which a group announcement call was set. Format used is HHMM using military time.
- Result -- Code for the result of the group announcement call. Possible values are:
  - 1 -- Answer.
  - 2 -- Busy.
  - 3 -- No answer.
  - 4 -- Block.
  - 5 -- Call Termination to Attendant Console.
- Type -- Code for the type of announcement. The values represented by the codes are determined by the site, and therefore cannot be listed here.

## Group Announcement Setting (PMS)

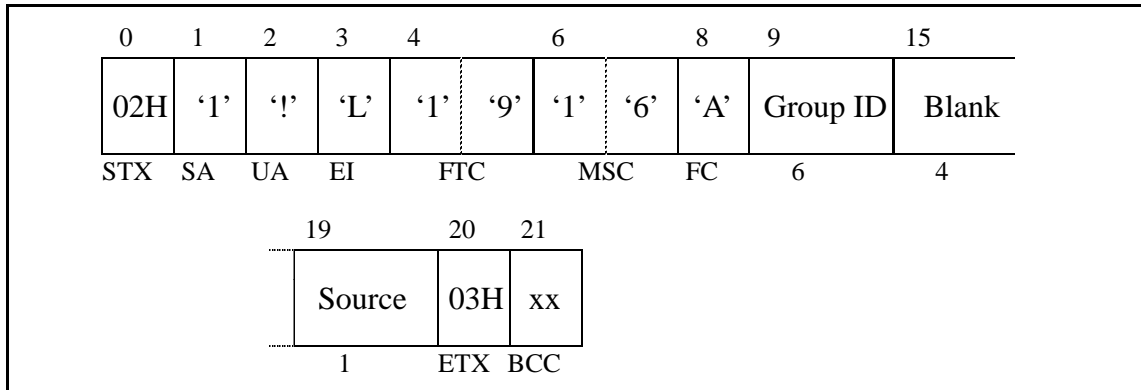


**Figure 4-33 Group Announcement Setting (PMS)**

Message fields are:

- Group ID -- Group number to set. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Time -- Time for which a group announcement call is set. Format used is HHMM using military time.
- Source -- Code for the source of the group announcement setting. Possible values are:
  - 1 -- Guest Extension.
  - 2 -- Attendant.
  - 3 -- Administration Extension.
  - 4 -- Property Management System.
- Type -- Code for the type of announcement. The values for the code are determined by the site, and therefore cannot be listed here.

**Group  
Announcement  
Cancellation (PMS)**



**Figure 4-34 Group Announcement Cancellation (PMS)**

Message fields are:

- Group ID -- Group number to cancel. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Blank -- Field contains four space (20H) characters.
- Source -- Code for the source of the group announcement setting. Possible values are:
  - 1 -- Guest Extension.
  - 2 -- Attendant.
  - 3 -- Administration Extension.
  - 4 -- Property Management System.



## Room Move/Swap/Copy (Model 60)

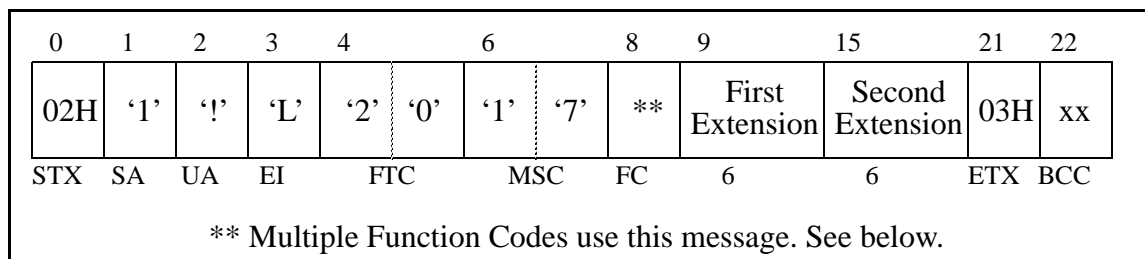
This message group is used exclusively by the Model 60 version. The Function Codes are:

- 20-1 -- Room Move
- 20-2 -- Room Swap
- 20-5 -- Room Copy

Room Move leaves the second extension's maid status unchanged, cancels the second extension's Room Cut-Off and sets all other data to that of the first extension. The first extension's maid status is set to '1', Room Cut-Off is set, Do Not Disturb and Message Waiting is reset, Wake Up is cancelled, Language is set to '0' and Guest Name and Group Number are cleared.

Room Swap completely exchanges the data between the first and second extensions.

Room Copy completely copies the data from the first extension to the second extension. The data for the first extension is unchanged.



**Figure 4-35 Room Move/Swap/Copy**

Message fields are:

- FC-- There are three functions: (FTC-FC)
  - 20-1 -- Room Move
  - 20-2 -- Room Swap
  - 20-5 -- Room Copy
- First Extension -- This is the source extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Second Extension -- This is the destination extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

## Room Data Change

This message group uses multiple Feature Codes. The code pairs are as follows (first number is the Feature Code, second number is the Function Code):

- 21-1 -- Room Data Change 60 (Model 60)
- 21-2 -- Group Formation
- 21-3 -- Group Cancellation
- 21-4 -- Reservation Setting
- 21-5 -- Reservation Cancellation
- 21-6 -- Guest Name Change (Model 60)
- 61-1 -- Room Data Change 90 (Model 90)
- 61-3 -- Room Status Change (Model 90)
- 61-4 -- Room Key Status Change (Model 90)

All messages designated “Model 60” are used only by the Model 60 version; all messages designated “Model 90” are used only by the Model 90 version. The other messages are used by either the Model 60 or the Model 90 version.

### Room Data Change 60

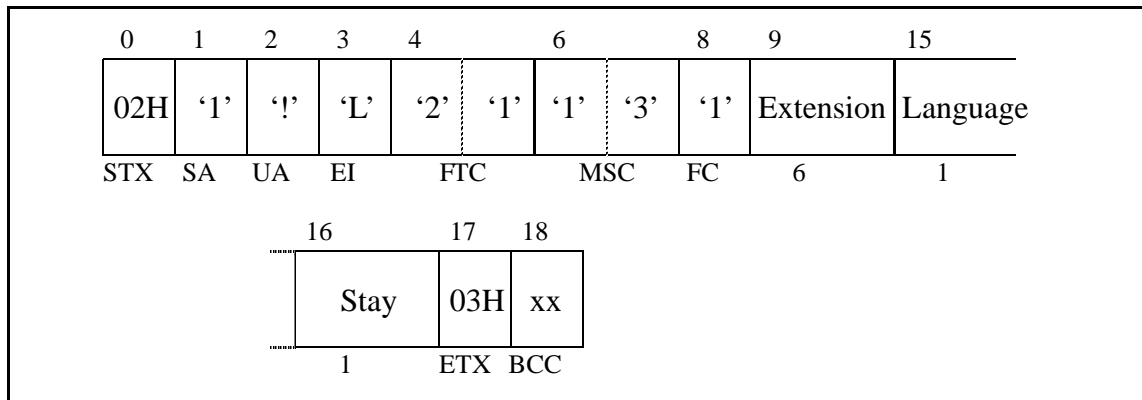


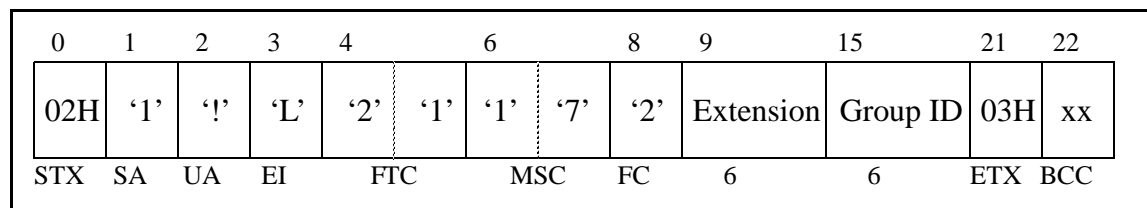
Figure 4-36 Room Data Change 60

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Language -- Language category for the guest. The possible values are:
  - 0 -- Not specified
  - 1 -- Japanese
  - 2 -- English
  - 3 -- German
  - 4 -- French
  - 5 -- Spanish
  - 6 -- Chinese
  - 7 -- Russian.
- Stay -- Room stay. The possible values are listed below:

Stay	VIP	Out
1	No	No (Key is not in key rack.)
2	Yes	No (Key is not in key rack.)
3	No	Yes (Key is in key rack.)
4	Yes	Yes (Key is in key rack.)

## Group Formation

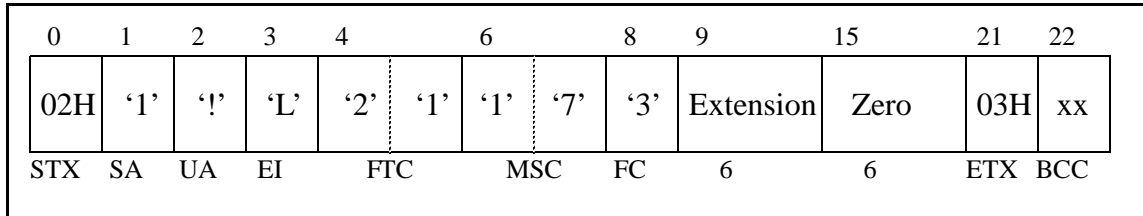


**Figure 4-37 Group Formation**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Group ID -- Group number to join. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

**Group Cancellation**

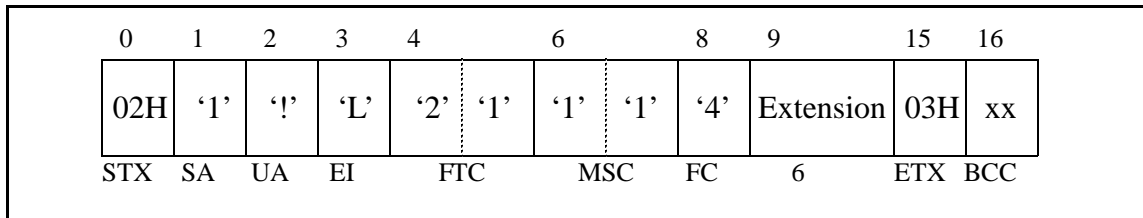


**Figure 4-38 Group Cancellation**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Zero -- Six zero ('0') characters.

