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Digital Monitoring Products

SCS-1R Receiver

Host Communication Specification

Using SCS-1062 Processor

Version 906, LT-0086

http://buy.dmp.com/dmp/products/documents/LT-0086.pdf

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1 SCS-1R Host Communication

1.1 Overview

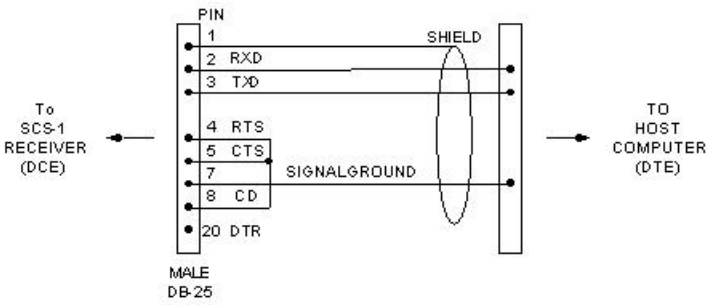
The DMP SCS-1R and SCS-105 Receivers each provide one RS-232 output port to a Host Automation Computer. This output provides an asynchronous representation of reports transmitted to the receivers by DMP alarm panels.

2 Hardware Specifications

The SCS-1R Receiver supplies two output ports arranged vertically on the rear of the unit. The top connector is for the Host Automation output and the second connector is for the local Activity Log printer.

The Host Automation output is standard RS-232 at 1200, 9600, or 19,200 baud (see section 10.1 Host Baud), 8 bits per character with no parity (Not Adjustable), and one stop bit. The cable connections used are shown below.

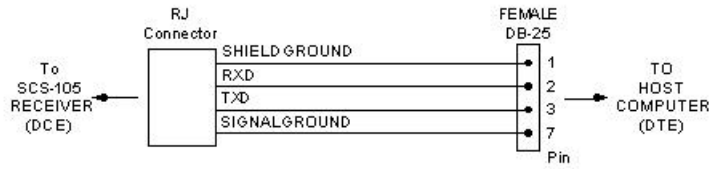
SCS-1R Receiver Host Cable



The SCS-1R Receiver does not require any hardware or software handshaking signals from a Host Automation Computer. The SCS-1R Receiver is full duplex and prepared to send and receive signals to and from the Host Automation Computer at any time.

Note 1: The Host Output baud rate is adjusted for 1200, 9600, or 19200 at the SCS-1R Receiver SET BAUD RATE prompt.

SCS-105 SDLC Receiver Host Cable



3 Communications Overview

A report is sent to the Host Automation Computer immediately after it is received from a DMP alarm panel in the field. The SCS-1R Receiver report is made up of three parts: Report Header, Report Message, and Termination Character. The Report Header is made of supplementary information described in section 5. The Report Message from the alarm panel may either be formatted as a DMP Serial 1 or Serial 3 message depending on the alarm panel that transmitted the report and the SCS-1R Receiver programming. DMP Serial 1 and Serial 3 message formats are described in sections 7 and 8. **The SCS-1R Receiver report termination character is always CR (HEX 0D).** For normal operation, after each report is sent, the SCS-1R Receiver must receive an ASCII acknowledgment from the Host Automation Computer (See section 4).

4 Host Automation Acknowledgment

After each report is sent by the SCS-1R Receiver and then correctly interpreted by the Host Automation Computer, the Host Automation Computer must respond with ACK, CR (HEX 06, 0D) or ACK (HEX 06). If the report cannot be interpreted, the Host Automation Computer may respond with NAK, CR (HEX 15, 0D) or NAK (HEX 15).

Upon receiving NAK, the SCS-1R Receiver repeats the report. It repeats the same report when receiving NAKs, typically five times. At that point the SCS-1R Receiver displays "AUTOMATION NOT RESPONDING" on the Membrane Keypad LCD and it begins demanding manual operator acknowledgment for incoming emergency messages. See LT-0717 SCS-1R Operators Guide for the selectable number of SCS-1R Receiver report attempts to the Host Automation Computer before a Host Failure Message is displayed.

If the SCS-1R Receiver does not receive either ACK or NAK within a selectable time, typically five seconds, it will try the report again. If it does not get a response from the Host Automation Computer after the selectable number of attempts, typically five, it will display a Host Failure Message on the Membrane Keypad LCD and again begin demanding manual operator acknowledgment. See See LT-0717 SCS-1R Operators Guide for the selectable time period without acknowledgment before an SCS-1R Receiver report is repeated to the Host Automation Computer.

While in the Host Failure Mode, the SCS-1R will try each new report once. After a report has been attempted without success, it will be deleted from memory and the SCS-1R Receiver will attempt to send the next report. When communication is restored with the Host Automation Computer, the display will be automatically cleared of the last manually acknowledged alarm message and revert back to acknowledgment by the Host Automation Computer. Host Failure and Restoral reports are always logged on the local activity printer of the SCS-1R Receiver.

4.1 Receiver/Panel Time Updates

The SCS-1R time, day, and date can be set from the host automation computer by sending the following string from the host automation computer to the SCS-1R.

!Dhhmmssnnddyyw$^{C}_{R}$

!D	=	Time Send Command					
hh	=	Hours	(01 - 12 am, 81 - 92 pm	**dd**	=	Day	(01 - 31)
mm	=	Minutes	(00 - 59)	**yy**	=	Year	(00 - 99)
ss	=	Seconds	(00 - 59)	**w**	=	Day of Week	(1 - 7, 1 = Sunday)
nn	=	Month	(01 - 12)	**CR**	=	Carriage return, Hex 0D	

SCS-1R ACK is **+_$^{C}_{R}$** (plus, space, carriage return) as an acknowledgment when the time update message was properly received.

SCS-1R NAK is **-_TIME$^{C}_{R}$** (minus, space, "TIME", carriage return) as a non-acknowledgement when the time update was formatted correctly but was received with out-of-range characters. Resend time update.

SCS-1R NAK is **-_<ccc...ccc>$^{C}_{R}$** (minus, space, "characters received by SCS-1R", carriage return) as a non-acknowledgement when the time update was not properly formatted when received. Resend time update.

It is highly recommended that the receiver time be updated by the host automation computer at the following events:

1. The "System Start Up" message is sent by the receiver to host automation computer
2. The host automation computer time, day, or date is reset
3. Once daily at 2:30AM

The 2:30AM daily time update is important since the SCS-1R will set the time, day, and date in DMP control panels. DMP control panels will begin asking for a time update between 3:00AM and 5:00AM daily. If the SCS-1R gets a time update from the host automation computer at least every 25 hours and the UPDATE TIME TO PANELS option is programmed Yes in the HOST TIME TO PANEL option, the SCS-1R will give time updates to control panels.

Note: The time update characters shown above are the only characters that will be accepted by the SCS-1R receiver. GMT characters must not be included in the time update.

5 SCS-1R Receiver Report Header

The Report Header is made up of special characters that may be inserted before the message. The information and number of characters that make up the Header is based on the SCS-1R Receiver programming. **Once programmed, the length of the Report Header does not change.** The Report Header always ends with a space character (HEX 20).

5.1 Report Header Examples

Three examples of a Report Header and the associated SCS-1R Receiver Host Configuration programming follow:

Example 1: (Factory Default)

```
Rec.  Dash  Acct.  Space                                          Start Character       =       NONE
No.   Char.  No.   Char.                                         CRC                   =       No
 |      |     |      |                                          Sequence Number       =       No
 1      -   54321    ~     <--- Example header                   Line Number Length    =       -
 1      2   34567    8     <--- Character position
```

Example 2:

```
CRC   Rec.  Dash  Acct.  Space                                   Start Character       =       NONE
Char. No.   Char.  No.   Char.                                   CRC                   =       Yes
  |    |      |     |      |                                    Sequence Number       =       No
75CF   1      -   ~~675    ~     <--- Example header         Line Number Length    =       -
1234   5      6   78901    2     <--- Character position
```

Example 3:

```
Start  CRC   Seq.  Rec.  Line  Acct.  Space                     Start Character       =       STX
Char.  Char. No.   No.   No.    No.   Char.                     CRC                   =       Yes
  |      |    |     |     |      |      |                       Sequence Number       =       Yes
STX    75CF  43     1    05    ~4890   ~     <--- Example header   Line Number Length    =       2
 1     2345  67     8    90    12345   6     <--- Character position
```

5.2 Start Character

Based on the SCS-1R Receiver programming, a Start Character can be added as the first character in the Report Header.

5.3 CRC-16 Error Checking

Based on the SCS-1R Receiver programming, a four character (hexadecimal ASCII encoded) CRC-16 calculation can be added to the Report Header.

5.4 Sequence Number

Based on the SCS-1R Receiver programming, a two character report Sequence Number can be added to the Report Header.

5.5 Line Number Length

Based on the SCS-1R Receiver programming, one or two characters that represents the SCS-1R Receiver line card that received the message from the DMP alarm panel can be added to the Report Header.

When communicating with panels using the HST/NET format, the SCS-1R Receiver indicates the appropriate line number for the following receiver generated messages. The SCS-1R is designed to operate with only one SCS-101 Network Interface Card.

- Panel Not Responding
- Panel Response Restored
- Panel Substitution
- Check-in/Substitution Overflow
- Network Trouble
- Network Restore

5.6 Account Number

The characters representing the alarm panel account number in the Report Header will always be five in length. When an alarm panel transmits a report with an account number that is less than five digits, that number will be right justified in the five character positions and unused character positions will be spaces (HEX 20).

6 SCS-1R Report Message

Starting in the next character position after the Report Header ends, the Report Message begins. This portion of the report defines the actual event that has occurred at the panel. This can be a zone alarm, zone trouble, opening, closing, system event, etc. Typically the event is received by the SCS-1R Receiver at the same time the event occurred at the panel.

However, DMP alarm panels have the ability to store Non-Immediate messages in their memory for transmission at a later time i.e., opening, closing, schedule change, etc. This allows several messages to be accumulated over time. Then all can be transmitted to the central station on one phone call. This call may take place at the daily or weekly recall test, during an alarm transmission or when the alarm panel memory is full. **This feature greatly reduces long distance toll costs for central stations.**

The Report Message portion of a report may or may not be prefaced with a Minutes Ago Insert. The Minutes Ago Insert is sent by a panel if it is programmed to delay non-immediate messages (see section 6.1 for details).

6.1 & Minutes Ago Insert (12/22/09)

Since a single telephone call from an alarm panel may contain messages which occurred at different times, some means must be provided to indicate the time and date of occurrence. Any message which contains a delayed event, will be preceded by a Minutes ago string. The string begins with a "&" (HEX 26) character, is the first character following the Report Header, and is six characters in length.

```
       Minutes
Event    Ago
  |       |                                    This example illustrates that
  &     42508          <--- Example message     the message that follows the Minutes Ago string
  1     23456          <--- Character position  occurred 29 days, 12 hours, 28 minutes ago


Minutes ago event     1       character
Number of minutes     5       characters
                    ---------------------------
                      6       Total Characters
```

1. Minutes Ago Event: Character Range = & (HEX 26)

2. Minutes Ago: Character Range = 00001 - 65535 (right justified, zero padded)

After the minutes ago string, a Serial 3 message will follow. A maximum minutes ago of 65,535 will indicate that the event occurred 45 days, 12 hours, 15 minutes ago.

```
From a non-Canadian panel dialer, the minutes ago string will never appear with the following immediate messages.

Zone Alarm    A, za, Za              Zone Verify             K, zk, Zk
Zone Trouble  T, zt, Zt              Zone Fail               F, zf, Zf
Zone Restore  R, zr, Zr              Zone Force Arm          B, zb, Zb
Zone Bypass   X, zx, Zx              Service Man             M, Zm
Zone Reset    Y, zy, Zy              Late to Close           L, Zq (type LA)
Equipment     E, e,  Ze              System Alarm, Trouble,  S, s, Zs
```

```
From a non-Canadian panel dialer, the minutes ago string may appear with the following non-immediate messages.

Door Access         J, Zj              Primary Schedule      i, Zl (type PR)
Armed               C, Zq (type CL)    Secondary Schedule    n, Zl (type SE)
Disarmed            O, Zq (type OP)    Code Number Addition  P, Zu (type AD)
Permanent Schedule  N, Zl (type PE)    Code Number Deletion  p, Zu (type DE)
Temporary Schedule  I, Zl (type TE)    Code Number Change    U, Zu (type CH)
```

Note: PC Log reports (network, cellular, or serial 232) from a panel to a PC always contain the minutes ago string for all messages.

Note: From a Canadian panel dialer, the minutes ago string insert will appear with all messages.

6.2 Serial 1 Overview

The Serial 1 message format dates back to the early 1980s. It is based on fixed positions for information content and a constant character string length. As needed, additional features and information was added during previous upgrades. SCS-1R Receiver options: Zone Number Length (see section 6.2.1), User Number Length (see section 6.2.2), and Use "z" Zone Messages (see section 6.2.3) were previously added to allow three and four character zone and user numbers, and to provide 16 character area names with zone messages. The complete Serial 1 specifications are contained in section 7.

6.2.1 Zone Number Length

The zone number length of a Serial 1 message can be adjusted from two to four characters based on the SCS-1R Receiver option: Zone Number Length. Once the option is set, the zone number length of a message will not change. Zone numbers less than the option setting will be right justified and padded with zeros.

6.2.2 User Number Length

The user number length of a Serial 1 message can be adjusted from two to four characters based on the SCS-1R Receiver option: User Number Length. Once the option is set, the user number length of a message will not change. User numbers less than the option setting will be right justified and padded with zeros.

6.2.3 Use "z" Zone Messages

The Use "z" Zone Messages option was added to the SCS-1R Receiver programming with the introduction of the 1912XR alarm panel. When programmed YES, additional area name information is sent to the Host Automation Computer when a lower case "z" zone message (see section 7.3) is received from an alarm panel. When the option is programmed NO, lower case "z" zone messages are converted to A T R (see section 7.1) and X Y (see section 7.2) type messages before they are sent to the Host Automation Computer.

6.2.4 Serial 1 Alarm Panels as of 10/4/01

Serial 1 A T R Messages		Serial 1 Lower Case "z" Messages
1600	1912	1912XR
1612	XR5	XR20 Prior to Version 201
1712	XR6	XR200 Prior to Version 102
1812	XR10	
1512		

6.3 Serial 3 Overview

The Serial 3 message format (see section 8) is introduced with the implementation of the SCS-1R Receiver, the SCS-105 Receiver version 208, and the XR200 Alarm Panel version 102 firmware upgrades. Serial 3 allows 16 character user names to be sent to the Host Automation Computer. Additionally, the design of the Serial 3 format provides for the addition of new information in later upgrades **without the need to immediately** upgrade the SCS-1R Receiver or the Host Automation Computer software. The complete Serial 3 Messages specifications are contained in section 8.