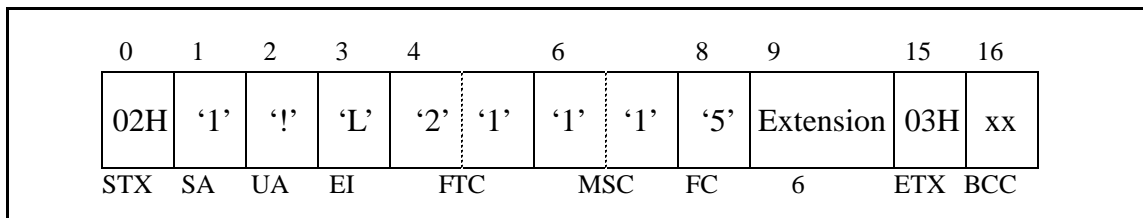
**Reservation Setting**



**Figure 4-39 Reservation Setting**

The only message field is the extension number which is being reserved. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

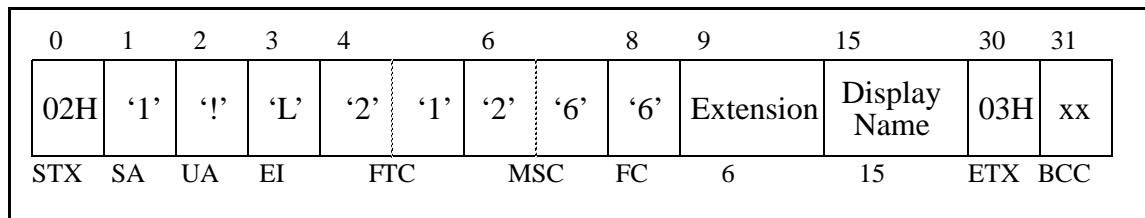
**Reservation Cancellation**



**Figure 4-40 Reservation Cancellation**

The only message field is the extension number which is having reservation cancelled. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

## Guest Name Change

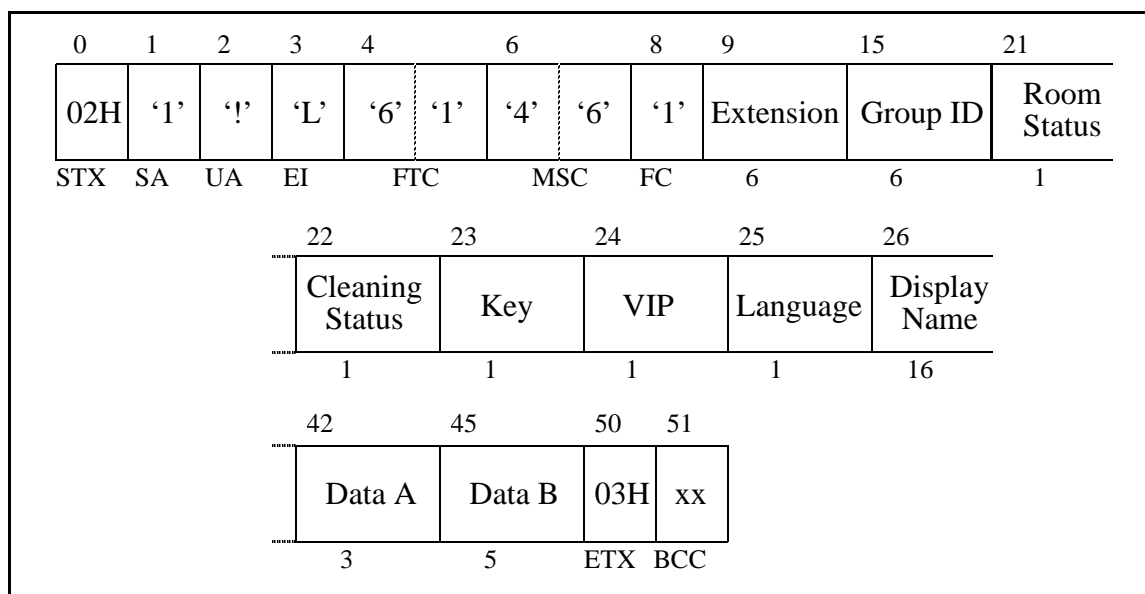


**Figure 4-41 Guest Name Change**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Display Name -- The display name of the guest. The name must be left justified, and any remaining space must be filled with space (20H) characters.

## Room Data Change 90



**Figure 4-42 Room Data Change 90**

This message is to be used only if the extension has been checked in.

Message fields are:

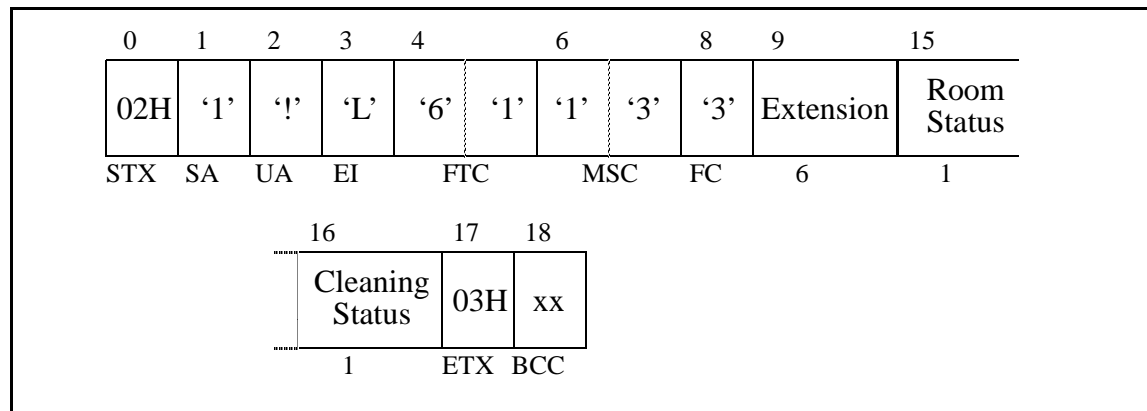
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Group ID -- Group number for the extension. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

- Room Status -- Room status. This flag is used in conjunction with the cleaning status flag to determine the status of the room.
- Cleaning Status -- Cleaning status. The possible combinations with room status are listed below:

Room	Clean	Status of the Room
1	0	Stay (Occupied)
1	1	Stay, Cleaning in progress
1	2	Stay, Cleaning ended
1	3	Stay, Inspected
2	0	Stay, Departure Day
2	1	Stay, Departure Day, Cleaning in progress

- Key -- Room key status:
  - 0 -- Key is in the key rack.
  - 1 -- Key is not in the key rack.
- VIP -- VIP category:
  - 0 -- Guest is not a VIP.
  - 1 -- Guest is a VIP.
- Language -- Language category for the guest. The possible values are:
  - 0 -- Not specified
  - 1 -- Japanese
  - 2 -- English
  - 3 -- German
  - 4 -- French
  - 5 -- Spanish
  - 6 -- Chinese
  - 7 -- Russian.
- Display Name -- The display name of the guest. The name must be left justified, and any remaining space must be filled with space (20H) characters.
- Data A & B-- Condition Data A and B. The contents of the option data are to be assigned on an individual hotel basis.

## Room Status Change



**Figure 4-43 Room Status Change**

If Room Status is set to '0' and Cleaning Status is set to either '3' or '4', the room data is cleared.

If Room Status is set to '0' and the previous Room Status had been '1' or '2', Room Cut-Off is set and the Group registration is cancelled as in the case of a Check Out.

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Room Status -- Room status. This flag is used in conjunction with the cleaning status flag to determine the status of the room.
- Cleaning Status -- Cleaning status. The possible combinations with room status are listed below:

Room	Clean	Status of the Room
0	3	Vacant (Ready to sell)
1	0	Stay (Occupied)
1	1	Stay, Cleaning in progress
1	2	Stay, Cleaning ended
1	3	Stay, Inspected
2	0	Stay, Departure Day
2	1	Stay, Departure Day, Cleaning in progress
0	0	Out (Checked Out)
0	1	Out, Cleaning in progress
0	2	Out, Cleaning ended
0	4	Out of Order (Cannot sell)

### Room Key Status Change

0	1	2	3	4	6	8	9	15	16	17		
02H	'1'	'!'	'L'	'6'	'1'	'1'	'2'	'4'	Extension	Key	03H	xx
STX	SA	UA	EI	FTC	MSC	FC	6	1	ETX	BCC		

**Figure 4-44 Room Key Status Change**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Key -- Room key status:
  - 0 -- Key is in the key rack.
  - 1 -- Key is not in the key rack.

### Extension Report

This message is used by the NEAX to notify the PMS of the addition of an extension to the system or a deletion of an extension from the system. Both the Model 60 and the Model 90 version use these messages. The two messages used are:

- 17-E -- Extension Delete Report
- 17-F -- Extension Assignment Report

### Extension Delete Report

0	1	2	3	4	6	8	9	15	17	18		
02H	'1'	'!'	'L'	'1'	'7'	'1'	'3'	'E'	Extension	Blank	03H	xx
STX	SA	UA	EI	FTC	MSC	FC	6	2	ETX	BCC		

**Figure 4-45 Extension Delete Report**

Message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Blank -- Field contains two space (20H) characters.





## Room Recovery (Model 60)

These messages are used by the PMS to update the database in the Model 60 version of the NEAX. First a Recovery Start Report (70-3) is sent. Then, one or more sets of Room Image messages are sent. Finally, a Recovery End Report (70-4) is sent.

The messages are grouped into a set of four messages. Within each set of four messages the format of the messages is identical, except for the Function Codes, which specify the message. Each set of messages contain more fields (and can therefore convey more information) than the preceding set.