The Serial 3 message format is **based on variable position and variable length** messages. The fields of the message are delimited by a Back-Slash "\" (HEX 5C) and within the fields, numeric and text information are delimited with a Double-Quote "(HEX 22).

Serial 3 messages are constructed to allow the Host Automation Computer software to scan through the string using the field delimiter "\" as a field start/stop identifier detecting the fields that are needed for the already identified event and to discard other information that is not currently recognized. **Also, within a field, numeric or text characters may be included or not included. A text delimiter (double-quote) is inserted just before text characters are sent to identify that text characters are included.** This allows future DMP upgrades to be implemented in the field without an immediate SCS-1R Receiver upgrade or Host Automation Computer upgrade. As time permits, the Host Automation Company will implement the new information to allow continued and profitable industry leading data processing.

6.3.1 Serial 3 Messages Option

The SCS-1R Receiver Serial 3 Messages option is provided to convert Serial 3 messages that are received from alarm panels back to Serial 1 messages (see section 7).

6.3.2 Serial 3 Alarm Panels

XR200 Version 102 or higher	XR2400F
XR20 Version 201 or higher	XR500E
XR40	XR2500F
XRSuper6	XR100
XR200-485	XR100N
XR500	XT30
XR500N	XT50

6.4 System Start-up Message

The system start-up message is transmitted each time A.C. power is removed and reapplied to the SCS-1R Receiver or when the reset button is pressed. Like other messages, it follows in the next character position after the Report Header with one exception. The five digit account number is always five space characters. It is 26 characters in length and is illustrated below:

Star Char.	Space Char.	Star Char.	Space Char.	Six Char.	Space Char.	Six Char.	Space Char.	Two Char.	Space Char.	Star Char.	Star Char.	Three Char.	
*	~	*	~	**SYSTEM**	~	**START**	~	**UP**	~	*	*	~~~	<--- Example message
1	2	3	4	567890	1	23456	7	89	0	1	2	345	<--- Character position

_____*_*_SYSTEM_START_UP_*_* 26 characters

6.5 Termination Character

All reports sent to the Host Automation Computer end with a carriage return (HEX 0D). Serial 1 reports contain a space before the carriage return. All Serial 3 reports do not contain an extra space before the carriage return.

7 Serial 1 Messages

Serial 1 Messages are only sent to the Host Automation Computer when an alarm panel sends the message in the Serial 1 message format. Serial 1 messages are based on a "character position" format in that they provide fixed lengths for text and numeric data plus fixed positions in the message string. An example zone alarm follows:

```
A00010EAST SMOKE
```

7.1 A T R K F B W D H Zone Event Messages

DMP alarm panels that provide Serial 1 ten character zone names transmit zone event messages in the following format:

```
         1
1234567890123456
A00011EAST SMOKE
em..mtnnnnnnnnnn

         e = Zone Event        1        character
      m..m = Zone Number     2 to 4     characters based on SCS-1R programming
         t = Zone Type         1        character
nnnnnnnnnn = Zone Name         10       characters
                            ------------------------------------------------------
                              14 to 16    Total Characters
```

```
1.    Zone Event:              Character Range = A T R K F B W D H

      A = Alarm                Alarm
      T = Trouble              Trouble
      R = Restore              Zone was restored to a normal condition
      K = Verify               Successful operation of a zone during a Walk Test
      F = Fail                 Unsuccessful operation of a zone during a Walk Test
      B = Force Arm            Zone was armed while in a non-normal condition
      W = Fault                Zone activated only once in cross zone or fire verify
                               programming or Service message
      D = XMTR Low Battery     Wireless transmitter zone with a low battery
      H = XMTR Missing         Wireless transmitter zone not reported within programmed
                               supervision time
```

```
2.    Zone Number:             Character Range  = 01 - 9999
```

```
3.    Zone Type:               Character Range  = 0 - 7

      0 = Blank                No zone type information assigned
      1 = Fire                 Fire initiating - Smoke detectors, pull stations,
                               water flow switches, etc.
      2 = Burglary             Burglary initiating - Contacts, PIRs, Glass Breaks, etc.
      3 = Supervisory          Supervisory initiating - Gate Valves, Low Temp,
                               Pump running, etc.
      4 = Panic                Holdup initiating buttons, Keypad panics
      5 = Emergency            Pendants, other non-medical emergency devices
      6 = Auxiliary 1          Custom initiating
      7 = Auxiliary 2          Custom initiating

4.    Zone Name:               Character Range = 0 - 9, A - Z, etc.
```

7.2 X Y Zone Bypass and Reset Messages

DMP alarm panels that provide Serial 1 ten character zone names transmit a zone bypass (X) or reset (Y) message when a zone was bypassed and removed from service or reset and returned to service.

```
         1
1234567890123456789
X00010001FRONT DOOR
emmmmuuuunnnnnnnnn

         e = Zone event        1        character
      mmmm = Zone number     2 to 4     characters based on SCS-1R programming
      uuuu = User number     2 to 4     characters based on SCS-1R programming
nnnnnnnnnn = Zone name         10       characters
                            ------------------------------------------------------
                            15 to 19    Total Characters
```

```
1.    Zone Event               Range = X Y
        This field describes the event that occurred.

      X = Bypass               Zone was bypassed and taken out of immediate service
      Y = Reset                Zone was reset and put back into service
```

```
2.    Zone Number              Range = 00 to 9999
        This field is the number of the zone on which the event occurred.
```

```
3.    User Number              Range = 00 to 9999 and SWG, SCH, SVC, or REM
        This field contains the number of the user who bypassed or reset the zone.
        There are four special user number character sets that identify the zone
        bypass or reset event as being generated by the panel itself or a service
        user.  The following table describes these special user numbers.

                 Receiver Programming User Number Length     =   2     3     4
Zone was bypassed or reset automatically by the panel           SW    SWG   SWG<Space>
Zone was bypassed by the panel because of automatic arming      SC    SCH   SCH<Space>
Zone was bypassed or reset by a service technician              SV    SVC   SVC<Space>
Zone was bypassed or reset by a remote command                  RE    REM   REM<Space>
```

7.3 "z" Zone Event Messages

DMP alarm panels that provide Serial 1 16 character zone and area names transmit zone event messages using the lower case "z" Zone Message format. This message will be sent to the Host Automation Computer in lieu of the A T R message described in section 7.1, and the X Y message described in section 7.2, **when the SCS-1R Receiver is programmed YES for Use "z" Zone Messages** in SCS-1R Receiver Host Configuration programming. If the receiver is programmed NO for Use "z" Zone Messages, all lower case "z" zone messages received by a panel are converted to A T R and X Y messages (see sections 7.1 and 7.2). This zone message always contains a 16 character zone name and a 16 character area name.

```
       1         2         3         4
1234567890123456789012345678901234567890123456789012345678901234567
za00010000216NORTH OFFICE PIR16S. WEST BUILDING
zemmmmuuuutppnnnnnnnnnnnnnnnnqqaaaaaaaaaaaaaaaa

   z = z (lower case)      1       character
   e = Zone event          1       character
mmmm = Zone number       2 to 4    characters based on SCS-1R programming
uuuu = User number       2 to 4    characters based on SCS-1R programming
   t = Zone type           1       character
  pp = Zone name length    2       characters
n..n = Zone name          16       characters based on zone name length
  qq = Area name length    2       characters
a..a = Area name          16       characters based on area name length
                      ------------------------------------------------------
                        43 to 47       Total Characters
```

```
1.    z                       Range = z
```

```
2.    Zone Event              Range = a t r k f b w d h x y
        This field describes what event took place on the zone.
      a = Alarm               Alarm
      t = Trouble             Trouble
      r = Restore             Zone was put back into service
      k = Verify              Successful operation of a zone during a Walk Test
      f = Fail                Unsuccessful operation of a zone during a Walk Test
      b = Force Arm           Zone was armed while in a non-normal condition
      w = Fault               Zone activated in less than programmed alarm conditions
                              or Service message
      d = XMTR Low Battery    Wireless transmitter zone with a low battery
      h = XMTR Missing        Wireless transmitter zone not reported in programmed
                              supervision time
      x = Bypass              Zone was bypassed and taken out of service
      y = Reset               Zone was reset and put back into service
```

```
3.    Zone Number             Range = 00 to 9999
        This field is the actual number of the zone for which the event occurred.
```

```
4.    User Number             Range = 00 to 9999 and SWG, SCH, SVC, or REM
        This field will only contain characters greater than zeros when the zone event
        is a bypass, reset, or force arm.  There are four special user number character
        sets that identify the zone bypass, reset, or force arm event as being generated
        by the panel itself or a service user.  The following table describes these
        special user numbers.

                  Receiver Programming User Number Length     =   2     3     4
Zone was bypassed or reset automatically by the panel           SW    SWG   SWG<Space>
Zone was bypassed by the panel because of automatic arming      SC    SCH   SCH<Space>
Zone was bypassed or reset by a service technician              SV    SVC   SVC<Space>
Zone was bypassed or reset by a remote command                  RE    REM   REM<Space>
```

"z" Zone Event Messages (continued)

```
5.    Zone Type               Range = 0 to 7
        This one character field provides the Host Automation Computer with the zone type.

      0 = Blank               No zone type information desired
      1 = Fire                Fire initiating - Smoke detectors, pull stations,
                              water flow switches, etc.
      2 = Burglary            Burglary initiating - Contacts, PIRs, Glass Breaks, etc.
      3 = Supervisory         Supervisory initiating - Gate Valves, Low Temp,
                              Pump running, etc.
      4 = Panic               Holdup initiating buttons, Keypad panics
      5 = Emergency           Pendants, other non-medical emergency devices
      6 = Auxiliary 1         Custom initiating
      7 = Auxiliary 2         Custom initiating
```

```
6.    Zone Name Length        Range = 16 (Always)
        This two character field provides the Host Automation Computer with the
        number of characters that will be sent in the next field.
```

```
7.    Zone Name               Range = 0 - 9, A - Z, etc.
        This field provides the Host Automation Computer with the printable ASCII
        text characters stored in the memory of the alarm panel that typically
        describe the zones location and purpose for the keypad display.
```

```
8.    Area Name Length        Range = 16 (Always)
        This two character field provides the Host Automation Computer with the
        number of characters that will be sent in the next field.
```

```
9.    Area Name               Range = 0 - 9, A - Z, etc.
        This field provides the Host Automation Computer with the printable ASCII
        text characters stored in the memory of the alarm panel that typically
        describes the area for arming purposes.
```

7.4 O C L - Disarmed, Armed, and Late to Arm

This Serial 1 message indicates that an area was armed, disarmed, or was not armed by the scheduled time stored within the alarm panel memory. It always contains a ten character area name.

```
         1
12345678901234567
C000104BREAK ROOM
euuuurraaaaaaaaaa

         e = Area event        1        character
      uuuu = User number     2 to 4     characters based on SCS-1R programming
        rr = Area number       2        characters
aaaaaaaaaa = Area name        10        characters
                            ------------------------------------------------------
                            15 to 17    Total Characters
```

```
1.    Area Event               Range = O C L
        This field describes the event that occurred.

      O = Disarmed             Area was disarmed (opened)
      C = Armed                Area was armed (closed)
      L = Late to Arm          Area was not armed by the scheduled time stored
                               within the alarm panel memory
```

```
2.    User Number              Range = 00 to 9999, SCH, SVC, or REM
        This field is the number of the user who disarmed or armed the area.

                 Receiver Programming User Number Length     =   2     3     4
Area automatically armed/disarmed because of a schedule          SC    SCH   SCH<Space>
Area was armed/disarmed by a service technician                  SV    SVC   SVC<Space>
Area was armed/disarmed during a remote session                  RE    REM   REM<Space>
```

```
3.    Area Number              Range = 01 to 80
        This field provides the Host Automation Computer with the area number that
        was armed, disarmed, or was late to arm based on the schedule stored
        within the alarm panel memory.

        When Area Format in the SCS-1R Receiver programming is set to "DECIMAL", the
        two ASCII characters in the area number field equal the area number.
             Examples:    08 = Area 8   and   02 = Area 2.

        When Area Format in the SCS-1R Receiver programming is set to "BINARY", the two
        ASCII characters in the area number field represent the area number.  The
        following table illustrates the ASCII characters and their corresponding area
        numbers.

        ASCII Characters     AREA            ASCII Characters     AREA
              80       =       1                  08       =       5
              40       =       2                  04       =       6
              20       =       3                  02       =       7
              10       =       4                  01       =       8
```

```
4.    Area Name                Range = 0 - 9, A - Z, etc.
        This field provides the Host Automation Computer with the printable ASCII
        text characters stored in the memory of the alarm panel.  These characters
        equal words that typically describe the area for arming purposes.
```

7.5 P p U - Code Number Addition, Deletion, and Change

This Serial 1 message indicates that a user code was added, deleted, or changed in the alarm panel memory.

```
123456789
P00010002
euuuuhhhh

   e = Code event                                  1     character
uuuu = User number adding, deleting, or changing  2 to 4  characters based on SCS-1R programming
hhhh = User number added, deleted, or changed     2 to 4  characters based on SCS-1R programming
                                                 ------------------------------------------------
                                                  5 to 9  Total Characters
```

```
1.    Code Event              Range = P p U
        This field describes the event that occurred.

      P = Code Addition             A user was added to the panel memory
      p = Code Deletion             A user was deleted from the panel memory
      U = Code Change               A users code was changed in the panel memory
```

```
2.    User Number             Range = 00 to 9999
        This field is the number of the user who added, deleted, or changed the
        second user number.
```

```
3.    User Number             Range = 00 to 9999
        This field is the number of the user whose user code was added, deleted,
        or changed.
```

7.6 J - Door Access Granted

This Serial 1 message indicates that a user code was entered at a device and the door relay was activated.

```
1234567
J000108
euuuudd

   e = Access event               1     character
uuuu = User number              2 to 4  characters based on SCS-1R programming
  dd = Device address             2     characters
                                ------------------------------------------------
                                 5 to 7  Total Characters
```

```
1.    Access Event            Range = J
        This field describes the event that occurred.  "J" represents a door access.
```

```
2.    User Number             Range = 00 to 9999
        This field is the number of the user who was granted a door access.
```

```
3.    Device Address          Range = 01 to 08
        This field is the address of the device where the access was granted.
```

7.7 N I n i - Permanent, Temporary, Primary, Secondary Schedule Change

This Serial 1 message indicates that a schedule stored within the memory of the alarm panel has been added, deleted, or changed. Alarm panel programming can be configured to provide one of the two following options:

(A) The alarm panel can be configured to provide one Permanent schedule that typically is enhanced by a Temporary schedule. The Temporary schedule expires and is deleted automatically from panel memory just after its closing time.