Each set of four messages is itself a set of two pairs of messages. The first pair of messages is used when the PMS, in normal operation (i.e. not error recovery), needs to update the information on a given extension. The second pair of messages is used during recovery. This pair will only be used in response to the NEAX sending a Nop Test Recover Answer or Recovery Request message.

The first message (of either pair) is used by the PMS as an update/ request for information on an extension. If a field contains a valid entry, the NEAX database is updated; if the field is entirely filled with NULL (00H) characters, it is a request for the NEAX to send the value from the NEAX database. The second message is the response from the NEAX to the PMS.

- 17-1 -- Room Image Set 1 (Normal Request from PMS)
- 17-2 -- Room Image Set 1 (Normal Answer from NEAX)
- 17-3 -- Room Image Set 1 (Recovery Request from PMS)
- 17-4 -- Room Image Set 1 (Recovery Answer from NEAX)
- 17-5 -- Room Image Set 2 (Normal Request from PMS)
- 17-6 -- Room Image Set 2 (Normal Answer from NEAX)
- 17-7 -- Room Image Set 2 (Recovery Request from PMS)
- 17-8 -- Room Image Set 2 (Recovery Answer from NEAX)
- 17-9 -- Room Image Set 3 (Normal Request from PMS)
- 17-A -- Room Image Set 3 (Normal Answer from NEAX)
- 17-B -- Room Image Set 3 (Recovery Request from PMS)
- 17-C -- Room Image Set 3 (Recovery Answer from NEAX)

## Room Image Set 1

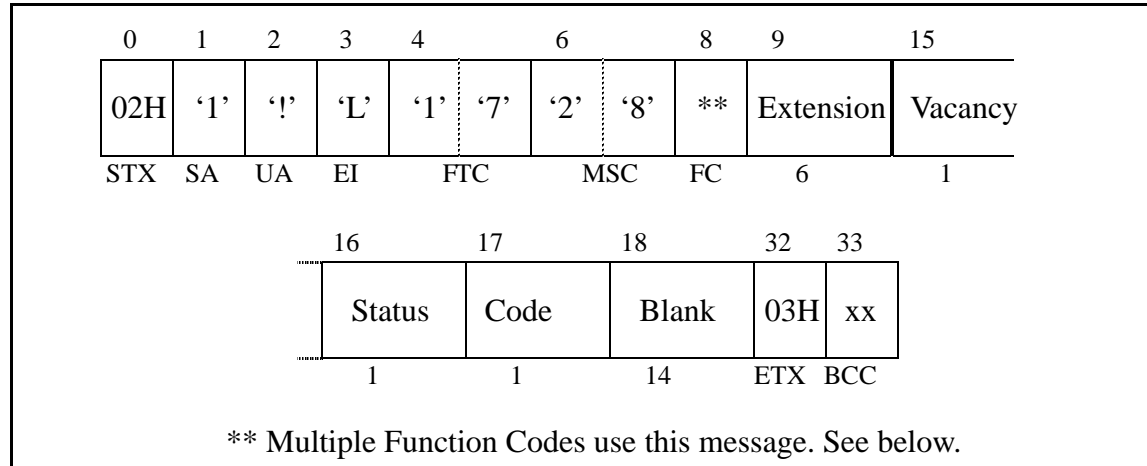
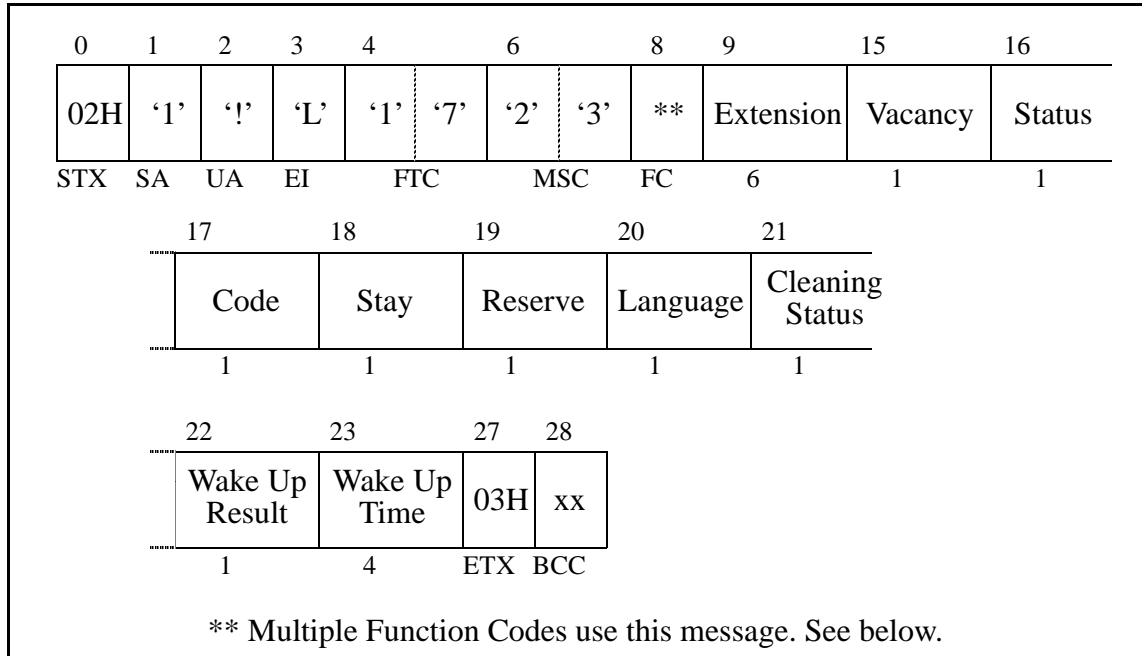


Figure 4-47 Room Image Set 1

The message fields are:

- FC -- Function Codes that use this message format are: (FTC-FC)
  - 17-1 -- Room Image Set 1 (Normal Request from PMS)
  - 17-2 -- Room Image Set 1 (Normal Answer from NEAX)
  - 17-3 -- Room Image Set 1 (Recovery Request from PMS)
  - 17-4 -- Room Image Set 1 (Recovery Answer from NEAX)
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Vacancy -- Vacancy/Occupancy flag. The possible values are:
  - 0 -- Vacant.
  - 1 -- Occupied.
- Status - Message Waiting status. The possible values are:
  - 0 -- Message Waiting Lamp is off.
  - 1 -- Message Waiting Lamp is on.
- Code -- Restriction code for this extension. The possible codes are:
  - 0 -- Do Not Disturb and Room Cut-Off are cancelled.
  - 1 -- Room Cut-Off is set, Do Not Disturb is cancelled.
  - 5 -- Do Not Disturb is set, Room Cut-Off is cancelled.
  - 6 -- Do Not Disturb and Room Cut-Off are set.
- Blank -- Field contains 14 space (20H) characters.

Room Image Set 2



**Figure 4-48 Room Image Set 2**

The message fields are:

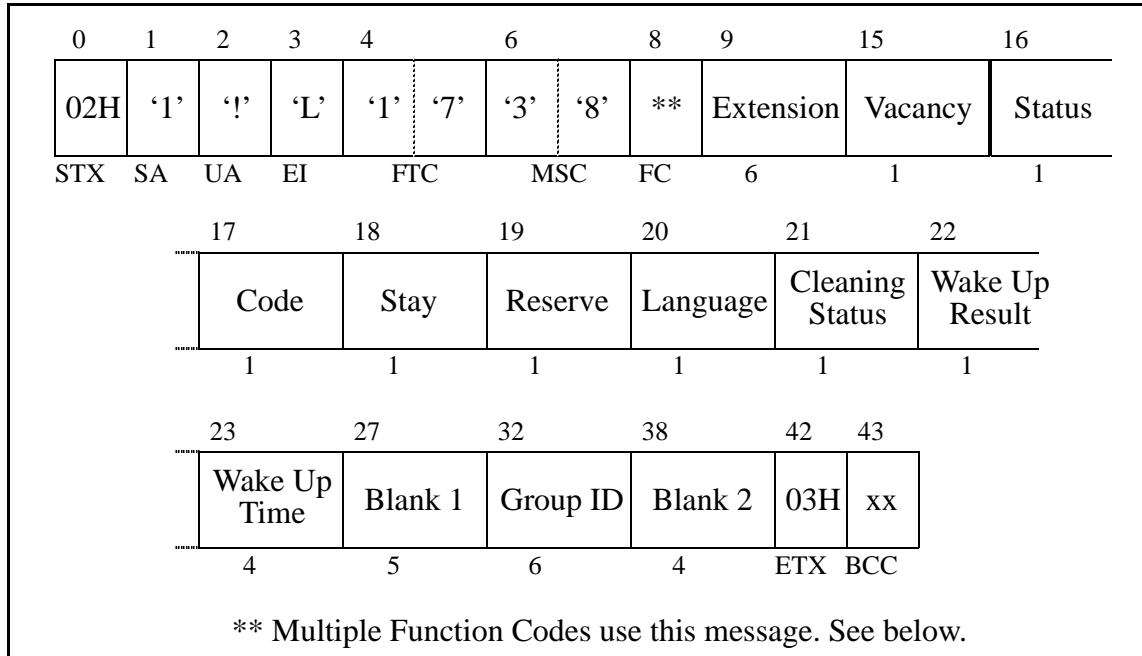
- FC -- Function Codes that use this message format are: (FTC-FC)
  - 17-5 -- Room Image Set 2 (Normal Request from PMS)
  - 17-6 -- Room Image Set 2 (Normal Answer from NEAX)
  - 17-7 -- Room Image Set 2 (Recovery Request from PMS)
  - 17-8 -- Room Image Set 2 (Recovery Answer from NEAX)
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Vacancy -- Vacancy/Occupancy flag. The possible values are:
  - 0 -- Vacant.
  - 1 -- Occupied.
- Status - Message Waiting status. The possible values are:
  - 0 -- Message Waiting Lamp is off.
  - 1 -- Message Waiting Lamp is on.
- Code -- Restriction code for this extension. The possible codes are:
  - 0 -- Do Not Disturb and Room Cut-Off are cancelled.
  - 1 -- Room Cut-Off is set, Do Not Disturb is cancelled.
  - 5 -- Do Not Disturb is set, Room Cut-Off is cancelled.
  - 6 -- Do Not Disturb and Room Cut-Off are set.