(B) The panel can be configured to provide a Primary and a Secondary schedule. The Secondary schedule is not deleted just after its closing time as a Temporary schedule is. The Primary/Secondary option typically provides for two opening and two closing times per day that do not automatically expire and are permanently stored in the alarm panel memory.

```
       1
1234567890123456          Character Count
N200010830853043          Example Message:  User Number Length = 4
eouuuuiiiikkkkry          Field Identifiers

   e = Schedule event       1     character
   o = Opening day          1     character
uuuu = User number        2 to 4  characters based on SCS-1R programming
iiii = Opening time         4     characters
kkkk = Closing time         4     characters
   r = Area number          1     character
   y = Closing day          1     character
                       ------------------------------------------------------
                         14 to 16      Total Characters
```

```
1.    Schedule Event           Range = N I n i
        This field describes the event that occurred.
      N = Permanent                  Permanent schedule was changed
      I = Temporary                  Temporary schedule was changed and will be deleted
                                     at the end of the   schedule
      n = Primary                    Primary schedule was changed
      i = Secondary                  Secondary schedule was changed
```

```
2.    Opening Day              Range = 1 to 7 (1 = Sunday, 7 = Saturday)
        This field describes the day of the week that the schedule will begin.
```

```
3.    User Number              Range = 00 to 9999
        This field is the number of the user who changed the schedule.
```

```
4.    Opening Time             Range = 0000 to 9159
        This field describes the opening time for the schedule.  It can contain
        characters that represent a 12 hour clock or that equal military time.
        When an "STX" character is used for the Start Character in the SCS-1R
        Receiver programming, this field will equal military time with a range of
        0000 to 2359.
        When this field represents a 12 hour clock, ASCII eight is added to the tens
        character of the hour to indicate P.M.
             Examples:  0830 = 08:30 AM  and  8830 = 08:30 PM  and  9030 = 10:30 PM
```

N I n i - Permanent, Temporary, Primary, Secondary Schedule Change (continued)

```
5.    Closing Time             Range = 0000 to 9159
        This field describes the closing time for the schedule.  It can contain
        characters that represent a 12 hour clock or that equal military time.
        If an "STX" character is used for the Start Character is the SCS-1R
        Receiver programming, this field will equal military time with a range
        of 0000 to 2359.
        When this field represents a 12 hour clock, ASCII eight is added to the tens
        character of the hour to indicate P.M.
             Examples:  0830 = 08:30 AM  and  8830 = 08:30 PM  and  9030 = 10:30 PM
```

```
6.    Area Number              Range = 0 to 8
        This field provides the Host Automation Computer with the area number
        associated with the schedule that was changed.  When the alarm panel
        programming does not provide for schedules per area, this field will be "0".
```

```
7.    Closing Day              Range = 1 to 7 (1 = Sunday, 7 = Saturday)
        This field describes the day of the week that the schedule will end.
```

7.8 M - Service Code

This Serial 1 message indicates that a service person has entered a number at the SVC CODE prompt at a keypad. When the service person enters their number and that number is recorded by the Host Automation Computer, their time can be tracked at an installation.

```
 123456    Character Count
 M12345    Example Message
 ebbbbb    Field Identifiers

    e  = Service code event     1     character
bbbbb  = Service number         5     characters
                              ----------------------
                                6     Total Characters
```

```
1.    Service Code Event       Range = M
        This field describes the event that occurred.  "M" represents a service user
        entering a number at the keypad to access programming or operating a user function.
```

```
2.    Service Code             Range = 00000 to 65535
        This field is a number that the service user entered at the alarm panel keypad.
        The validity of the entered number is not included in this message.
```

7.9 E - Equipment Message

This Serial 1 message provides information about the service that was performed at an account. A service person enters the information at a keypad and it is recorded at the central station for billing.

```
          1
 123456789012    Character Count
 E1234530001N    Example Message:  User Number Length = 4
 egggggvmmmmx    Field Identifiers

    e  = Equipment event      1     character
ggggg  = Equipment number     5     characters
    v  = Action code          1     character
 mmmm  = Zone number        2 to 4  characters
    x  = Customer caused?     1     character
                         -------------------------
                          10 to 12 Total Characters
```

```
1.    Equipment Event          Range = E
        This field describes the event that occurred.
```

```
2.    Equipment Number         Range = 0 - 9, A - Z, etc. (ASCII)
        This field is a number that the service person entered at the alarm panel
        keypad.  It represents a model number for a piece of equipment.  Equipment
        numbers are assigned to model numbers by the users of this feature (dealer
        or host automation company).  When the Equipment number is sent by this
        message, the user interprets the number as the model number of a piece of
        equipment for service records and billing purposes.
```

```
3.    Action Code              Range = 1 to 6
        This field is a number that represents the action that was taken by the service
        person on the piece of equipment defined in the Equipment Number described above.

      1 - Repair               4 - Remove
      2 - Replace              5 - Adjust
      3 - Add                  6 - Test
```

```
4.    Zone Number              Range = 00 to 99
        This field is a number that represents the zone number where the action was
        taken by the service person on the piece of equipment.  If the service person
        enters "00", a zone number is not involved in the action.
```

```
5.    Customer Caused          Range = N, Y
        This field is a character that represents whether the service person decided that
        the cause of the service action was customer related or was not customer related.
```

7.10 e - Equipment Message with Six Character Equipment Identifier

This Serial 1 message provides information about the service that was performed at an account. A service person enters the information at a keypad and it is recorded at the central station for billing. It can be sent by an alarm panel in lieu of the upper case "E" equipment message described in section 7.9 to provide a six character equipment identifier.

```
         1
1234567890123     Character Count
e770KPL50001Y      Example Message:  User Number Length = 4
eggggggvmmmmx      Field Identifiers

     e = Equipment event           1     character
gggggg = Equipment characters      6     characters
     v = Action code               1     character
  mmmm = Zone number             2 to 4  characters
     x = Customer caused?          1     character
                                 -------------------------
                                  11 to 13 Total Characters
```

```
1.    Equipment Event          Range = e
        This field describes the event that occurred.
```

```
2.    Equipment Characters     Range = 0 - 9, A - Z, etc. (Alpha numeric)
        This field is alpha numeric characters that the service person entered at
        the alarm panel keypad.  They represent a model number for a piece of equipment.
        Equipment characters are assigned to model numbers by the users of this feature
        (dealer or host automation company).  When the Equipment characters are sent by
        this message, the user interprets the characters as the model number of a piece
        of equipment for service records and billing purposes.
```

```
3.    Action Code              Range = ~, 1 to 6
        This field is a number that represents the action that was taken by the service
        person on the piece of equipment defined in the Equipment characters described
        above.  When a "space" is sent, a Model 856 Service Module is in use.

        ~ - 856
        1 - Repair              4 - Remove
        2 - Replace             5 - Adjust
        3 - Add                 6 - Test
```

```
4.    Zone Number              Range = 001 to 999
        This field is a number that represents the zone number where the action was taken
        by the service person on the piece of equipment.  If the service person enters
        "000", a zone number is not involved in the action.
```

```
5.    Customer Caused          Range = N, Y, ~
        This field is a character that represents whether the service person decided that
        the cause of the service action was customer related or was not customer related.
        When a "space" is sent, a Model 856 Service Module is in use and the customer
        caused information is not included.
```

7.11 s - System Message with Modifier

This Serial 1 message specifies a general system event that occurred at the alarm panel and supplies a modifier to provide additional information.

```
1234567                      Character Count
s001001                      Example Message:  User Number Length = 4
esssjjj                      Field Identifiers

   e = System Event          1    character
 sss = System Message        3    characters
 jjj = Modifier              3    character
                          ------------------------
                             7    Total Characters
```

```
1.    System Event             Range = lower case s
        This field describes the event that occurred.
```

```
2.    System Message           Range = 001 to 999
        This field describes what event took place.

System Msg            Description
   001       =        Device Missing
   002       =        Device Restored
   050       =        Abort with User Number
   070       =        Checkin                 NOT SENT TO HOST AUTOMATION
   071       =        Substitution            NOT SENT TO HOST AUTOMATION
   072       =        Substitution            NOT SENT TO HOST AUTOMATION
```

```
3.    Message Modifier        Range = 000 to 999
        This field further defines the event.  When the event is Device Missing
        or Device Restored, the device address is given.  When the event is Abort,
        the user number is given.
```

7.12 v - Variable Length Message with Type

This Serial 1 message provides custom text generated at the alarm panel. Currently no Message Types are defined.

```
         1         2         3
12345678901234567890123456789012345678901234567890123              Character Count
v0028THIS IS 28 CHARACTER MESSAGE                                   Example Message:  28 Characters
ettllmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmmm                  Field Identifiers
   e = Message Event          1      character
  tt = Message Type           2      characters
  ll = Message Length         2      character
m..m = Message Text        01 to 99  characters
                         ------------------------------
                           6 to 104  Total Characters
```

```
1.    Event                  Range = v
        This field indicates that this is a custom text message from the panel.
```

```
2.    Message Type           Range = 01 to 99
        This field is the type for the custom text.  Currently, no types are defined.
```

```
3.    Message Text Length    Range = 01 to 99
        This field indicates the number of characters in the custom text message.
```

```
3.    Message Text           Range = 0 - 9, A - Z, etc.
```

7.13 S - System Message without Modifier

This Serial 1 message specifies general system alarms, troubles, or restorals that occurred at the alarm panel or receiver.

```
123    Character Count
S01    Example Message
ess    Field Identifiers

   e = System event     1     character
  ss = System code      2     characters
                      ----------------------------
                        3     Total Characters
```

```
1.    System Event           Range = upper case S
        This field describes the event that occurred.  S represents a general
        system alarm, trouble, or restoral message that occurred at an alarm
        panel or the SCS-1R Receiver.
```

```
2.    System Code            Range = 00 to 99
```

7.13.1 System Message Table

S00 A.C Power Restored SERVICE NOTIFICATION FEATURE	A.C Power was restored to the panel. This message is a restoral for S08.
S01 Standby Battery Restored SERVICE NOTIFICATION FEATURE	The panel battery voltage has restored to greater than 12.6 VDC at the last battery test. This message is a restoral for S09.
S02 Communication Line Level Restored SERVICE NOTIFICATION FEATURE	The panel has detected that communication to the cellular tower has restored. This messages is only sent when Checkin is set to ADP3 in path communications of an XR500/XR100 using software version 202 or higher. The message is a restoral for S10. NOT IMPLEMENTED - The signal decibel level between the panel and the receiver under MPX communication was restored to appropriate levels. This message is a restoral for S10.
S03 Panel Tamper Restored SECURITY FEATURE	The panel's built-in tamper circuit was restored to a normal condition. This message is a restoral for S11 and S74.
S04 Backup Communication Line Restored SERVICE NOTIFICATION FEATURE	The panel's backup line of communication was restored. This message is a restoral for S12.
S05 Panel Ground Restored SERVICE NOTIFICATION FEATURE	The panel's built-in ground detection circuit was restored to normal. This message is a restoral for S13.
S06 System Not Armed by Scheduled Time SECURITY FEATURE	This message is transmitted 10 minutes after the closing time of the panel's internal schedule when the schedule is not extended or the panel is not armed within the 10 minutes. The keypad alerts the user that the system is not armed and allows them to extend the schedule. Panel programming provides an option to activate this message.
S07 Automatic Recall Test OK AUTOMATIC COMMUNICATION FEATURE	Automatic communication test typically sent every 24 hours. Some panels allow for variable time periods and defer operation. All combination fire/burg panels allow test to be deactivated. Also see S88 and S97.
S08 WARNING: A.C. Power Failure SERVICE NOTIFICATION FEATURE	Indicates main A.C. Power is not present or is less than 85% of normal. Message is sent after panel programmed delay time (15 seconds to 9 hours) has expired. The restoral message is S00.
S09 WARNING: Low Standby Battery SERVICE NOTIFICATION FEATURE	Indicates that standby battery has fallen below 11.9 VDC. Battery is tested at 15 minutes past each hour. The restoral message is S01.

System Message Table (continued)

S10 WARNING: Low Communication Line Level SERVICE NOTIFICATION FEATURE	The panel has detected that communication to the cellular tower was missing for more than 180 seconds. This messages is only sent when Checkin is set to ADP3 in path communications of an XR500/XR100 using software version 202 or higher. The restoral message is S02. NOT IMPLEMENTED - The signal decibel level between the panel and the receiver under MPX communication is less than appropriate levels. The restoral message is S02.
S11 WARNING: Panel Tamper SECURITY FEATURE	The panel has detected that while all areas were disarmed, the panel's built-in tamper circuit was placed in an open condition. The restoral message is S03. Also, see S74.
S12 WARNING: Panel Backup Communication Fail SERVICE NOTIFICATION FEATURE	Indicates that the backup channel of communication has failed. This message is only transmitted on the main channel of communication when either of the following two events occur: (1) When HST or NET is programmed for main and a dialer is programmed for backup and the dialer line(s) fail to get a message transmitted in 10 attempts or (2) When HST or NET is programmed as backup and the message acknowledgment from the receiver is not received by the panel. The restoral message is S04.
S13 WARNING: Panel Ground Fault SERVICE NOTIFICATION FEATURE	The panel's built-in ground detection circuit was placed in an open condition. The restoral message is S05.
S14 WARNING: Non-Alarm Message Overflow COMMUNICATION SECURITY FEATURE	The panel detected that many non-alarm messages occurred in an extremely short period of time and its communication buffer could not hold all of them. After the messages that the communication buffer could hold are sent, this message (S14) is sent to indicate that some non-alarm messages were not transmitted and were not retained in panel memory. Examples of these kind of messages are openings, closings, schedule changes, and code changes. Also see S18, S40, S41, S42, and S44.
S15 * * AMBUSH * * SILENT PANIC FEATURE	The end-user has initiated a silent alarm because of an emergency situation. It occurs when the user enters the user code (PIN) assigned to user number position one. Panel programming allows for this message to be optional.
S16 WARNING: Panel Not Responding HIGH LINE COMMUNICATION SECURITY FEATURE	The receiver detects that the supervised account (high security) has failed to communicate within its proper time window. This message is only sent when the panel's main communication is set for MPX, DNET, HST, or NET. MPX (multiplex) is a supervised direct wire connection and DNET, HST, NET is packet data network communications such as Ethernet or long range radio. The restoral message is S17.