- Stay -- Room stay. The possible values are listed below:

Stay	VIP	Out
1	No	No (Key is not in key rack.)
2	Yes	No (Key is not in key rack.)
3	No	Yes (Key is in key rack.)
4	Yes	Yes (Key is in key rack.)

- Reserve -- Reserve flag. Possible values are:
  - 0 -- Room is not reserved
  - 1 -- Room is reserved.
- Language -- Language category for the guest. The possible values are:
  - 0 -- Not specified
  - 1 -- Japanese
  - 2 -- English
  - 3 -- German
  - 4 -- French
  - 5 -- Spanish
  - 6 -- Chinese
  - 7 -- Russian.
- Cleaning Status -- The possible values are:
  - 1 -- Cleaning Started
  - 2 -- Cleaning Ended
  - 3 -- Cleaning Check Ended.
- Wake Up Result -- This indicates the result of the wake up call. The possible values are:
  - 1 -- Answer
  - 2 -- Busy
  - 3 -- No Answer
  - 4 -- Block
  - 5 -- Call Termination to Attendant Console
- Wake Up Time -- The time for which the wake up call is set. Format used is HHMM using military time.

Room Image Set 3



**Figure 4-49 Room Image Set 3**

The message fields are:

- FC -- Function Codes that use this message format are: (FTC-FC)
  - 17-9 -- Room Image Set 3 (Normal Request from PMS)
  - 17-A -- Room Image Set 3 (Normal Answer from NEAX)
  - 17-B -- Room Image Set 3 (Recovery Request from PMS)
  - 17-C -- Room Image Set 3 (Recovery Answer from NEAX)
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Vacancy -- Vacancy/Occupancy flag. The possible values are:
  - 0 -- Vacant.
  - 1 -- Occupied.
- Status - Message Waiting status. The possible values are:
  - 0 -- Message Waiting Lamp is off.
  - 1 -- Message Waiting Lamp is on.
- Code -- Restriction code for this extension. The possible codes are:
  - 0 -- Do Not Disturb and Room Cut-Off are cancelled.
  - 1 -- Room Cut-Off is set, Do Not Disturb is cancelled.
  - 5 -- Do Not Disturb is set, Room Cut-Off is cancelled.
  - 6 -- Do Not Disturb and Room Cut-Off are set.

- Stay -- Room stay. The possible values are listed below:

Stay	VIP	Out
1	No	No (Key is not in key rack.)
2	Yes	No (Key is not in key rack.)
3	No	Yes (Key is in key rack.)
4	Yes	Yes (Key is in key rack.)

- Reserve -- Reserve flag. Possible values are:
  - 0 -- Room is not reserved
  - 1 -- Room is reserved.
- Language -- Language category for the guest. The possible values are:
  - 0 -- Not specified
  - 1 -- Japanese
  - 2 -- English
  - 3 -- German
  - 4 -- French
  - 5 -- Spanish
  - 6 -- Chinese
  - 7 -- Russian.
- Cleaning Status -- The possible values are:
  - 1 -- Cleaning Started
  - 2 -- Cleaning Ended
  - 3 -- Cleaning Check Ended.
- Wake Up Result -- This indicates the result of the wake up call. The possible values are:
  - 1 -- Answer
  - 2 -- Busy
  - 3 -- No Answer
  - 4 -- Block
  - 5 -- Call Termination to Attendant Console
- Wake Up Time -- The time for which the wake up call is set. Format used is HHMM using military time.
- Blank 1 -- Field contains five space (20H) characters.
- Group ID -- Group number for the extension. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Blank 2 -- Field contains four space (20H) characters.

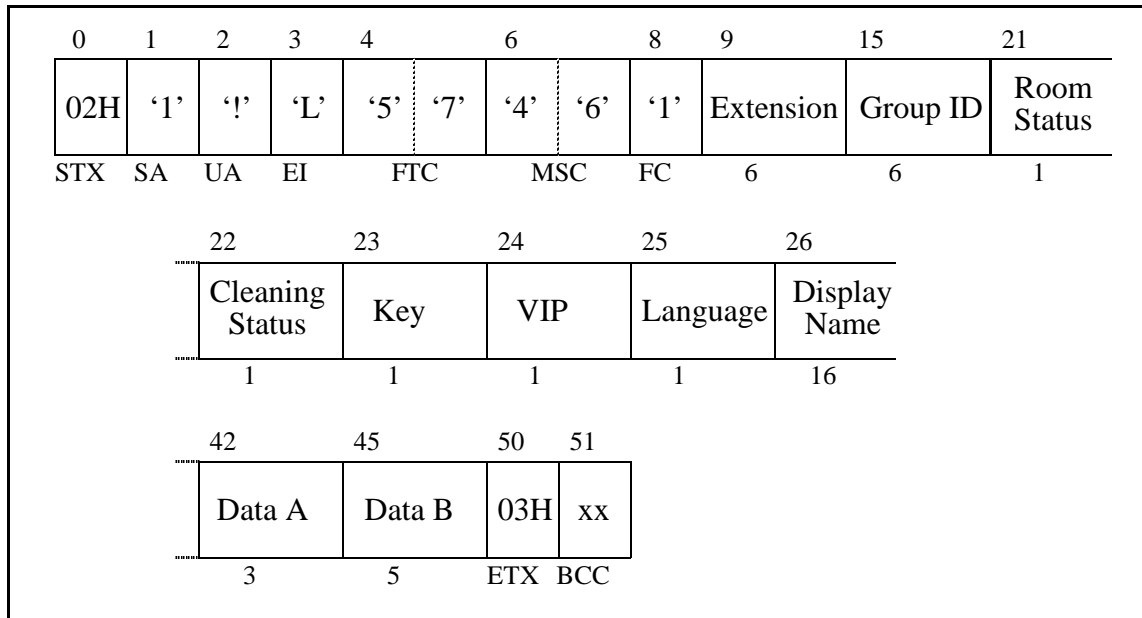
### Room Recovery (Model 90)

These messages are only used by the Model 90. When the PMS receives a Nop Test Recover Answer (70-2) message, it sends one Room Data Report message for each room. Prior to sending any recovery messages, however, a Recovery Start Report (70-3) must first be sent. Recovery is concluded by sending a Recovery End Report (70-4).

The Room Recovery messages use the following Function Codes:

- 57-1 -- Room Data Report
- 57-3 -- Guest Room Secretary Telephone
- 57-4 -- Connecting Room
- 57-5 -- Message Status Report
- 57-6 -- Wake Up

### Room Data Report



**Figure 4-50 Room Data Report**

If Room Status is set to '0' and Cleaning Status is set to either '3' or '4', the room data is cleared.

The message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Group ID -- Group number for the extension. If the group number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Room Status -- Room status. This flag is used in conjunction with the cleaning status flag to determine the status of the room.



- Cleaning Status -- Cleaning status. The possible combinations with room status are listed below:

Room	Clean	Status of the Room
0	3	Vacant (Ready to sell)
1	0	Stay (Occupied)
1	1	Stay, Cleaning in progress
1	2	Stay, Cleaning ended
1	3	Stay, Inspected
2	0	Stay, Departure Day
2	1	Stay, Departure Day, Cleaning in progress
0	0	Out (Checked Out)
0	1	Out, Cleaning in progress
0	2	Out, Cleaning ended
0	4	Out of Order (Cannot sell)

- Key -- Room key status:
  - 0 -- Key is in the key rack.
  - 1 -- Key is not in the key rack.
- VIP -- VIP category:
  - 0 -- Guest is not a VIP.
  - 1 -- Guest is a VIP.
- Language -- Language category for the guest. The possible values are:
  - 0 -- Not specified
  - 1 -- Japanese
  - 2 -- English
  - 3 -- German
  - 4 -- French
  - 5 -- Spanish
  - 6 -- Chinese
  - 7 -- Russian.
- Display Name -- The display name of the guest. The name must be left justified, and any remaining space must be filled with space (20H) characters.
- Data A & B-- Condition Data A and B. The contents of the option data are to be assigned on an individual hotel basis.

**Guest Room  
Secretary  
Telephone**

0	1	2	3	4	6	8	9	15	21	22		
02H	'1'	'!'	'L'	'5'	'7'	'1'	'7'	'3'	Boss	Secty	03H	xx
STX	SA	UA	EI	FTC		MSC		FC	6	6	ETX	BCC

**Figure 4-51 Guest Room Secretary Telephone**

The message fields are:

- Boss -- Extension number of the boss. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Secty -- Extension number of the secretary. The secretary's extension is now associated with the boss's extension. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

**Connecting Room**

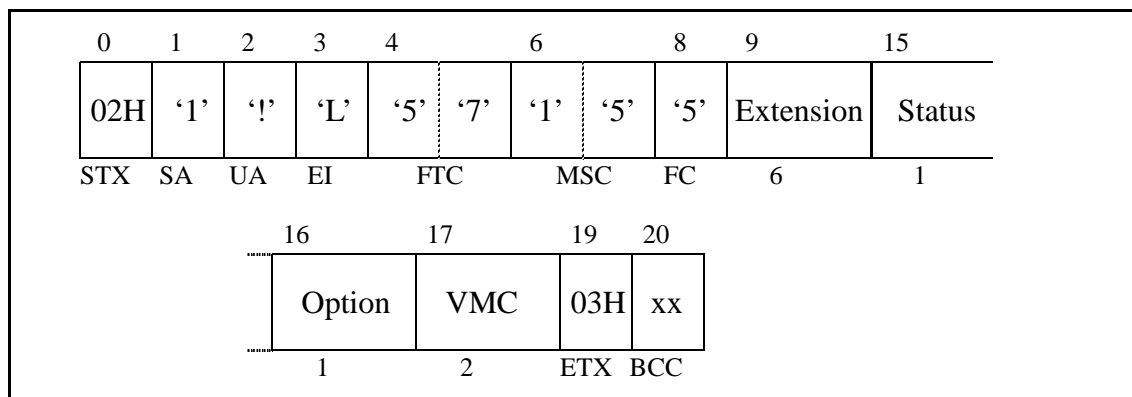
0	1	2	3	4	6	8	9	15	21	22		
02H	'1'	'!'	'L'	'5'	'7'	'1'	'7'	'4'	Master	Secondary	03H	xx
STX	SA	UA	EI	FTC		MSC		FC	6	6	ETX	BCC

**Figure 4-52 Connecting Room**

The message fields are:

- Master -- Extension number of the master extension. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Secondary -- Extension number of the secondary extension. The secondary extension is now associated with the master extension. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

## Message Status Report

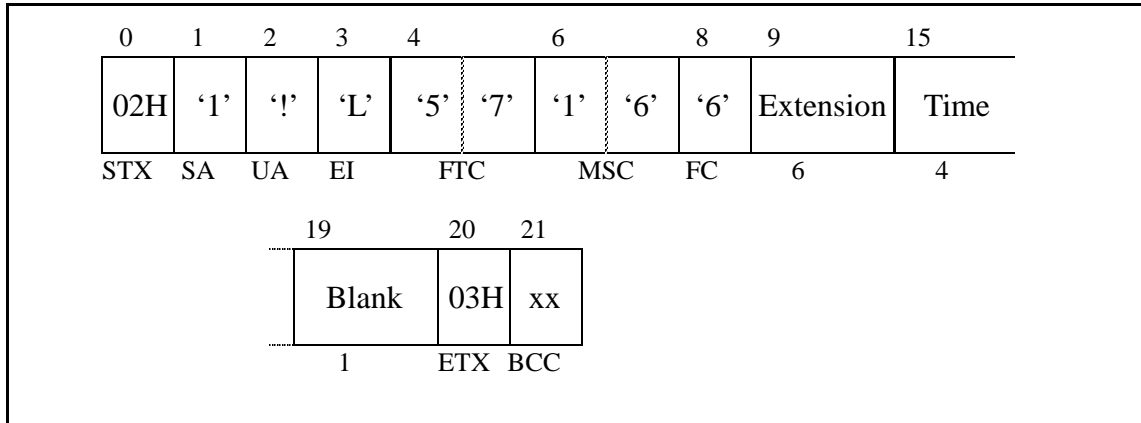


**Figure 4-53 Message Status Report**

The message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Status -- Message Waiting Lamp status. The status values are:
  - 0 -- No text messages waiting.
  - 1 -- Message waiting set by the NEAX.
  - 4 -- Message waiting set by the PMS.
  - 5 -- Message waiting set by the PMS and the NEAX.
- Option -- Message Waiting status option. This field must always contain zero ('0').
- VMC -- This is reserved for future use. Should be filled with two space (20H) characters.

### Wake Up



**Figure 4-54 Wake Up**

The message fields are:

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Time -- Time for which a wake up call is set. Format used is HHMM using military time.
- Blank -- A single space (20H) character.

### Direct Data Entry (Model 90)

These messages are used to allow numeric information to be entered through a guest room telephone and then be sent directly to the PMS. The three messages used are:

- 59-1 -- Direct Data Entry
- 59-8 -- Direct Data Entry Negative Answer
- 59-9 -- Direct Data Entry Positive Answer

## Direct Data Entry

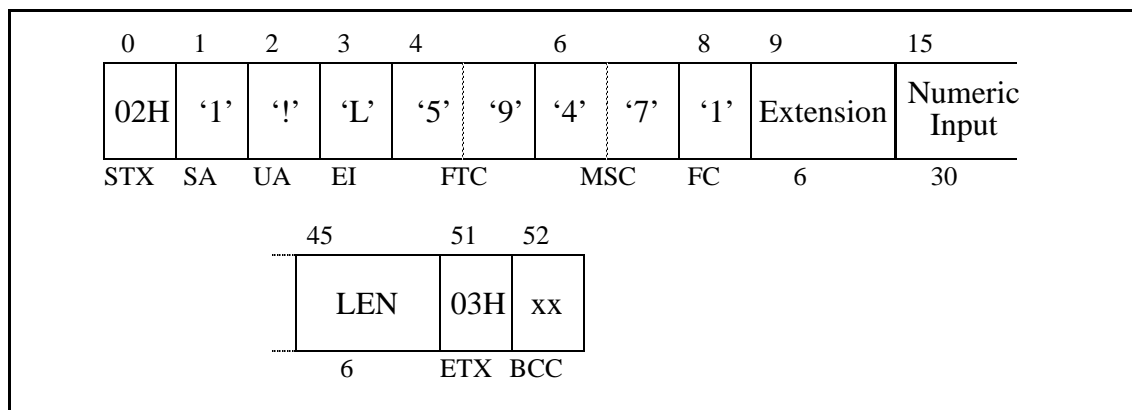


Figure 4-55 Direct Data Entry

- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Numeric Input -- Numeric information entered after the special access code.
- LEN -- Line Equipment Number of the extension.

## Direct Data Entry Answer

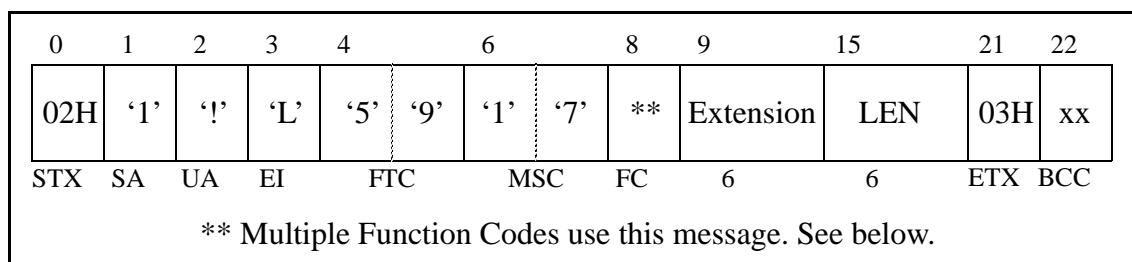


Figure 4-56 Direct Data Entry Answer

The message fields are:

- FC -- Function Codes that use this message format are: (FTC-FC)
  - 59-8 -- Direct Data Entry Negative Answer
  - 59-9 -- Direct Data Entry Positive Answer
- Extension -- Extension number. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- LEN -- Line Equipment Number of the extension.

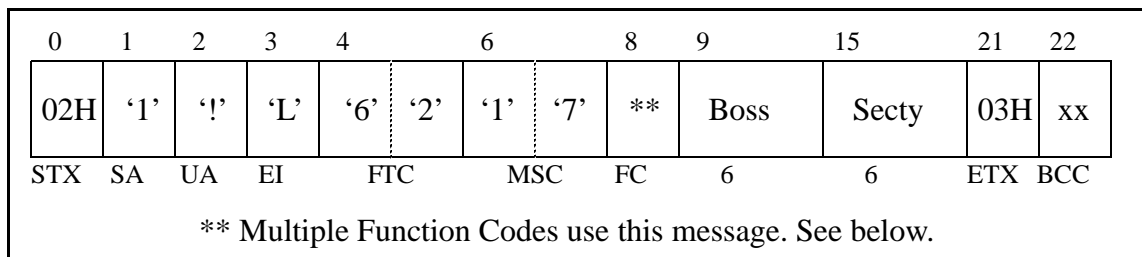
## Extension Connection

These messages are used to associate extensions. This association will be either in the form of a Boss/Secretary or of a Master/Secondary. In either case, both of the rooms to be connected must be checked in. There may only be one Secretary for each Boss, but a Secretary may be assigned to multiple Bosses. A Master and Secondary may only be assigned on a one to one basis.

The Extension Connection messages use the following Function Codes:

- 62-1 -- Guest Room Secretary Telephone (PMS)
- 62-2 -- Guest Room Secretary Telephone (NEAX)
- 62-3 -- Connecting Room Set
- 62-4 -- Connecting Room Cancel

### Guest Room Secretary Telephone

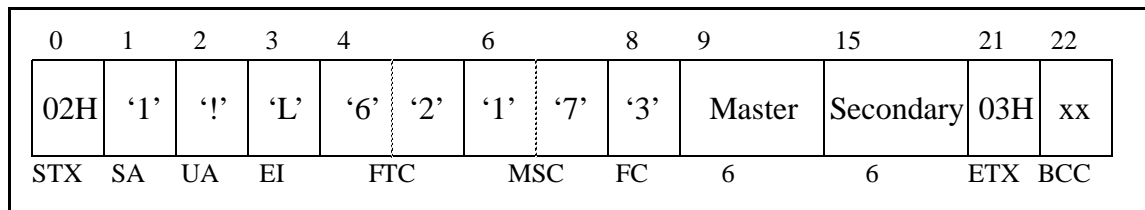


**Figure 4-57 Guest Room Secretary Telephone**

The message fields are:

- FC -- Function Codes that use this message format are: (FTC-FC)
  - 62-1 -- Guest Room Secretary Telephone (PMS)
  - 62-2 -- Guest Room Secretary Telephone (NEAX)
- Boss -- Extension number of the boss. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Secty -- Extension number of the secretary.
  - To cancel, completely fill with space (20H) characters.
  - To set, specify the secretary's extension, and it is now associated with the boss's extension. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

## Connecting Room Set

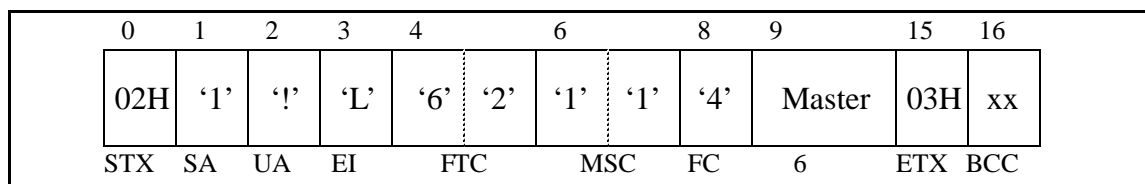


**Figure 4-58 Connecting Room Set**

The message fields are:

- Master -- Extension number of the master extension. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.
- Secondary -- Extension number of the secondary extension. The secondary extension is now associated with the master extension. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

## Connecting Room Cancel



**Figure 4-59 Connecting Room Cancel**

The message fields are:

- Master -- Extension number of the master extension. If the extension number is less than six digits, left justify the number and fill the remaining bytes with space (20H) characters.