System Message Table (continued)

S17 Panel Response Restored HIGHLINE COMMUNICATION SECURITY FEATURE	The receiver has detected that communications with the supervised account has been restored. This message is a restoral for S16. This message can also be generated when a network panel sends a checkin message after receiver reset or powerup.
S18 ALARM: Zone Alarm Overflow COMMUNICATION SECURITY FEATURE	The panel detected that many zone alarms occurred in an extremely short period of time and its communication buffer could not hold all of them. After the alarms that the communication buffer could hold are sent, this message (S18) is sent to indicate that some zone alarm messages were not transmitted and were not retained in panel memory. Also, see S14, S40, S41, S42, and S44.
S19 WARNING: New Panel on Line SECURITY FEATURE	The receiver is indicating that a new account has become active. This message is sent any time the panel's communication programming is setup for the first time or when a change is made in the communication programming. In addition, Serial 3 panels may append communication programming information. See Programming Sub-Message
S20 ALARM: Carrier Locked on Line SERVICE NOTIFICATION FEATURE	The receiver is indicating that it detects an obstructing amount of noise on a MPX line. What ever the source, the amount of noise is disrupting the MPX (high security) communication to all accounts on the MPX line.
S21 Automation Not Responding	The receiver has detected that the Host Automation Computer has failed to acknowledge a receiver message indicating communication failure. The restoral message is S22.
S22 Automation Restored	The receiver has detected that communication with the Host Automation Computer has been restored. This message is a restoral for S21.
S23 Panel Test Signal Received COMMUNICATION FEATURE	A manually operated communication test has been performed at the panel keypad.
S24 TROUBLE: SCS-1R Test Signal Not Received	NOT SENT TO HOST AUTOMATION COMPUTER - DMP Remote Link Only
S25 SCS-1R Power Up Signal Received	NOT SENT TO HOST AUTOMATION COMPUTER - DMP Remote Link Only
S26 WARNING: Auxiliary Fuse Trouble SERVICE NOTIFICATION FEATURE	The panel has detected that electrical power is unavailable for the auxiliary output circuit. The restoral message is S27.

System Message Table (continued)

S27 Auxiliary Fuse Restored SERVICE NOTIFICATION FEATURE	The panel has detected that electrical power is now available for the auxiliary output circuit. This message is a restoral for S26.
S28 WARNING: Telephone Line 1 Trouble SERVICE NOTIFICATION FEATURE	The panel detects that its main telephone connection is disconnected or is in a non-operable state. Also in the case where a Model 893 Dual Telephone Line module is attached, the panel detects that the supervised telephone line does not have sufficient voltage/current to support communications. The restoral message is S29.
S29 Telephone Line 1 Restore SERVICE NOTIFICATION FEATURE	The panel detects that its main telephone connection is now operational.This message is a restoral for S28.
S30 WARNING: Telephone Line 2 Trouble SERVICE NOTIFICATION FEATURE	The panel detects that the second telephone line attached to the Model 893 Dual Telephone Line module does not have sufficient voltage/current to support communications. The restoral message is S31.
S31 Telephone Line 2 Restored SERVICE NOTIFICATION FEATURE	The panel detects that the second telephone line attached to the Model 893 Dual Telephone Line module is now operational. This message is a restoral for S30.
S32 ALARM: Supervised Wireless Interference	A wireless receiver connected to the panel has detected RF interference while the system was armed. The restoral message is S89.
S33 ALARM: Early Morning Ambush SILENT PANIC FEATURE	At disarming, an end-user is indicating a silent alarm because of an emergency situation. This occurs when the end-user does not enter a second user code (PIN) or has not activated the appropriate input device within the programmed number of minutes after disarming. Panel programming allows for this message to be optional.
S34 WARNING: Alarm Bell Silenced FALSE ALARM REDUCTION FEATURE	The panel's main bell circuit was manually silenced by a code entry at a panel keypad.
S35 Alarm Bell Returned to Normal	NOT IMPLEMENTED
S36 Time/Date Set by Operator	NOT SENT TO HOST AUTOMATION COMPUTER
S37 Security Information Management Startup	NOT SENT TO HOST AUTOMATION COMPUTER
S38 WARNING: Bell Circuit Trouble SERVICE NOTIFICATION FEATURE	The panel's internal bell supervision circuit has detected an inappropriate bell circuit supervision voltage during standby operation. The restoral message is S39.

System Message Table (continued)

S39 Bell Circuit Restored SERVICE NOTIFICATION FEATURE	The panel's internal bell supervision circuit now detects the appropriate bell circuit supervision voltage during standby operation. This message is a restoral for S38.
S40 ALARM: Fire Zone Alarm Overflow COMMUNICATION SECURITY FEATURE	The panel detected that many fire type zone alarms occurred in an extremely short period of time and its communication buffer could not hold all of them. After the alarms that the communication buffer could hold are sent, this message (S40) is sent to indicate that some fire type zone alarm messages were not transmitted and were not retained in panel memory. Also see S14, S18, S41, S42, and S44.
S41 ALARM: Panic Zone alarm Overflow COMMUNICATION SECURITY FEATURE	The panel detected that many panic type zone alarms occurred in an extremely short period of time and its communication buffer could not hold all of them. After the alarms that the communication buffer could hold are sent, this message (S41) is sent to indicate that some panic type zone alarm messages were not transmitted and were not retained in panel memory. Also, see S14, S18, S40, S42, and S44.
S42 ALARM: Burglary Zone Alarm Overflow COMMUNICATION SECURITY FEATURE	The panel detected that many burglary type zone alarms occurred in an extremely short period of time and its communication buffer could not hold all of them. After the alarms that the communication buffer could hold are sent, this message (S42) is sent to indicate that some burglary type zone alarm messages were not transmitted and were not retained in panel memory. Also, see S14, S18, S40, S41, and S44.
S43 WARNING: Bell Fuse Trouble SERVICE NOTIFICATION FEATURE	During standby operation, the panel's internal bell supervision circuit has detected that power is unavailable to operate the bell circuit. The restoral message is S53.
S44 WARNING: Fire-Burglary Trouble Overflow SERVICE NOTIFICATION FEATURE	The panel detected that many fire and burglary type zone troubles occurred in an extremely short period of time and its communication buffer could not hold all of them. After the troubles that the communication buffer could hold are sent, this message (S44) is sent to indicate that some fire-burglary type zone troubles messages were not transmitted and were not retained in panel memory. Also, see S14, S18, S40, S41, and S42.
S45 Abort Signal Received FALSE ALARM REDUCTION FEATURE	After a burglary alarm occurred and before the panel's bell cutoff timer expired, a user code was entered at the panel keypad and the panel was disarmed. The intended use for this message is to signal the central station that the burglary alarm was aborted. This message is only sent if the programmable option in the panel is activated. For SIA CP-01 compliant panels, (XR500 version 109 or higher or XRSuper6/XR20/XR40 version 301 and higher), the Abort Signal is only sent before the alarm is transmitted.

System Message Table (continued)

S46 Zone Swinger Automatically Bypassed SERVICE NOTIFICATION FEATURE	The panel automatically bypassed a zone because it tripped more times than the number found in Swinger Bypass of panel programming. The zone number is transmitted using an "X" message immediately after S46. This message is activated based on panel programming for each zone. It is also completely deactivated when Swinger Bypass in panel programming is set to zero.
S47 Zone Swinger Automatically Reset SERVICE FEATURE	After being automatically bypassed, the panel automatically reset a zone because it did not trip for one complete hour. This operation and message is a panel programmed option called RST SWYB found in System Options. The zone number is transmitted using a "Y" message immediately after S47.
S48 WARNING: Low Battery Cutoff-LAST MESSAGE SERVICE NOTIFICATION FEATURE	NOT IMPLEMENTED - The panel has detected that while A.C. Power is not present, the usable power available from the battery is low and proper panel operation will soon be inhibited.
S49 Cancel Signal Received FALSE ALARM REDUCTION FEATURE	After a burglary alarm occurred and was sent to the receiver and before the panel's bell cutoff timer expired, a user code was entered at the panel keypad and the panel was disarmed. The intended use for this message is to signal the central station that the burglary alarm was false. The Cancel Signal message is only sent from SIA CP-01 compliant panels (XR500 version 109 or higher or XRSuper6/XR20/XR40 version 301 and higher as of March 2005).
S50 WARNING: Supervised Wireless Trouble SERVICE NOTIFICATION FEATURE	The panel has detected that an attached wireless receiver has stopped properly communicating with the panel, or the wireless receiver has detected RF interference while the system is disarmed. The restoral for this message is S89.
S51 WARNING: Remote Programming	An IP network panel has started a remote programming session using TCP protocol. This message allows the central station to be aware that a supervised account is being remote programmed for the case where the receiver may generate an S16 Panel Not Responding.
S52 Signal Disabled by Operator	NOT SENT TO HOST AUTOMATION COMPUTER
S53 Bell Fuse Restored SERVICE NOTIFICATION FEATURE	During standby operation, the panel's internal bell supervision circuit has detected that power has been re-established for the operation of the bell circuit. This message is a restoral for S43.
S54 WARNING: Unsuccessful Remote Connect REMOTE SECURITY FEATURE	The panel rejected an attempt by an SCS-1R or SCS-105 receiver to communicate in a remote session (upload/download). The possible reasons are: incorrect account number, incorrect receiver keys (passwords), or incorrect panel key (password).

System Message Table (continued)

S55 Internal Message	NOT SENT TO THE HOST AUTOMATION COMPUTER. Panel/Receiver Request for Alarm Receiver key.
S56 Control Panel Trapped - Connect Now	NOT SENT TO THE HOST AUTOMATION COMPUTER
S57 Message Pending - Please Disconnect	NOT SENT TO THE HOST AUTOMATION COMPUTER
S58 ALARM: Panel Substitution COMMUNICATION SECURITY FEATURE	The receiver has detected that a supervised data network panel account has been substituted by another panel. The intended use of this message is to detect in high security applications when communication for the account is substituted by the use of a duplicate panel.
S59 WARNING: Substitution/Checkin Overflow SERVICE NOTIFICATION FEATURE	The receiver has detected that its memory cannot accommodate the number of supervised HST/NET (network) panel accounts that have been established. The maximum number of HST/NET panel accounts with Checkin enabled that can be established on an SCS-1R Receiver is 2500 supervised HST/NET panel accounts. The account number associated with this message will be the last account to check-in.
S60 WARNING: Invalid Panel Message Format	The receiver has detected a Serial 3 panel message that was not formatted correctly. This can occur when a panel has been incorrectly programmed to send PC/Host Log reports to the SCS-1R Receiver.
S61 WARNING: Communication Trouble - Line 1	The receiver has detected that the digital dialer line card installed in position one has experienced a failed communication attempt. A failed communication attempt is defined as the line card goes off hook but does not successfully communicate with a panel.
S62 WARNING: Communication Trouble - Line 2	The receiver has detected that the digital dialer line card installed in position two has experienced a failed communication attempt. A failed communication attempt is defined as the line card goes off hook but does not successfully communicate with a panel.
S63 WARNING: Communication Trouble - Line 3	The receiver has detected that the digital dialer line card installed in position three has experienced a failed communication attempt. A failed communication attempt is defined as the line card goes off hook but does not successfully communicate with a panel.

System Message Table (continued)

S64 WARNING: Communication Trouble - Line 4	The receiver has detected that the digital dialer line card installed in position four has experienced a failed communication attempt. A failed communication attempt is defined as the line card goes off hook but does not successfully communicate with a panel.
S65 WARNING: Communication Trouble - Line 5	The receiver has detected that the digital dialer line card installed in position five has experienced a failed communication attempt. A failed communication attempt is defined as the line card goes off hook but does not successfully communicate with a panel.
S66 System Test Begin WALK TEST FEATURE	The panel has been placed in a mode for the walk test. Zones that are tripped will be reported as Zone Verify or Zone Fail for recording purposes. The Test End message is S67.
S67 System Test End WALK TEST FEATURE	The panel has been removed from a walk test. This is a Test End message for S66.
S68 Receiver Printer Failed SERVICE NOTIFICATION FEATURE	The SCS-1R Receiver detects that the appropriate RS-232 voltage is not present on pin 5 of the Activity Log connection. The restoral message is S69.
S69 Receiver Printer Restore SERVICE NOTIFICATION FEATURE	The SCS-1R Receiver detects that the appropriate RS-232 voltage is now present on pin 5 of the Activity Log connection. This message is a restoral for S68.
S70 End of History Buffer	NOT SENT TO THE HOST AUTOMATION COMPUTER
S71 Request for Receiver Time and Date	NOT SENT TO THE HOST AUTOMATION COMPUTER
S72 WARNING: Network/Communication Path Trbl COMMUNICATION SECURITY FEATURE	The panel has not received a proper acknowledgment from the SCS-1R Receiver or the receiver (account 0) has detected a data network failure. This message is only transmitted if the panel is programmed for HST/NET network communication as either the main or backup communication. The restoral for this message is S73. Note: For XR100/XR500 version 200 or higher, the S72 definition is revised and includes a Path Information field. Please see section Serial 3 System Messages for revised S72 definition.
S73 Network or Communication Path Restored COMMUNICATION SECURITY FEATURE	The panel has received a proper acknowledgment from the SCS-1R Receiver or the receiver (account 0) has detected a data network restore. This message is only transmitted if the panel is programmed for HST/NET network communication as either the main or backup communication. This message is a restoral for S72. Note: For XR100/XR500 version 200 or higher, the S73 definition is revised and includes a Path Information field. Please see section Serial 3 System Messages for revised S73 definition.

System Message Table (continued)

S74 ALARM: Tamper During Armed State SECURITY FEATURE	The panel has detected that while any area is armed, the panel's built-in tamper circuit was placed in an open condition. The restoral message is S03. Also, see S11.
S75 ALERT: Early To Close ACCESS CONTROL FEATURE	The panel has detected that system arming occurred too early before the scheduled closing time. This message from the panel is optional and allows a programmable number of minutes to define the limit as to how early arming can take place before the scheduled closing time.
S76 ALERT: Late To Open ACCESS CONTROL FEATURE	The panel has detected that the system has not been disarmed near the scheduled opening time. This message from the panel is optional and allows a programmable number of minutes to define the limit as to how late disarming can take place after the scheduled opening time.
S77 ALERT: Unauthorized Entry ACCESS CONTROL FEATURE	The panel has detected that a low level user (Level 2) has disarmed an area outside of the panel's internally stored schedule. This message is not sent when the Level 2 user disarms an area inside of the panel's internally stored schedule.
S78 ALERT: System Recently Armed FALSE ALARM REDUCTION FEATURE	The panel has detected that the alarm message that it just sent was generated within five minutes of the panel being armed. The intended use of this message is to inform the central station that the panel was just armed before the alarm occurred.
S79 ALERT: Signal During Opened Period FALSE ALARM REDUCTION FEATURE	The panel has just generated and sent a burglary alarm to the central station. It has also detected that this burglary alarm occurred during the normal open period of the panel's internal schedule.
S80 ALERT: Exit Error FALSE ALARM REDUCTION FEATURE	The panel has detected that an Exit type zone was open The panel has detected that an Exit type zone was open just after the expiration of the exit delay at arming (door left open). The alarm bell rings for 10 seconds and then the exit zone is force armed.
S81 Warning: Network Line Card Trouble - Line x COMMUNICATION SECURITY FEATURE	The receiver has detected that the supervised network line card (SCS-101) has failed to communicate with the receiver. This is a network line card hardware, power, or connection issue. The restoral for this message is S82.
S82 Network Card Restored - Line x COMMUNICATION SECURITY FEATURE	The receiver has received a proper acknowledgment from the network line card and communication is restored. This message is a restoral for S81.
S83 Remote Programming Complete REMOTE SECURITY FEATURE	The panel has detected that a remote (upload/download) session has just been completed. In addition, Serial 3 panels may append communication programming information. See Programming Sub-Message.