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## Chapter 5    References

The following document was used to prepare this specification:

- NEAX2400 IMS Hotel System PMS Interface Specification (4252/4253/5250 Feature Package), ND-90265 (E)

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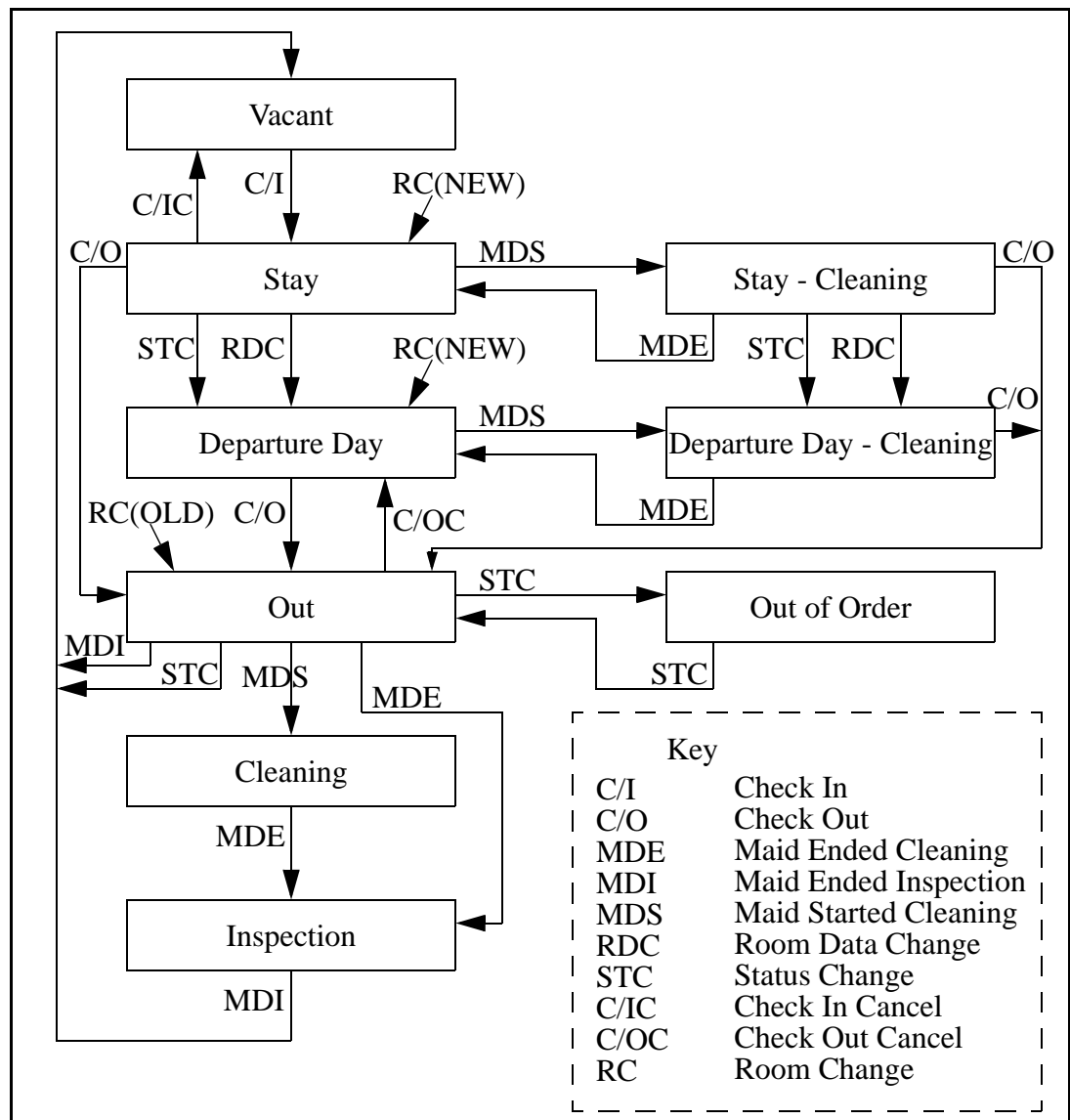
## Chapter 6 Glossary

BCC	Block Check Code. Computed by an exclusive OR of the message from the SA field to the ETX character, inclusive. This is used to assist in error control.
EI	Entry Index. Always 'L' for the PMS interface.
ETX	End of Text. Special control character used to denote the end of a message block. Always 03H.
FC	Function Code. Identifies a specific message within a feature code. The combination of feature code and function code uniquely identifies each message. See Appendix C for a list of codes.
FTC	Feature Code. Identifies a set of related messages. See Appendix B for a list of codes.
MSC	Message Counter. Specifies the length of the significant data in a message. The count begins with the FTC field and ends at the last character of the body (prior to the ETX character). The count includes the MSC field, which is always two characters.
MWL	Message Waiting Lamp.
NEAX	The NEAX2400 IMS system. It is a private branch exchange, which is a digital voice and data communication system for the office.
PMS	Property Management System. A set of software and hardware which manages a hotel's assets.
SA	System Address. Always '1' for the PMS interface.
STX	Start of Text. Special control character used to denote the start of a message block. Always 02H.
Suite Room	This is an optional feature of the NEAX that enables a group of extensions to be treated as the same extension in a room. Messages refer to all extensions in a suite by means of the suite's primary extension.
UA	Unit Address. Always '!' for the PMS interface.
Violation Code	This is a special FTC that ranges from 80H to FFH. It identifies a message from the PMS that the PBX (or UAP) has rejected for some reason. The FTC of the original message, subtract 80H from the violation code. The body of the original message is unchanged.

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# Appendix A Room Status

Normally, room status information is managed in the PMS. Whatever the room status may be, the NEAX operates according to the direction provided from the PMS. The NEAX processes calls within the range shown in Figure A-1. If the room status information provided from the PMS does not coincide with the status currently stored by the NEAX, a status closest to the room's status defined in the NEAX will be designated.



**Figure A-1 Room Status in the NEAX**

The room status information in the NEAX is processed as a validity check for maid status.

## Updating Room Status Information in the NEAX

The messages containing room status information, sent from the PMS, are as follows:

Check In:	16-1, 16-A, 16-B, 56-1
Check Out:	16-2, 56-2
Room Change:	20-1, 56-6
Room Data Image:	17-3, 17-7, 17-B
Maid Status Answer:	51-9
Check In Cancel:	56-4
Room Data Change:	61-1
Room Status Change:	61-3
Check Out Cancel:	56-5
Recovery Room Data Report:	57-1.

When updating the room status from the NEAX side, the update is performed as follows:

The validity of maid status messages (11-1, 11-2, 11-3, 12-1, 12-2, 12-3) is checked by the room status stored in the NEAX. After the status of the room has been updated, maid status messages are sent out to the PMS.

Maid Status Answer Back System: maid status messages are sent out to the PMS. The PMS will then check the validity of the messages and provide either a positive or negative result to the NEAX. This is used in Model 90 only.

For messages in Model 90, the Room Status field and the Cleaning Status field are provided so that details can be directed to the PMS. If certain hotels do not utilize maid status for their applications, the status can be designated as Vacant in the Check Out message.

## Clearing Room Data

The NEAX will clear the room data when the PMS sets the status of the room to "Vacant (Room Status=0, Cleaning Status=3)" or "Out of Order (Room Status=0, Cleaning Status=4)". (Note: Group Registration is cleared at the time of Check Out.) Therefore, in a hotel where the PMS does not provide maid status, the PMS must use a Check Out message to make the status of the room become "Vacant", and thus clear the room data.

## Dial Steps for Maid Status

A choice of three dialing patterns is available for Maid Status in the NEAX. Whichever pattern is selected, the "Inspection End" step must be included.

Dial Steps	Pattern 1	Pattern 2	Pattern3
Cleaning Start	1	-	-
Cleaning End	2	1	-

Inspection End            3                            2                            1

Cleaning Start, Cleaning End and Inspection End each have separate feature access codes to be dialed.

## Room Status and Cleaning Status

When the status of the room is sent to the NEAX from the PMS, the possible Room Status and Cleaning Status values, and their meanings, are as follows:

Status Code	Room Status	Cleaning Status	Status of the Room
V	0	3	Vacant (Ready to sell)
S	1	0	Stay (Occupied)
SC	1	1	Stay, Cleaning in progress
*	1	2	Stay, Cleaning ended
*	1	3	Stay, Inspected
D	2	0	Stay, Departure Day
DC	2	1	Stay, Departure Day, Cleaning in progress
0	0	0	Out (Checked Out)
C	0	1	Out, Cleaning in progress
1	0	2	Out, Cleaning ended
X	0	4	Out of Order (Cannot sell)

\* These have no status code.

These Status Codes are displayed on the Hospitality Attendant Console and Guest Information Display services for Administration Stations.

Status Codes can be changed within a range of two characters via the NEAX.

## Status of Check Out

The status of Departure Day can be changed by providing a Room Data Change message or a Room Status Change message from the PMS to the NEAX.

## Room Data Setting and Clearing in the NEAX

Various types of data such as Wake-Up Time and Do Not Disturb status can be set at the NEAX regardless of the status of the room. Also, a report pertaining to the particular feature status can be sent to the PMS, regardless of the status of the room. When services are set to a particular guest station, these services are not cleared until the Vacant status has entered for that room. In this way, services can be set for a vacant room, such as Room Cut Off. Also, if it is necessary to clear Room Cut Off before check in, the message to clear Room Cut Off should be sent to the NEAX at the time the status of the room, in the PMS, has become "Vacant". When Room Status is 0 and Cleaning Status changes from 0 to 2 at the time the Check Out message has been received, Group Registration is cleared (Group Announcement or Group Wake-Up is cleared), Room Cut Off is set, and all other feature statuses are held unchanged until a Cleaning Status of 3 or 4 is entered for that room.