System Message Table (continued)

S84 Remote Command Received REMOTE SECURITY FEATURE	The panel has detected that during a remote (upload/download) session, it responded to a command such as arm/disarm, schedule change, etc.
S85 Not Implemented	NOT SENT TO THE HOST AUTOMATION COMPUTER
S86 WARNING: Local Programming PROGRAMMING SECURITY FEATURE	The panel has detected that an on-site panel programming session has just begun or has just been completed. In addition, Serial 3 panels may append communication programming information. See Programming Sub-Message.
S87 WARNING: Transmit Failed-Msgs Not Sent COMMUNICATION SECURITY FEATURE	The panel has detected that since its last valid communication, it made 10 attempts to call the receiver and these attempts failed. Those messages will not be sent to the receiver.
S88 Automatic Recall OK - Unrestored System SERVICE NOTIFICATION FEATURE	The panel has detected that one of its circuits has not restored to normal at the time the automatic communication test is performed. These possible circuits are: Zones, AC Power, Standby Battery, and Phone Lines. This message is to reinforce identificationof troubles in fire systems. Also, see S07 and S97.
S89 Supervised Wireless Restored SECURITY FEATURE	The panel has detected that an attached wireless receiver has re-established proper communication with the panel, or previously detected RF interference has cleared. This message is a restoral for S32 or S50.
S90 WARNING: Unrecognized Message SECURITY FEATURE	A signal transmitted to the receiver by a panel using a valid communication sequence could not be recognized as a definable message by the receiver.
S91 Service Requested SERVICE NOTIFICATION FEATURE	By use of a keypad command, a user is indicating the need for service on the alarm panel.
S92 WARNING: No Arm/Disarm Activity CUSTOMER RETENTION FEATURE	The panel has detected that areas have not been armed or disarmed in the programmed number of days. This may be an indication that the end-user has stopped using the alarm system.
S93 ALARM: User Activity Not Detected CUSTOMER EMERGENCY FEATURE	The panel has detected that zone open or short activity has not occurred at disarmed zones within the programmed number of hours. This message may indicate that an end-user is not moving within the premise.
S94 ALERT: Activity Check Enabled CUSTOMER EMERGENCY FEATURE	The end-user has manually enabled the Activity Check Feature. This feature indicates that activity on disarmed zones has not occurred within the programmed time period.

System Message Table (continued)

S95 ALERT: Activity Check Disabled CUSTOMER EMERGENCY FEATURE	The end-user has manually disabled the Activity Check Feature. This feature indicates that activity on disarmed zones has not occurred within the programmed time period.
S96 ALARM: Verify Signal Received VERIFIED RESPONSE FEATURE	After an alarm has occurred at the premise, a user on-site has entered a user code and manually activated an alarm verification message to the receiver as a verified response.
S97 Network Communication Test OK AUTOMATIC COMMUNICATION FEATURE	The panel has sent a network communication test. This typically occurs every 24 hours. Some panels allow for variable time periods. All combination fire/burg panels allow test to be deactivated. Also see S07 and S88. In addition, Serial 3 panels may append communication programming information. See Programming Sub-Message.
S98 SCS-1R Memory Full	The SCS-1R Receiver has detected that its memory cannot hold another message from a panel and will not accept any other panel signals. The intended use of this message is to indicate that after an extended period of time, the receiver's large memory has become full because it is unable to release a message to the LCD Keypad or the SCS-1R Printer. When the SCS-1R Receiver is not receiving a proper acknowledgment from the Host Automation Computer, it operates in the NO RESPONSE FROM HOST AUTOMATION mode. Messages are sent to the SCS-1R LCD Keyboard and Printer for acknowledgment by an operator. If the LCD Keypad and/or Printer are not operating properly, or if messages are not acknowledged at the LCD Keypad, the memory begins to store the messages until it is full. Also, if the PRINT ALWAYS option in receiver programming is marked YES (See section 10) and the printer is not operating correctly, the memory begins to store messages until it is full. This occurs when the Host Automation Computer is or is not properly acknowledging messages. This message is always sent Serial 1.
S99 System Check	The SCS-1R Receiver sends this message at a periodic rate to verify communication between the receiver and the Host Automation Computer. The periodic rate is based on receiver programming in Host Configuration. This message is always sent Serial 1.

8 Serial 3 Messages

Serial 3 Messages are only sent when an alarm panel sends the message in the Serial 3 Message format and the Serial 3 Messages option in the Host Configuration programming of the SCS-1R Receiver is programmed YES. If the receiver is programmed NO for Serial 3 Messages, all messages are automatically converted to the Serial 1 format and then sent to the Host Automation Computer.

Serial 3 Messages are based on an "open" format in that they provide **variable lengths for text and numeric data plus variable positions for information**. Also, because sections of the message (Sub-Messages) are field delimited by a "\", future enhancements of a message are possible simply by adding another delimited field to the message string. The first character in a Serial 3 message always is an upper case "Z". The following example is a Serial 3 zone alarm message.

Za\062\t "BU\z 0232"FRONT DOOR\a 03"OFFICE\u 0568"JOHN SMITH\

8.1 Serial 3 Event Definition 12/22/09

The message event definition is the second character is a Serial 3 message followed by a back-slash "\" field delimiter. Z*\

Message Event Definitions

* above =	a	=	Zone Alarm	r	=	Zone Restore	l	= Schedules
	b	=	Zone Force Arm	t	=	Zone Trouble	q	= Arming Status
	d	=	Wireless Zone Low Battery	w	=	Zone Fault	u	= User Codes
	f	=	Walk Test Zone Fail	x	=	Zone Bypass	g	= Holidays
	h	=	Wireless Zone Missing	y	=	Zone Reset	e	= Equipment
	k	=	Walk Test Zone Verify	j	=	Door Access	m	= Service Code
	s	=	System Message	c	=	Device Status[1]		

Note 1 - Device Status is not sent to Host Automation and is only sent via PC Log reports.

All of the possible delimited fields (Sub-Message) that provide detail information for a message event are described in sections 8.2 to 8.12 and shown in the vertical (↕) columns of the chart below. All possible message events are shown in the horizontal (↔) rows. Numbers shown at the column/row intersect, mean that the delimited field appears in the Serial 3 message for that event. The numbers value, describe the typical but not specific position in the Serial 3 message string.

```
                    _Event Definition Sec. 8.1
                   |    _Message Length Sec. 8.2
                   |    |    _Type Sec. 8.3
                   |    |    |    _Zone Sec. 8.4
                   |    |    |    |    _Area Sec. 8.5
                   |    |    |    |    |    _User Codes Sec. 8.6
                   |    |    |    |    |    |    _Device Sec. 8.7
                   |    |    |    |    |    |    |    _Time/Day Sec. 8.8
                   |    |    |    |    |    |    |    |    _Holiday Number Sec. 8.9
                   |    |    |    |    |    |    |    |    |    _Date Sec. 8.10
                   |    |    |    |    |    |    |    |    |    |    _Equipment ID Sec. 8.11
                   |    |    |    |    |    |    |    |    |    |    |    _Service Code ID Sec. 8.12
                   |    |    |    |    |    |    |    |    |    |    |    |    _Event Qualifier Sec. 8.13
                   |    |    |    |    |    |    |    |    |    |    |    |    |    _User Codes Sec. 8.6
                   |    |    |    |    |    |    |    |    |    |    |    |    |    |    _ Programming Info
                   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    _ Path Info
                   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
                   ------------------------------------------------------------------------------
a = Zone Alarm ----- 1    2    3    4    5*   |    7>   |    |    |    |    |    6%   |    |    |

b = Zone Force ----- 1    2    3    4    5    6    |    |    |    |    |    |    6%   |    |    |

d = Zone Low Battery 1    2    3    4    5*   |    |    |    |    |    |    |    6%   |    |    |

f = Zone Fail ------ 1    2    3    4    |    |    |    |    |    |    |    |    5%   |    |    |

h = Zone Missing --- 1    2    3    4    5*   |    |    |    |    |    |    |    6%   |    |    |

k = Zone Verify ---- 1    2    3    4    |    |    |    |    |    |    |    |    5%   |    |    |

r = Zone Restore --- 1    2    3    4    5*   |    |    |    |    |    |    |    6%   |    |    |

t = Zone Trouble --- 1    2    3    4    5*   |    |    |    |    |    |    |    6%   |    |    |

w = Zone Fault ----- 1    2    3    4    5*   |    |    |    |    |    |    |    6$%  |    |    |

x = Zone Bypass ---- 1    2    3    4    6*   5    |    |    |    |    |    |    7%   |    |    |

y = Zone Reset ----- 1    2    3    4    6*   5    |    |    |    |    |    |    7%   |    |    |

j = Door Access ---- 1    2    3    |    |    5    4    |    |    |    |    |    7%   6@   |    |

l = Schedules ------ 1    2    3    |    5+   6    |    4^   |    |    |    |    7%   |    |    |

q = Arming Status -- 1    2    3    |    5    4    |    |    |    |    |    |    7!%  6@   |    |

u = User Codes ----- 1    2    3    |    |    4#   |    |    |    |    |    |    5%   |    |    |

g = Holidays ------- 1    2    3&   |    |    6    |    |    4    5    |    |    7%   |    |    |

e = Equipment ------ 1    2    3    |    |    |    |    |    |    |    4    |    5%   |    |    |

m = Service Code --- 1    2    3    |    |    |    |    |    |    |    |    4    5%   |    |    |

s = System Message - 1    2    3    |    |    5    4    |    |    |    |    |    8%~  |    6    7

c = Device Status -- 1    2    3    4    |    6    |    |    |    |    |    |    |    |    |    |

 * = Not sent for EM (Emergency), PN (Panic), and SV (Supervisory) type zones.
 ^ = Time/Day Information sent twice with different qualifiers.
 + = Area Description only sent if panel is programmed for a schedule per area.
 # = User info sent twice w/different qualifiers.
 $ = Added field indicates smoke detector dirty.
 @ = 2nd User info sent for Two Man Rule Area opening and access denied.
 & = Holiday A, B, C included for XR200-485 firmware version 200 or higher.
 ! = Added field indicates all areas are now armed.
 % = Can include sequence number qualifier and could include qualifier for Traffic Count
 ~ = Can include number of hours to next recall qualifier if S07 or S88
 > = Keypad panic button alarms include the device number & name sub-message for XR100/XR500 Version 205 and higher.
```

It is strongly recommended that the automation system scan the Serial 3 string for the specific fields (Sub-Message) desired and ignore portions of the message that are not needed. The Sub-Message event characters always follow a "\" delimiter (HEX 5C). This allows for future expansion of the Serial 3 format without the need for instant automation system revisions.

8.2 Message Length

The second delimited field of a Serial 3 message contains numeric characters which indicate the message length, followed by the back-slash delimiter. The characters describe a count of the number of characters from, and including the starting "Z" character, to and including the termination character (see section 6.5). For example: 061\ indicates the message is 61 characters in length including the termination character.

8.3 Type Sub-Message

The Type Sub-Message delimited field contains numeric or text characters that provide information for the type of event that has occurred. The sub-message always starts with a lower case "t" and ends with a back-slash delimiter. The second character is a sub-message qualifier. A Serial 3 message sent as a System Test Begin or End (S66 or S67) can include an event qualifier "z" to indicate that the following string of zone types are included in the test. If "z" is not sent, this character will be sent as a space (HEX 20). The next characters define the type of event. They may be numeric or text characters and may vary in the number of characters sent. **When they are text characters, a double-quote will precede them.**

Numeric		**Text**		**Text with "z" qualifier**
tqnnn	or	**tq"cc**	or	**tq"aabbcc...**

The lists below describe the various types for the events.