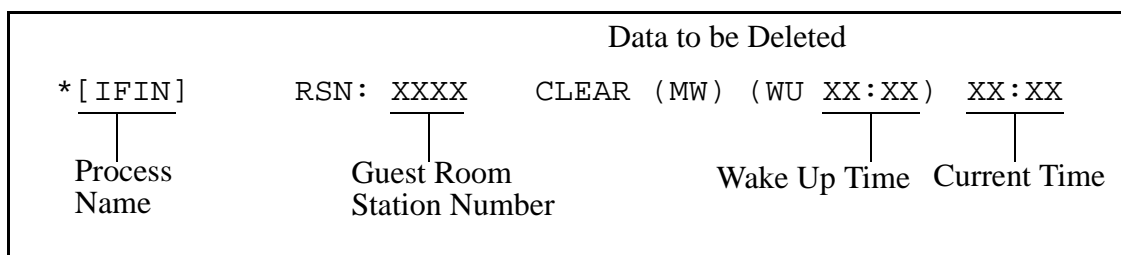




## Appendix B PMS Line Failure Printouts

### Normal Text

This data is printed out on the Hospitality printer when the guest room information of the NEAX is processed according to a message from the PMS. More specifically, this data is printed out when the NEAX data is forcibly changed using a message from the PMS.

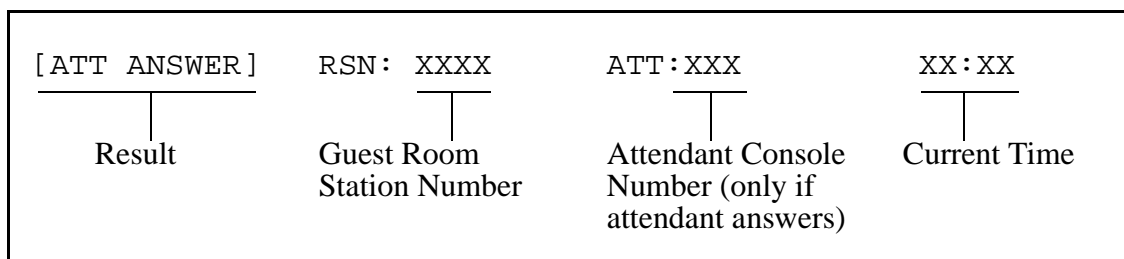


**Figure B-1 Forcible Change Printout**

**Table B-1 Process Name List**

Process Name	Explanation
IFIN	Inspection End
CCKO	Forcible Check Out
CCLN	Forcible Cleaning End
CINS	Forcible Inspection End
RMCH	Room Change

The following is printed out when VIP Wake-Up or Attendant Assisted Wake-Up is started.



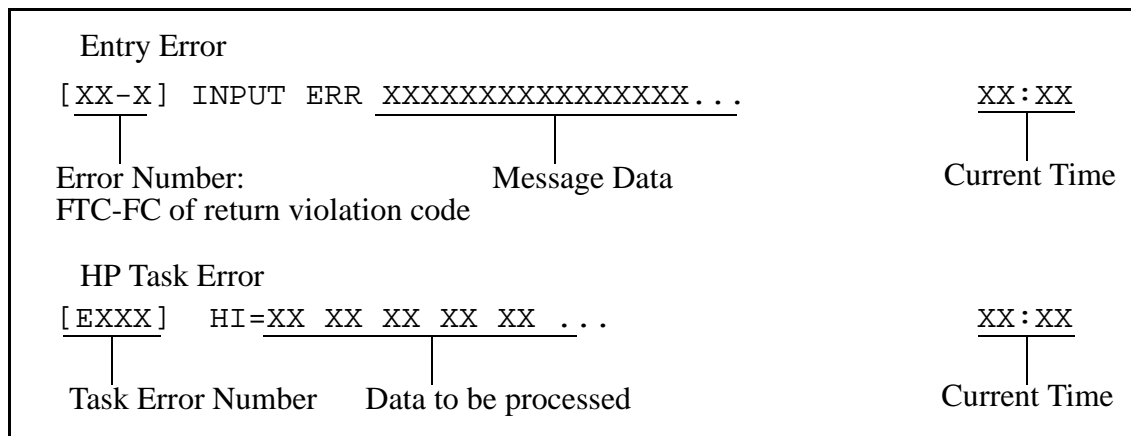
**Figure B-2 Assisted Wake Up Printout**

**Table B-2 Wake Up Results**

Wake Up Results	Explanation
ATT ANSWER	Attendant Console answers.
ATT CALLED	Attendant Console has been called.
ATT CALLING: ROOM STA ANSWER	While Attendant Console is calling, a guest room station has answered.
ATT NO ANSWER: ROOM STA CALLED	An Attendant Console has not answered, a guest room station has been called.
ROOM STA BUSY	A guest room station is currently on a call.

### Abnormal Events

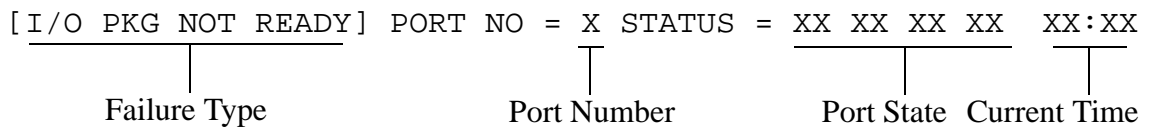
When the NEAX receives a message from the PMS, and the received data is abnormal or it cannot be processed by the NEAX, the message is printed out.



**Figure B-3 Abnormal Events Printout**

### Abnormal Port

If an external port of the NEAX is in an abnormal state, the abnormality will be printed out.



**Figure B-4 Abnormal Port Printout**

Table B-3 Types of Failure

Failure Type	Explanation
I/O PKG NOT READY	The I/O package is not mounted, or it is in the make-busy state.
DR OFF/TX NOT RDY	The data-ready has switched off during transmission. Does not become clear-to-send during transmission.
SINQ STOP/S-120	The status inquiry message has stopped.
LINE SUP. TIMEOUT	The monitor timer of the transmission supervisory program timed out, then restarted.
RCV SEQUENCE ERR.	A line control code which is invalid in reception processing has been received.
DATA LINK NOT RDY	Data-ready read has switched off.
SINQ TO/120 DOWN	System connection failure has been judged five minutes after SINQ STOP.
SND SEQUENCE ERR.	A line control code which is invalid in transmission processing has been received.
DTR OFF REQUESTED	Request to disconnect line from the connected system has been received.
S-120 STOP (MENT)	Indicates stoppage due to request to disconnect line from the connected system.
LINK CLOSE (MENT)	Line, package, etc. have been pulled out after requesting to disconnect line.

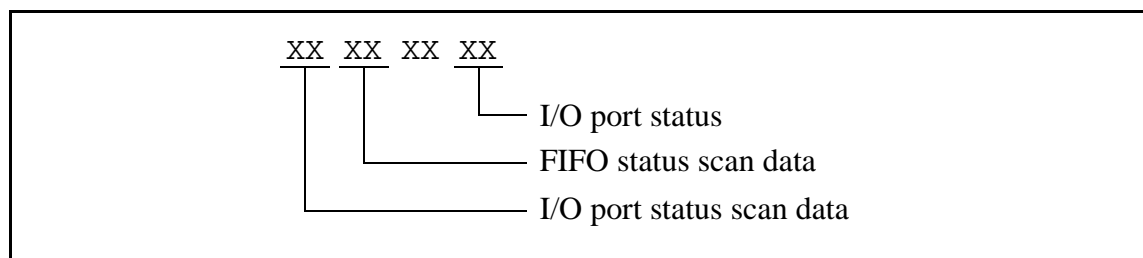
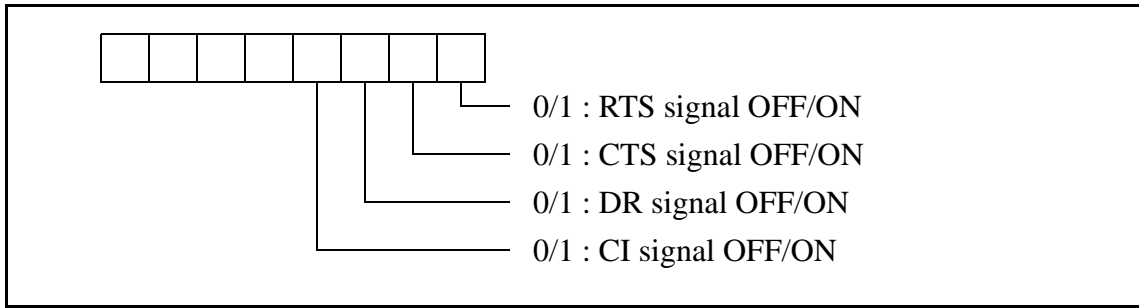
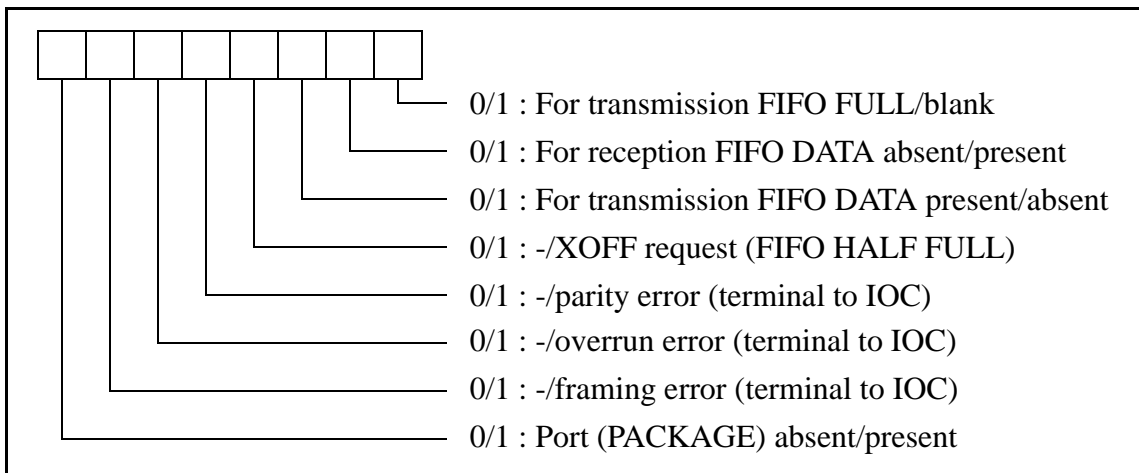