Zone Type
BL = Blank
FI = Fire
BU = Burglary
SV = Supervisory
PN = Panic
EM = Emergency
A1 = Auxiliary 1
A2 = Auxiliary 2

Arming Type
OP = Area Disarmed
CL = Area Armed
LA = Area Late to Arm

User Code Type
AD = User Code Added
CH = User Code Changed
DE = User Code Deleted

Access Type
DA = Door Access Granted
AA = Denied: Armed Area
IA = Denied: Invalid Area
IT = Denied: Invalid Time
AP = Denied: Previous Access
IC = Denied: Invalid Code
IL = Denied: Invalid Level

Schedule Type
PE = Permanent Schedule
TE = Temporary Schedule
PR = Primary Schedule
SE = Secondary Schedule
S1 = Shift One
S2 = Shift Two
S3 = Shift Three
S4 = Shift Four

Service User Type
ST = Start Service User
SP = Stop Service User

Status Type (*Not Sent to Host Automation - Only sent via PC Log reports*)
DO = Door Status: Open
DC = Door Status: Closed
HO = Door Status: Held Open
FO = Door Status: Forced Open
ON = Output Status: On
OF = Output Status: Off
PL = Output Status: Pulse
TP = Output Status: Temporal

Equipment Type
RP = Repair
RL = Replace
AD = Add
RM = Remove
AJ = Adjust
TS = Test

System Message Type
00 - 99 = See Serial 1 message table (see section 7.13)
100 - 999 = See Serial 3 System Messages

Qualifier Type
DT = Service
AC = All Areas Armed

Holiday Type
HA = Holiday Schedule A
HB = Holiday Schedule B
HC = Holiday Schedule C

8.4 Zone Sub-Message (12/22/09)

For Report Messages with Events a, b, d, f, h, k, r, t, w, x, and y, a delimited Zone Sub-Message is included in the Serial 3 string. The Zone Sub-Message starts with a lower case "z" and ends with a back-slash delimiter. The second character is a sub-message qualifier. Currently, no Zone Sub-Message qualifiers have been defined. Therefore, this character will be sent as a space (HEX 20). The next characters define the zone number. They may vary in the number of characters sent. If the zone name is included, following the zone number will be double-quote delimited text characters that represent the zone name stored in the alarm panel memory. Typically, the number of text characters sent **will be 16 but XR100/XR500 Version 205 panels can vary the number sent from 1 to 32**.

zqnnn"ccccccc…(variable)…ccccccccc

Possible String	Description	Notes
z	= Sub-Message Identifier	Constant one character
q	= Qualifier (Currently Space)	Constant one character
n	= Zone Number	Digits to indicate zone number, Ex. = 008, number of characters is variable - typically three
"	= Text Delimiter	Constant one character
c	= Zone Name Text	Text characters to indicate zone name, Ex. = FRONT DOOR, number of characters is variable - **from 1 to 32**
\	= Field Delimiter	Constant one character

8.5 Area Sub-Message (12/22/09)

For Report Messages with event "q" and events a, b, d, f, h, k, r, t, w, x, and y that are not of Type FI, SV, PN, or EM, a delimited Area Sub-Message is included in the Serial 3 string. The Area Sub-Message starts with a lower case "a" and ends with a back-slash delimiter. The second character is a sub-message qualifier. Currently, no Area Sub-Message qualifiers have been defined. Therefore, this character will be sent as a space (HEX 20). The next characters define the area number. They may vary in the number of characters sent. If the area name is included, following the area number will be double-quote delimited text characters that represent the area name stored in the alarm panel memory. Typically, the number of text characters sent **will be 16 but XR100/XR500 Version 205 panels can vary the number sent from 1 to 32**.

aqnnn"ccccccc…(variable)…ccccccccc

Possible String	Description	Notes
a	= Area Sub-Message	Constant one character
q	= Qualifier (Currently Space)	Constant one character
n	= Area Number	Digits to indicate area number, Ex. = 008, number of characters is variable - typically three
"	= Text Delimiter	Constant one character
c	= Area Name Text	Text characters to indicate area name, Ex. = OFFICE, number of characters is variable - from 1 to 32
\	= Field Delimiter	Constant one character

8.6 User Code Sub-Message (12/22/09)

For report messages with events b, x, y, q, u, j, l, and g, a delimited user code sub-message is included in the Serial 3 string. Some system "s" event messages such as S45 Abort, S49 Cancel, and S96 Alarm Verified can also include the user code sub-message. The user code sub-message starts with a lower case "u" and ends with a back-slash delimiter. The second character is a sub-message qualifier. Currently, three user code sub-message qualifiers have been defined. They are: "m" indicates that this user was acted upon such as added, deleted, or changed; " " (space) indicates that this user performed the action of adding, deleting, or changing a user; and "s" indicates that this user was the second user for a two-man area disarming, door access granted, or door access denied. The next characters define the user number and they may vary in the number of characters sent. When a user name is included, following the user number will be double-quote delimited text characters that represent the user name stored in the alarm panel memory. Typically, the number of text characters sent **will be 16 but XR100/XR500 Version 205 panels can vary the number sent from 3 to 32**.

uqnnnnn"ccccccc…(variable)…ccccccccc

Possible String	Description	Notes
u	= User Code Sub-Message	Constant one character
q	= Qualifier	One character, ~ (space) = user who performed action m = user acted upon s = second user required to open area and access denied (Two Man Rule)
n	= User Number	Digits to indicate user number, Ex. = 00001, number of characters is variable - typically five
"	= Text Delimiter	Constant one character
c	= User Name	Text characters to indicate user name, Ex. = JOHN SMITH, number of characters is variable - from 3 to 32
\	= Field Delimiter	Constant one character

Four special user numbers may be sent in a User Code Sub-Message. They are:

32767	=	Service User
32766	=	Alarm Panel Schedule
32765	=	Alarm Panel Swinger Bypass of a Zone
32764	=	Remote Command from DMP Remote Access Uploader/Downloader

8.7 Device Sub-Message 12/22/09

A Device is an address on the alarm panel keypad or LX-Bus where a keypad/zone expansion or where door access equipment may be installed. For the Report Message with event "j" and the Report Message with event "s" that is Type 101 or 102, a delimited Device Sub-Message is included in the Serial 3 string. The Device Sub-Message starts with a lower case "v" and ends with a back-slash delimiter. The second character is a sub-message qualifier. Currently, no Device Sub-Message qualifiers have been defined. Therefore, this character will be sent as a space (HEX 20). The next characters define the Device number. They may vary in the number of characters sent; typically three. When a device name is included, following the device address will be double-quote delimited text characters that represent the device name stored in the alarm panel memory. Typically, the number of text characters sent **will be 16 but XR100/XR500 Version 205 panels can vary the number sent from 1 to 32**.

vqnnn"ccccccc...(variable)...ccccccccc

Possible String	Description	Notes
v	= Device Sub-Message	Constant one character
q	= Qualifier (Currently Space)	Constant one character
n	= Device Address	Digits to indicate device address, Ex. = 101, number of characters is variable - typically three
"	= Text Delimiter	Constant one character
c	= Device Name	Text characters to indicate device name, Ex. = FRONT ENTRANCE, number of characters is variable - from 1 to 32
\	= Field Delimiter	Constant one character

8.8 Time/Day Sub-Message

For Report Message with event "l" (Schedule), a delimited Time/Day Sub-Message is included in the Serial 3 string. The Time/Day Sub-Message starts with a lower case "i" and ends with a back-slash delimiter. The second character is a sub-message qualifier. Currently, two Time/Day Sub-Message qualifiers have been defined. They are: lower case "o" which indicates an opening time and the second qualifier is lower case "c" which indicates a closing time. The next characters define the time that the schedule was changed to. They are formatted as "nn:nn" and do not vary in the number of characters sent. Following the time characters are double-quote delimited text characters that represent the day that the schedule was set to in the alarm panel memory. Typically three characters are sent to indicate the day.

iqnn:nn"ccc

Possible String	Description	Notes
i	= Time/Day Sub-Message	Constant one character
q	= Qualifier	One character,o = Open Time,c = Close Time
nn:nn	= Time	Character string that indicates the time using a 24 hour clock, Ex. 05:00, PM is indicated by adding 12 to the hours,or 17:00
"	= Text Delimiter	Constant one character
ccc	= Day Text Information	Text characters to indicate day, Ex. MON = Monday, number of characters is variable - typically 3, see list below
\	= Field Delimiter	Constant one character

The list below describes the day text information:

SUN = Sunday	THU = Thursday	H-A = Holiday A (XR200-485 version 200 or higher)
MON = Monday	FRI = Friday	H-B = Holiday B (XR200-485 version 200 or higher)
TUE = Tuesday	SAT = Saturday	H-C = Holiday C (XR200-485 version 200 or higher)
WED = Wednesday	HOL = Holiday	

8.9 Holiday Number Sub-Message

For the Report Message with event "g" (Holiday), a delimited Holiday Number Sub-Message is included in the Serial 3 string. The Holiday Number Sub-Message starts with a lower case "h" and ends with a back-slash delimiter. The second character is a sub-message qualifier. Currently, no Sub-Message qualifiers have been defined. Therefore, this character will be sent as a space (HEX 20). The next characters define the Holiday Number whose date was created or changed.

hqnn

String	Description	Notes
h	= Holiday Sub-Message	Constant one character
q	= Qualifier (Currently Space)	Constant one character
nn	= Holiday Number	Digits that indicate the holiday number, Ex. 20, number of characters is variable - typically 2
\	= Message Field Separator	Constant one character

8.10 Date Sub-Message

For the Report Message with event "g" (Holiday), a delimited Date Sub-Message is included in the Serial 3 string. The Date Sub-Message starts with a lower case "d" and ends with a back-slash delimiter. The second character is a sub-message qualifier. Currently, no Date Sub-Message qualifiers have been defined. Therefore, this character will be sent as a space (HEX 20). The next characters define the date to which the Holiday Number was changed. They are formatted as "nn-nn".

dqnn-nn

Possible String	Description	Notes
d	= Date Sub-Message	Constant one character
q	= Qualifier (Currently Space)	Constant one character
nn-nn	= Date	Character string that indicates the date , Ex. 12-25 (December 25)
\	= Field Delimiter	Constant one character

8.11 Equipment ID Sub-Message

For the Report Message with event "e" (Equipment), a delimited Equipment ID Sub-Message is included in the Serial 3 string. The Equipment ID Sub-Message starts with a lower case "g" and ends with a back-slash delimiter. The second character is a sub-message qualifier. Currently, no Equipment ID Sub-Message qualifiers have been defined. Therefore, this character will be sent as a space (HEX 20). The next characters define the Equipment ID. The number of characters may vary. No Equipment IDs has been defined by DMP. Equipment IDs are assigned by the dealer based on needs.

gqnnnnnn

Possible String	Description	Notes
g	= Equipment ID Sub-Message	Constant one character
q	= Qualifier (Currently Space)	Constant one character
nnnnnn	= Equipment ID Number	Digits that indicate the user defined equipment identification, Ex. 123456, number of characters is variable - typically six
\	= Field Delimiter	Constant one character

8.12 Service Code ID Sub-Message

For the Report Message with event "m" (Service Code), a delimited Service Code ID Sub-Message is included in the Serial 3 string. The Service Code ID Sub-Message starts with a lower case "s" and ends with a back-slash delimiter. Character 2 is a sub-message qualifier —(space), 'Y', or 'N'. (Space) indicates that the message was sent from the panel to the receiver without validation (XR200 panels). 'Y' indicates that the service code entered at the panel has been validated by the receiver, while 'N' indicates it is not valid. The next characters define the Service Code entered at the panel. The number of characters will be 5, range 00000 to 65535. No Service Code IDs have been defined by DMP. Service Code IDs are assigned by the dealer based on needs.

sqnnnnn

Possible String	Description	Notes
S	= Service Code ID Sub-Message	Constant one character
q	= Qualifier (Space, Y, or N)	Constant one character
nnnnn	= Service Code ID	5 Digits that indicate the service code entered at the panel. (range 00000 to 65535)
\	= Field Delimiter	Constant one character

8.13 Event Qualifier Sub-Message

A Serial 3 message sent as Fault can include an event qualifier field \e_"DT\ to indicate a dirty smoke detector. The SCS-1R Receiver processes this message on the printer or keyboard as SERVICE. Remote Access version 1.07 6/2/98 or lower will process this message as a generic Fault and does not recognize the new field.

A Serial 3 message sent as Closing can include an event qualifier field \e_"AC\ to indicate that all programmed areas of the system have now been armed. The SCS-1R Receiver processes this message on the printer or keyboard as an Area Closing.

Any Serial 3 message sent can include an event qualifier field \ee"RI\ or \ee"NO\ to indicate if the message received from the panel was encrypted or not. "RI" indicates that the message was encrypted using Rijndael encryption and "NO" indicates that the message was not encrypted. The SCS-1R passes the field through and does not print or display this information.

eq"cc

Possible String	Description	Notes
e =	Qualifier Sub-Message	Constant one character
q =	Qualifier (Currently Space or e)	Constant one character
" =	Text Delimiter	Constant one character
cc =	Qualifier Text	Text characters to indicate - typically 2
\ =	Field Delimiter	Constant one character

Any Serial 3 event message to the receiver can include an event qualifier field \esnnn\ to provide a sequence number from 000 to 250 for the message and is only included when the message is sent by a cellular modem attached to the panel. This event qualifier is removed from the Serial 3 event message by the receiver when using an SCS-101 Network Interface Card operating with software version 203 or higher. An SCS-101 card with older version software passes this message to the host automation computer where it should be discarded.

A Serial 3 Automatic Recall message (S07 or S88) sent to the receiver can include an event qualifier field \etnnn\ to provide a number of hours from 0001 to 1440 until the next recall message will be sent. This is sent by the XR500/XR100 operating with version 202 or higher.

A Serial 3 message sent as a Closing can include a Traffic Count event qualifier field \ecnnnnn\ to provide the number of zone trips in the area that occurred within the last disarmed period. The SCS-1R passes the field through and does not print or display this information.

A Serial 3 message sent as System Message 10 Warning: Low Communication Line will include a troubleshooting event qualifier \efn\ to provide additional information (a number 1 to 7) concerning the probable cause of the cellular communication issue. Please contact DMP Technical Services with the numeric value.

eqn..n

Possible String	Description	Notes
e =	Qualifier Sub-Message	Constant one character
q =	Qualifier (Currently s, t, c, f)	Constant one character
nnnn =	Numeric Info (000 - 65535)	One to five characters
\ =	Field Delimiter	Constant one character

8.14 Programming Sub-Message

The Programming Sub-Message is a field containing communication programming information of the panel and can be appended to Type Sub-Messages 19,83,86, or 97. This sub-message is sent from the XR500 and XR100 series control panels, version 116 (11/13/06) or higher. This sub-message is included to provide Central Station an assurance that the panel is programmed as required.

pq"PLBSRRCCCFFFTU\

String	Description		Notes
p =	Programming Sub-Message	Constant one character	
q =	Qualifier	Constant one character, n = network	
" =	Text Delimiter	Constant one character	
P =	Primary Communication Type	Constant one character, 7 = Net, 8 = DD	
L =	Second Line Type	Constant one character, 0 = None, 6 = Cell, 7 = Net, 8 = DD, B = D2	
B =	Network Backup	Constant one character, Y = yes, N = no	
S =	Sub Code	Constant one character, Y = yes, N = no	
R =	Retry Time	Constant two character, 03 - 15	
C =	Check In Time	Constant three character, 001 - 240	
F =	Fail Time	Constant three character, 001 - 240	
T =	TCP Enabled	Constant one character, Y = yes, N = no	
U =	Supervised Backup	Constant one character, Y = yes, N = no	
\ =	Field Delimiter	Constant one character	

8.15 Path Information Sub-Message (12/22/09)

A Path Information Sub-Message is a field that can be appended to Serial 3 System messages S72 WARNING: Network/Communication Path Trbl, S73 Network or Communication Path Restored, S07 Automatic Recall Test OK, or S88 Automatic Recall OK - Unrestored System. For Versions 205 or higher, appending the Path Information Sub-Message is programmable. The programming can be set to append only S72, S73, S07, and S88 or append every message from the panel. The Path Information Sub-Message starts with a lower case "c" and ends with a back-slash delimitor. A qualifier follows the sub-message and indicates this message is being communicated on the numeric path to follow for S07 and S88 **or** indicates that the Type Sub-Message S72 and S73 event occurred on the numeric path that follows. A two digit numeric path then follows to indicate the number of the path. The last character defines the path type hierachy as either Primary or Backup.

sqpp"tr

String	Description	Values	Notes
s =	Path sub-message.	c	Constant one character
q =	Qualifier	_ (_ = space)	Constant one character and indicates that this message is being communicated on the numeric path that follows
		f	Constant one character and indicates that the Type Sub-Message event occurred on the numeric path that follows.
p =	Numeric path	01 - 08	Path number, typically two characters
t =	Communication type	N, D, C, L, R	Constant one character and indicates the communication type of the path N = Net, D = DD, C = CID, L = CELL, R = RS-232
r =	Path type	P, B	Constant one character and indicates the communication hierachy of the path P = Primary, B = Backup
\ =	Field Delimiter		

9 Serial 3 System Messages

Serial 3 System Messages 100, 103-120, 127-129, 140-149, 151-171, and 174-999 are not defined and have not been implemented.