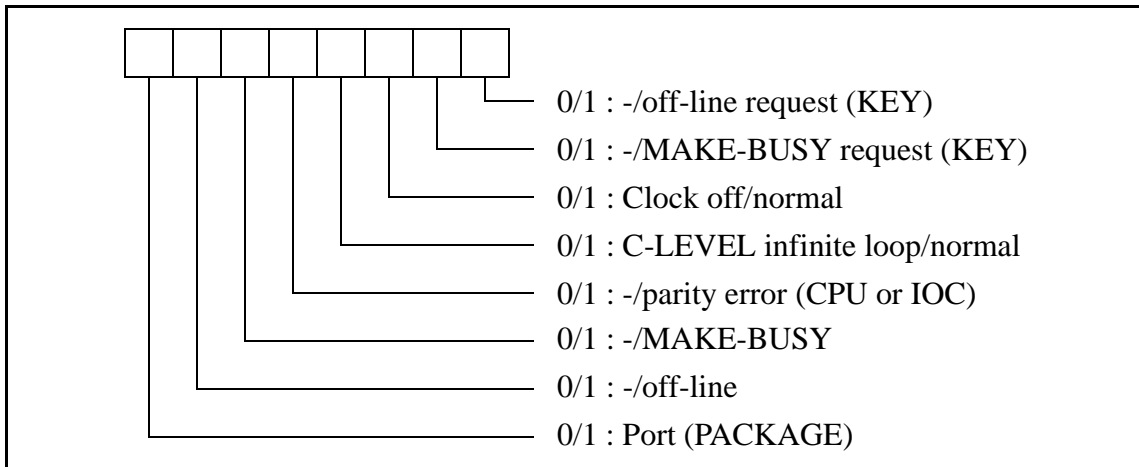
Figure B-5 Port State



**Figure B-6 I/O Port Status**



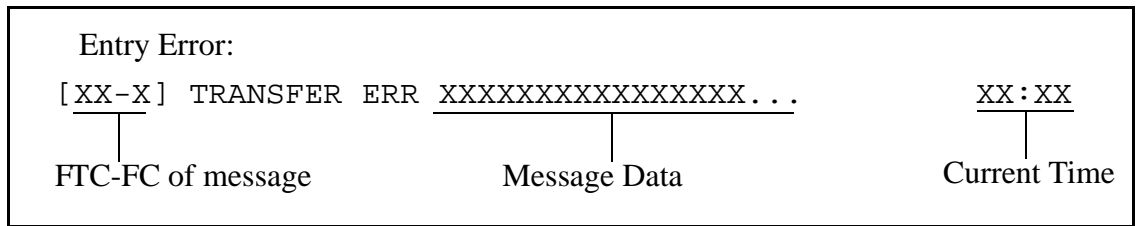
**Figure B-7 FIFO Status Scan Data**



**Figure B-8 I/O Port Status Scan Data**

## Transmission Failure

When a message has failed to be transferred from the NEAX to the PMS, the following error message will be printed out.



**Figure B-9 Transmission Failure Printout**

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## Appendix C Feature Codes

Feature Code	Description
70	Data Link Maintenance
11, 12, 51, 52	Maid Status
13, 53	Message Waiting Lamp Control
15	Restriction Control
16	Check-In/Out (Model 60)
56	Check-In/Out (Model 90)
17	Extension Report
17	Room Recovery (Model 60)
57	Room Recovery (Model 90)
19	Wake Up/Group Announcement
20	Room Move/Swap/Copy (Model 60)
21, 61	Room Data Change
59	Direct Data Entry (Model 90)
62	Extension Connection

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## Appendix D Function Codes

FTC	FC	Description	Source	Model
70	0	Nop Test Normal Answer	NEAX	ALL
70	2	Nop Test Recover Answer	NEAX	ALL
70	3	Recovery Start Report	PMS	ALL
70	4	Recovery End Report	PMS	ALL
70	5	Data Link Release Request	PMS/NEAX	ALL
70	6	Data Link Release Confirmation	PMS/NEAX	ALL
70	8	Extension Number Request	PMS	ALL
70	F	Nop Test	PMS	ALL
11	1	Cleaning Start (Guest)	NEAX	ALL
11	2	Cleaning End (Guest)	NEAX	ALL
11	3	Inspection End (Guest)	NEAX	ALL
11	4	Out of Order (Guest)	NEAX	ALL
12	1	Cleaning Start (Administration)	NEAX	ALL
12	2	Cleaning End (Administration)	NEAX	ALL
12	3	Inspection End (Administration)	NEAX	ALL
51	1	Guest Room 1	NEAX	90
51	2	Guest Room 2	NEAX	90
51	3	Guest Room 3	NEAX	90
51	4	Guest Room 4	NEAX	90
51	5	Guest Room 5	NEAX	90
51	6	Guest Room 6	NEAX	90
51	7	Guest Room 7	NEAX	90
51	8	Negative Answer	PMS	90
51	9	Positive Answer	PMS	90
52	1	Administration 1	NEAX	90
52	2	Administration 2	NEAX	90
52	3	Administration 3	NEAX	90
52	4	Administration 4	NEAX	90
13	1	MWL On	PMS	ALL
13	2	MWL Off	PMS	ALL
13	3	MWL On	NEAX	ALL

FTC	FC	Description	Source	Model
13	4	MWL Off	NEAX	ALL
53	1	MWL Status	PMS	90
53	2	MWL On (FDT)	NEAX	90
53	3	MWL Off (FDT)	NEAX	90
15	1	Restriction Control	PMS	ALL
15	2	Restriction Control	NEAX	ALL
16	1	Check In 1	PMS	60
16	2	Check Out	PMS	60
16	5	Check Out MWL Off Report	NEAX	60
16	6	Check Out MWL On Report	NEAX	60
16	A	Check In 2	PMS	60
16	B	Check In 3	PMS	60
16	C	Check Out Outgoing Call Report	NEAX	ALL
16	D	Check Out Message Waiting Report	NEAX	60
56	1	Check In	PMS	90
56	2	Check Out	PMS	90
56	4	Check In Cancellation	PMS	90
56	5	Check Out Cancellation	PMS	90
56	6	Room Change	PMS	90
56	7	Provisional Check In	NEAX	90
56	8	Provisional Check Out	NEAX	90
56	9	Check Out Message Waiting Report	NEAX	90
17	E	Extension Delete Report	NEAX	ALL
17	F	Extension Assignment Report	NEAX	ALL
17	1	Room Image Set 1 (Normal Request)	PMS	60
17	2	Room Image Set 1 (Normal Answer)	NEAX	60
17	3	Room Image Set 1 (Recovery Request)	PMS	60
17	4	Room Image Set 1 (Recovery Answer)	NEAX	60
17	5	Room Image Set 2 (Normal Request)	PMS	60
17	6	Room Image Set 2 (Normal Answer)	NEAX	60
17	7	Room Image Set 2 (Recovery Request)	PMS	60
17	8	Room Image Set 2 (Recovery Answer)	NEAX	60
17	9	Room Image Set 3 (Normal Request)	PMS	60

FTC	FC	Description	Source	Model
17	A	Room Image Set 3 (Normal Answer)	NEAX	60
17	B	Room Image Set 3 (Recovery Request)	PMS	60
17	C	Room Image Set 3 (Recovery Answer)	NEAX	60
57	1	Recovery - Room Data Report	PMS	90
57	3	Recovery - Secretary Telephone	PMS	90
57	4	Recovery - Connecting Room	PMS	90
57	5	Recovery - Message Status Report	PMS	90
57	6	Recovery - Wake Up	PMS	90
19	1	Wake Up Setting	NEAX	ALL
19	2	Wake Up Cancellation	NEAX	ALL
19	3	Wake Up Execution Result	NEAX	ALL
19	4	Wake Up Setting	PMS	ALL
19	5	Wake Up Cancellation	PMS	ALL
19	6	Group Announcement Setting	NEAX	ALL
19	7	Group Announcement Cancellation	NEAX	ALL
19	8	Group Announcement Execution Result	NEAX	ALL
19	9	Group Announcement Setting	PMS	ALL
19	A	Group Announcement Cancellation	PMS	ALL
20	1	Room Move	PMS	60
20	2	Room Swap	PMS	60
20	5	Room Copy	PMS	60
21	1	Room Data Change 60	PMS	60
21	2	Group Formation	PMS	ALL
21	3	Group Cancellation	PMS	ALL
21	4	Reservation Setting	PMS	60
21	5	Reservation Cancellation	PMS	60
21	6	Guest Name Change	PMS	60
61	1	Room Data Change 90	PMS	90
61	3	Room Status Change	PMS	90
61	4	Room Key Status Change (Model 90)	PMS	90
59	1	Direct Data Entry	NEAX	90
59	8	Direct Data Entry Negative Answer	PMS	90

<b>FTC</b>	<b>FC</b>	<b>Description</b>	<b>Source</b>	<b>Model</b>
59	9	Direct Data Entry Positive Answer	PMS	90
62	1	Guest Room Secretary Telephone	PMS	90
62	2	Guest Room Secretary Telephone	NEAX	90
62	3	Connecting Room Set	PMS	90
62	4	Connecting Room Cancel	PMS	90

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