S72 WARNING: Network/Communication Path Trbl

COMMUNICATION SECURITY FEATURE

The panel has not received a proper acknowledgment from the receiver for a path of communication. This message can be sent for any path number (1-8) and any communication type (NET, DD, CID, CELL, 232). This message is sent on a backup path and includes a Path Information field to specify the path that failed to communicate. The restoral for this message is S73.

Note: For XR100/XR500 version 200 or higher, the S72 includes a Path Information field. Please see section Path Information Sub-Message.

S73 Network or Communication Path Restored

COMMUNICATION SECURITY FEATURE

The panel has received a proper acknowledgment from the receiver for a previously failed path of communciation. This message can occur for any path number (1-8) and any communication type (NET, DD, CID, CELL, 232). This message is the restore for S72 that contained the Path Information Sub-Message specifying the path that failed.

Note: For XR100/XR500 version 200 or higher, the S73 includes a Path Information field. Please see section Path Information Sub-Message.

---

101 Device Missing

SERVICE NOTIFICATION FEATURE

The panel is indicating that a device such as a zone expander on an LX-Bus is not responding to messages from the panel.

---

102 Device Restored

SERVICE NOTIFICATION FEATURE

The panel is indicating that a device such as a zone expander on an LX-Bus has begun responding to messages from the panel after the panel reported a Device Missing. This message is a restoral for 101.

Serial 3 System Message Table (continued)

121 ALERT:Cell Data Communication Excessive (12/22/09)

CELLULAR DATA OVERAGE NOTIFICATION FEATURE

The panel has determined that the number of panel messages sent to the receiver in the last hour through a data cellular radio has exceeded 3000 total bytes of data. This message is sent once an hour until the data traffic rate is less than 3000 total bytes of data in the last hour or when the data traffic rate exceeds 6000 total bytes of data in the last hour. When the 6000 byte rate is incurred, data limits occur and System Message 122 is sent. The restore message is System Message 125.

Note 1: 3000 bytes of data is approximately 20 messages such as burglar alarms or open/close messages.

Note 2: Supervision Checkin messages are not counted towards the total number of bytes for the XR100/XR500 Version 205 or higher.

---

122 WARNING:Cell Data Non-Alarm Suppress (12/22/09)

CELLULAR DATA OVERAGE REDUCTION FEATURE

The panel has determined that the number of panel messages sent to the receiver in the last hour through a data cellular radio has exceeded 6000 bytes of data. Panel messages sent through the data cellular radio for each future hour are now limited to 1000 bytes of data for Fire alarm messages and 1000 bytes of data for non-Fire alarm messages such as Burglary or Panic. All other panel event messages are not attempted to be sent through the data cellular radio except for XR100/XR500 Version 205 and higher panels where only the supervision Checkin messages continues to be sent.

This message is sent once an hour until the panel calculates that in the last hour the possible number of panel messages that should be sent through the data cellular radio is less than 3000 total bytes of data. Data limits are then removed.

This message is only sent by the panel after the System Message 121 has been sent. The restore message is System Message 125.

Note 1: Panel events are always stored in the panel display event buffer and can be retrieval using remote software.

Note 2: 1000 bytes of data is approximately eight fire alarm messages.

Note 3: 1000 bytes of data is approximately seven burglar alarm messages.

Note 4: Supervision Checkin messages are not counted towards the total number of bytes for the XR100/XR500 Version 205 or higher.

---

123 ALARM:Cell Data Fire Alarm Suppress (12/22/09)

CELLULAR DATA OVERAGE REDUCTION FEATURE

This message is sent to the receiver only after System Message 122 has been sent.

The panel is unable to send to the receiver additional Fire Alarm messages through a data cellular radio because 1000 bytes of data for Fire Alarm messages were already sent during this hour. At the end of this hour, the 1000 byte counter is reset and another 1000 bytes for Fire Alarm messages is available for the next hour.

All data limits are removed when the panel calculates that in the last hour the possible number of panel messages that should be sent through the data cellular radio is less than 3000 total bytes of data. The restore message is System Message 125.

Note 1: 1000 bytes of data is approximately eight fire alarm messages.

Note 2: Supervision Checkin messages are not attempted during this period for any control panel including the XR100/XR500 Version 205.

Serial 3 System Messages (continued)

124 ALARM:Cell Data Non-Fire Alarm Suppress (12/22/09)

CELLULAR DATA OVERAGE REDUCTION FEATURE

This message is sent to the receiver only after System Message 122 has been sent.

The panel is unable to send to the receiver additional non-Fire Alarm messages such as Burglary and Panic through a data cellular radio because 1000 bytes of data for non-Fire Alarm messages were already sent during this hour. At the end of this hour, the 1000 byte counter is reset and another 1000 bytes for non-Fire Alarm messages is available for the next hour.

All data limits are removed when the panel calculates that in the last hour the possible number of panel messages that should be sent through the data cellular radio is less than 3000 total bytes of data. The restore message is System Message 125.

Note 1: 1000 bytes of data is approximately seven burglar alarm messages.

Note 2: Supervision Checkin messages are not attempted during this period for any control panel including the XR100/XR500 Version 205.

---

125 Cell Data Communication Fully Restored

CELLULAR DATA OVERAGE NOTIFICATION FEATURE

The panel has determined that in the last hour the number of panel messages that are sent to the receiver or should be sent to the receiver through a data cellular radio was less than 3000 bytes of data. This message is the restore message for System Messages 121, 122, 123, 124 and is only sent once.

---

126 ALERT:Cell Rate Plan Exceeded

CELLULAR DATA OVERAGE NOTIFICATION FEATURE

The panel has determined that in the last 30 days the number of messages sent to the receiver through the data cellular radio exceeded the kilobyte data rate plan established at the activation of the radio. This message is to provide an alert in an attempt to avert overage charges and could occur because of panel programming changes that affect the cellular data traffic rate.

S130 WARNING: Cell Communicator Bus Failed

COMMUNICATION SECURITY FEATURE

The communication on the bus between the panel and the cellular communicator has failed while no areas of the system were armed. This message may originate from both the panel and the cellular communicator as both monitor the bus. The restoral message is S132.

S131 ALARM: Cell Communicator Bus Failed

SERVICE NOTIFICATION FEATURE

The communication on the bus between the panel and the cellular communicator has failed while any area of the system was armed. This message may originate from both the panel and the cellular communicator as both monitor the bus. The restoral message is S132.

Serial 3 System Message Table (continued)

S132 Cell Communicator Bus Restored

SERVICE NOTIFICATION FEATURE

The communication on the bus between the panel and the cellular communicator has restored. Message is sent from the panel to the receiver and is a restoral for S130 and S131.

S133 WARNING: Cell Communicator DC Failed

SERVICE NOTIFICATION FEATURE

The panel has received a message from the cellular communicator that its input DC voltage is missing or low. The cellular communicator is operating from its internal battery. The restoral message is S134.

S134 Cell Communicator DC Restored

SERVICE NOTIFICATION FEATURE

The panel has received a message from the cellular communicator that its input DC voltage has restored. This message is a restoral for S133.

S135 WARNING: Cell Communicator Low Battery

SERVICE NOTIFICATION FEATURE

The panel has received a message from the cellular communicator that the cellular communicator's standby battery is low or missing. The restoral message is S136.

S136 Cell Communicator Battery Restored

SERVICE NOTIFICATION FEATURE

The panel has received a message from the cellular communicator that the cellular communicator's standby battery has restored. This message restores S135.

S137 WARNING: Cell Communicator Tamper

SECURITY FEATURE

The panel has received a message from the cellular communicator that the cellular communicator's built-in tamper circuit was placed in an open condition while no areas of the system were armed. The restoral message is S139.

S138 ALARM: Cell Communicator Tamper

SECURITY FEATURE

The panel has received a message from the cellular communicator that the cellular communicator's built-in tamper circuit was placed in an open condition while one or more areas of the system were armed. The restoral message is S139.

Serial 3 System Message Table (continued)

S139 Cell Communicator Tamper Restored

SECURITY FEATURE

The panel has received a message from the cellular communicator that the cellular communicator's built-in tamper circuit was restored to a normal condition. This message is a restoral for S137 and S138.

---

150 Abort by User (Not Implemented)

---

172 Internal Use Only and Not Sent To Host Automation

---

173 Internal Use Only and Not Sent To Host Automation

---

10 Message Quick Reference

The following tables provide a quick summary of all Serial 1 and Serial 3 messages. For complete definition of each message see sections 7 and 8.

10.1 Serial 1 Message Quick Reference

All Serial 1 messages are shown with 4 digit zone and area numbers assumed.

```
                          Zone Zone..name
Zone Alarm          1-12345 A00010EAST SMOKE[C][R]    blank type
Zone Trouble                T    1                    fire type
Zone Restore                R    2                    burglary type
Zone Verify                 K    3                    supervisory type
Zone Fail                   F    4                    panic type
Zone Force Arm              B    5                    emergency type
Zone Fault                  W    6                    auxiliary 1 type
Zone XMTR Low Batt          D    7                    auxiliary 2 type
Zone XMTR Missing           H
```

```
                         ZoneUserZone..name
Zone Bypass         1-12345 X00010000FRONT DOOR[C][R]
Zone Reset                  Y
```

```
                         ZoneUser   Zone........name  Area........name
Zone Alarm          1-12345 za00010001016NORTH OFFICE PIR16S. WEST BUILDING[C][R]
Zone Trouble                 t        1           fire type
Zone Restore                 r        2           burglary type
Zone Verify                  k        3           supervisory type
Zone Fail                    f        4           panic type
Zone Force Arm               b        5           emergency type
Zone Fault                   w        6           auxiliary 1 type
Zone XMTR Low Battery        d        7           auxiliary 2 type
Zone XMTR Missing            h
Zone Bypass                  x
Zone Reset                   y
```

```
                         User  Area..name
Area Opening        1-12345 O000104BREAK ROOM[C][R]
Area Closing                C
Area Late                   L
```

```
                         UserUser
User Code Add       1-12345 P00010002[C][R]
User Code Delete            p
User Code Change            U
```

```
                         User
Door Access         1-12345 J000108[C][R]
```

Serial 1 Message Quick Reference (continued)

```
                          UserTimeTime
Permanent Sched     1-12345 N200010800853043CR
Temporary Sched              I
Primary Sched                n
Secondary Sched              i
```

```
                          Numbr
Service Code        1-12345 M12345CR
```

```
                          Equip Zone
Equipment Repair    1-12345 E1234510001NCR   customer caused = no
          Replace                 2    Y     customer caused = yes
          Add                     3
          Remove                  4
          Adjust                  5
          Test                    6
```

```
                          Equipt Zone
Equipment Message   1-12345 e770KPL00001 CR   space indicates 856 module
          Repair                  1    N     customer caused = no
          Replace                 2    Y     customer caused = yes
          Add                     3
          Remove                  4
          Adjust                  5
          Test                    6
```

```
                          MsgMod
System Message s    1-12345 s001001CR

Variable Message    1-12345 v0028THIS IS 28 CHARACTER MESSAGECR

System Message S    1-12345 S01CR
```

10.2 Serial 3 Message Quick Reference

All Serial 3 messages are shown with 3 digit zone and area numbers and 5 digit user numbers, However, these fields are variable length and can change depending on the panel sending the report. Each message is shown with sub-message fields in their typical order. However, the order of sub-messages is not fixed. It is recommended that the automation system be configured to find the appropriate sub-message needed regardless of the order of occurrence. This will allow future sub-messages to be added without the immediate need for automation system revision. A sub-message can be located by searching the characters that follow the delimiter "\" (HEX 5C) for the desired sub-message character (see section 8.1).

10.2.1 Serial 3 Zone Messages

```
Zone Alarm  1-12345 Za\060\t "BL\z 001"EAST OFFICE DOOR\a 001"EAST WAREHOUSE  \CR
Zone Force           b      FI                        ↑                      ↑
Zone Low Battery     d      BU                    e_"DT\                  ee"RI\
Zone Fail            f      SV          (qualifier for zone on Service)(encryption qualifier)
Zone Missing         h      PN                        ↑                   (may be included)
Zone Verify          k      EM             u 00001"WILLIAM SMITH   \
Zone Restore         r      A1          (user added before area on Bypass and Reset)
Zone Trouble         t      A2
Zone Fault           w
Zone Bypass          x
Zone Reset           y

Examples:
Burglary Alarm
1-12345 Za\060\t "BU\z 001"EAST OFFICE DOOR\a 001"EAST WAREHOUSE \CR
Generic Alarm
1-12345 Zr\060\t "BL\z 001"EAST OFFICE DOOR\a 001"EAST WAREHOUSE \ee"RI\CR
Fire Alarm
1-12345 Za\037\t "FI\z 001"OFFICE SMOKE DET\ee"RI\CR
Service Message - Dirty Smoke Detector
1-12345 Zw\043\t "FI\z 001"OFFICE SMOKE DET\e_"DT\ee"NO\CR
Burglary Zone Bypass by User
1-12345 Zx\085\t "BU\z 001"EAST OFFICE DOOR\u 00001"WILLIAM SMITH \a 001"EAST WAREHOUSE \CR
Burglary Zone Reset from Bypass by User
1-12345 Zy\085\t "BU\z 001"EAST OFFICE DOOR\u 00001"WILLIAM SMITH \a 001"EAST WAREHOUSE \CR
Burglary Zone Automatic Swinger Bypass by System
1-12345 Zx\085\t "BU\z 001"EAST OFFICE DOOR\u 32765"SWINGER BYPASS \a 001"EAST WAREHOUSE \ee"NO\CR
```

10.2.2 Serial 3 Door Access Messages

```
Door Access        1-12345 Zj\045\t "DA\v 001\u 00001"WILLIAM SMITH \CR
Denied - Armed Area                AA       ↑                    ↑
Denied - Invalid Area              IA   "FRONT ENTRANCE            ↑
Denied - Invalid Time              IT (may be included             ↑
Denied - Previous Access           AP  w/device number)     us00002"BILL JONES        \
Denied - Invalid Code              IC (may be added for access denied on Two Man Rule) ↑
Denied - Invalid User Level/Profile IL                             ↑                  ↑
                                                                ee"RI\              ee"RI\
                                                          (encryption qualifier may be included)
Examples:
Door Access
1-12345 Zj\045\t "DA\v 001\u 00001"WILLIAM SMITH \CR
Door Access with Device Name
1-12345 Zj\062\t "DA\v 001"FRONT ENTRANCE \u 00001"WILLIAM SMITH \ee"NO\CR
Access Denied with Device Name and Second User
1-12345 Zj\087\t "AA\v 001"FRONT ENTRANCE \u 00001"WILLIAM SMITH  \us00002"BILL JONES  \ee"RI\CR
```

Notes:

1. Door Access with Device Name included using XR200-485 firmware version 201 or higher.
2. Access Denied messages with Device Name and second user (Two Man Rule) included using XR200-485 firmware version 201 or higher.

```
Door Status with Zone Number

Door Status – Open         1-12345 Zj\020\t "DO\z 001\CR
Door Status – Closed                        DC       ↑
                                                  ee"RI\
                                    (encryption qualifier may be included)
```

10.2.3 Schedule Change Messages

```
Permanent Sched   1-12345 Zl\063\t "PE\io08:00"MON\ic02:30"TUE\u 00001"WILLIAM SMITH \CR
Temporary Sched                    TE         TUE            ↑                  ↑
Primary Sched                      PR         WED     a 001"EAST WAREHOUSE  \     ↑
Secondary Sched                    SE         THU (area may be included after time)  ↑
Shift 1 Sched                      S1         FRI                              ee"RI\
Shift 2 Sched                      S2         SAT                  (encryption qualifier)
Shift 3 Sched                      S3         SUN                       (may be included)
Shift 4 Sched                      S4         HOL
                                              H-A
                                              H-B
                                              H-C
Examples:
Permanent Schedule Change by User
1-12345 Zl\063\t "PE\io08:00"MON\ic02:30"TUE\u 00001"WILLIAM SMITH \CR
Shift One Schedule Change by Area by User
1-12345 Zl\086\t "S1\io08:00"MON\ic02:30"TUE\a 001"EAST WAREHOUSE \u 00001"WILLIAM SMITH \CR
Shift Two Holiday Schedule Change by Area by User
1-12345 Zl\086\t "S2\io08:00"HOL\ic02:30"HOL\a 001"EAST WAREHOUSE \u 00001"WILLIAM SMITH \ee"NO\CR
Secondary Holiday Schedule Change by User
1-12345 Zl\062\t "SE\io08:00"HOL\ic02:30"HOL\u 00001"WILLIAM SMITH \ee"RI\CR
Shift Four Holiday A Schedule Change by Area by User
1-12345 Zl\086\t "S4\io08:00"H-A\ic02:30"H-A\a 001"EAST WAREHOUSE \u 00001"WILLIAM SMITH \CR
```

Note: Holiday A (H-A) or B (H-B) or C (H-C) included using XR200-485 firmware version 201 or higher.

10.2.4 Opening/Closing Messages

```
Opening Report     1-12345 Zq\062\t "OP\u 00001"WILLIAM SMITH \a 001"EAST WAREHOUSE \CR
Closing Report                      CL                                              ↑
Late to Close                       LA                                  us00002"BILL JONES   \
                                                                  (2nd user may be included after 1st)
                                                                         (2 Man Rule, OP only)
                                                                                     ↑
                                                                               e "AC\
                                                                  (all armed qualifier)
                                                                     (may be included)
                                                                                     ↑
                                                                              ec12345\
                                                                  (traffic count qualifier)
                                                                     (may be included)
                                                                                     ↑
                                                                             ee"RI\
                                                                    (encryption qualifier)
                                                                       (may be included)
Examples:
Area Open by User
1-12345 Zq\059\t "OP\u 00001"WILLIAM SMITH \a 001"EAST WAREHOUSE \CR
Area Open Using Two Man Rule Operation
1-12345 Zq\085\t "OP\u 00001"WILLIAM SMITH \a 001"EAST WAREHOUSE \us00002"BILL JONES \ee"RI\CR
Area Close by Automatic Arming
1-12345 Zq\059\t "CL\u 32766"SCHEDULE      \a 001"EAST WAREHOUSE \CR
Area Close by Service User
1-12345 Zq\065\t "CL\u 32767"SERVICE USER  \a 001"EAST WAREHOUSE \ee"NO\CR
Area Close by Remote Access User
1-12345 Zq\059\t "CL\u 32764"REMOTE USER   \a 001"EAST WAREHOUSE \CR
Area Close with All Areas Armed Qualifier
1-12345 Zq\071\t "CL\u 00001"WILLIAM SMITH \a 001"EAST WAREHOUSE \e "AC\ee"RI\CR
Area Close with Traffic Count Qualifier
1-12345 Zq\067\t "CL\u 00001"WILLIAM SMITH \a 001"EAST WAREHOUSE \ec12345\CR
```

10.2.5 User Code Messages

```
User Code Added    1-12345 Zu\064\t "AD\um00002"BILL JONES  \u 00001"WILLIAM SMITH  \CR
User Code Changed                   CH                                              ↑
User Code Deleted                   DE                                          ee"RI\
                                                                          (encryption qualifier)
                                                                              (may be included)

Examples:
User Code Added by User
1-12345 Zu\064\t "AD\um00002"BILL JONES    \u 00001"WILLIAM SMITH   \CR
User Code Changed by User
1-12345 Zu\064\t "CH\um00002"BILL JONES    \u 00001"WILLIAM SMITH   \ee"RI\CR
User Code Deleted by User
1-12345 Zu\064\t "DE\um00002"BILL JONES    \u 00001"WILLIAM SMITH   \CR
```

10.2.6 Holiday Date Change Messages

```
Holiday Date       1-12345 Zg\046\h 20\d 12-25\u 00001"WILLIAM SMITH   \CR
                                                                        ↑
                                 t "HA\                                ee"RI\
             (Holiday A,B,C type sub-message may be included)      (encryption qualifier)
                                                                     (may be included)

Examples:
Holiday Date Change by User
1-12345 Zg\046\h 20\d 12-25\u 00001"WILLIAM SMITH   \CR
Holiday B of Holiday 20 Date Change by User
1-12345 Zg\052\t "HB\h 20\d 12-25\u 00001"WILLIAM SMITH   \ee"RI\CR
```

Note: Holiday A (H-A) or B (H-B) or C (H-C) included using XR200-485 firmware version 200 or higher.

10.2.7 Equipment Messages

```
Equip Repaired     1-12345 Ze\023\t "RP\q 123456\CR
Equip Replaced                      RL          ↑
Equip Added                         AD       ee"RI\
Equip Removed                       RM  (encryption qualifier)
Equip Adjusted                      AJ    (may be included)
Equip Test                          TS
```

10.2.8 Service Code Messages

```
Service Code Start 1-12345 Zm\022\t "ST\sY12345\CR
Service Code Stop                   SP          ↑
                                             ee"RI\
                                          (encryption qualifier)
                                             (may be included)
```

10.2.9 Other System Messages 12/22/09

```
Gen System Msg     1-12345 Zs\013\t 01\CR
                                    ↑
                              pn"78YY05015030YY\
                 (Net Programming Info Added To t 19, t 83, t 86, t 97 )
                              (may be included)
                                    ↑
                              c 01"NP\
                 (Path Info Appended To t 07, t 88)
                              (may be included)
                                    ↑
                              cf07"LB\
                 (Path Info Appended To t 72, t 73)
                              (may be included)
                                    ↑
                                 ee"RI\
                            (encryption qualifier)
                              (may be included)
                                    ↑
                             et0024\
                 (# of Hours to Next Recall Appended To t 07, t 88)
                              (may be included)

Gen System Msg w/user     1-12345 Zs\038\t 66\u 00001"WILLIAM SMITH   \CR
                                                          ↑
                                                    tz"BUPNFI\
                                              (Type Sub-Message with zone types)
                                            (may be included for "t 66" or "t 67")
                                                          ↑
                                                    ee"RI\
                                                (encryption qualifier)
                                                  (may be included)

Service Request Sys Msg     1-12345 Zs\020\t 091\v 001"FRONT OFFICE KEYPAD\u 00001"FRANKLIN WILLIAM SHEPARD III\CR
                                                                                                    ↑
                                                                                                ee"RI\
                                                                                            (encryption qualifier)
                                                                                              (may be included)
```

```
Device Sys Msg     1-12345 Zs\020\t 101\v 100\CR
                                          ↑
                                       ee"RI\
                                  (encryption qualifier)
                                    (may be included)

Abort Sys Msg      1-12345 Zs\039\t 150\u 00001"WILLIAM SMITH   \CR
                                                    ↑
                                                 ee"RI\
                                            (encryption qualifier)
                                              (may be included)
```

10.2.10 Device Status Messages

Device Status messages are only sent via PC Log reports to a PC and not sent to Host Automation from the SCS-1R. A PC Log report always contains the Minutes Ago string (& 0).

```
Door Open          1-12345 &    0Zc\020\t "DO\v 016\CR
Door Closed                          DC z 999 ↑
Door Held Open                       HO       ↑
Door Forced Open                     FO       ↑
Output On                            ON   ee"RI\
Output Off                           OF(encryption qualifier)
Output Pulse                         PL      (may be included)
```

11 SCS-1R Receiver Programming

See LT-0717 SCS-1R Operators Guide.

12 Revisions

7/31/97	8	(Added) Serial 3 Messages
7/31/97	9.2	(Added) Serial 3 Message Quick Reference
7/31/97	10.2.8	(Added) Serial 3 Messages
11/25/98	2	Changed name SCS-105 SDLC Receiver to SCS-105 Single Line Service Receiver
11/25/98	7.1	Service message added to description for generic Fault message using Serial 1 upper case W
11/25/98	7.3	Service message added to description for generic Fault message using Serial 1 little zw
11/25/98	7.13	System messages 92, 93, 94, and 95 added
11/25/98	8.1	Service (dirty smoke) added to chart
11/25/98	8.3	Event Qualifier Sub-Message Type "DT" for service added
11/25/98	8.13	(Added) Event Qualifier Sub-Message added for Service signal from dirty smoke detectors
11/25/98	9.2	Service event qualifier added to Fault in Quick Reference
5/26/99	4A	(Added) Message to send time to SCS-1 from host automation (left out of original issue)
5/26/99	8.1	Two Man Rule second code field added to grid for disarming
5/26/99	8.1	Included holiday A (HA), B (HB), or C (HC) type sub-message in grid for holiday date change
5/26/99	8.3	Included S1 - S4 in schedule type sub-message definitions
5/26/99	8.3	Included holiday A (HA), B (HB), or C (HC) in list of type sub-messages
5/26/99	8.6	"s" event qualifier added to user code field to indicate second user for Two Man Rule
5/26/99	8.7	Device sub-message now provides for 16 character names
5/26/99	8.8	Date/Time sub-message now includes Holiday A (H-A), or B (H-B), or C (H-A) for day of week
5/26/99	9.2	Broke this section into nine sections 9.2.1 - 9.2.9 for message types and provided more examples
5/26/99	9.2.1	Zone messages quick reference broken into its own section and examples given
5/26/99	9.2.2	Door access messages quick reference broken into its own section and examples given
5/26/99	9.2.2	Included door names in quick reference examples
5/26/99	9.2.3	Schedule change messages quick reference broken into its own section and examples given
5/26/99	9.2.3	Included S1 - S2 in quick reference for schedule changes and gave example
5/26/99	9.2.3	Included Holiday A (H-A), or B (H-B), or C (H-A) in quick reference for holiday schedule change
5/26/99	9.2.4	Opening/Closing messages quick reference broken into its own section and examples given
5/26/99	9.2.4	2nd user code field added to quick reference for opening with two man rule operation
5/26/99	9.2.5	User code change messages quick reference broken into its own section and examples given
5/26/99	9.2.6	Holiday date change messages quick reference broken into its own section and examples given
5/26/99	9.2.6	Included Holiday A (H-A), or B (H-B), or C (H-A) in quick reference for holiday date change
5/26/99	9.2.7	Equipment messages quick reference broken into its own section
5/26/99	9.2.8	Service man messages quick reference broken into its own section
5/26/99	9.2.9	Other system messages quick reference broken into its own section
6/10/99	8.1	Two Man Rule second code field added to grid for access
6/10/99	9.2.2	Two Man Rule second user code included for access denied messages in quick reference examples
6/10/99	10.2.8	Serial 3 messages without Serial 1 equivalent are sent to host in Serial 3 format
5/10/00	10.2.8	Serial 1 Messages from panels that do not support Serial 3 format are sent to host as Serial 1 format
11/2/01	2	Added 19,200 as a baud rate selection
11/2/01	6.2.4	Updated list of Serial 1 alarm panels
11/2/01	6.3.2	Updated list of Serial 3 alarm panels
11/2/01	7.13	System Message 59 adjusted to indicate 2500 supervised HST accounts using version 812 or higher
11/2/01	8.1	Armed status event qualifier added to chart
11/2/01	8.3	Event Qualifier Sub-Message Type "AC" for All Areas Armed added
11/2/01	8.13	Added All Areas Armed event qualifier sub-message
11/2/01	9.2.4	Added All Areas Armed event qualifier sub message example
11/2/01	10.2	Renumbered to accommodate new sections
11/2/01	10.2.1	Added description of current Set to Defaults option
11/2/01	10.2.2	Added description of current Host Test Interval option
11/2/01	10.2.3	Added description of current Acknowledge Timeout option
11/2/01	10.2.7	Added description of current Host Baud Rate option
11/2/01	10.2.8	Included all Serial 3 panels
11/2/01	10.2.9	Added description of current Abort By User option
11/2/01	10.2.10	Added description of current Area Format option
11/2/01	10.2.11	Added description of current Retries to Host Failure option
11/2/01	10.2.12	Updated list of Serial 3 alarm panels
11/2/01	10.2.13	Added description of current Print Always option
11/2/01	10.2.16	Added version number for the XR20
11/2/01	10.2.17	Added description of current Update Time to Panels option
11/2/01	10.2.18	Added description of current Hours from GMT option
11/2/01	7.13	Updated S72 and S73 messages for data network fail and restore detection
8/20/02	5.5	Added HST messages for line number 1
8/20/02	10.2.4	Added HST messages for line number 1
7/25/03	All	Renamed HST format to NET
7/25/03	7.13	Updated S12, S16, S58, S59, S72, and S73 to reference NET

Revisions continued

3/1/04	All	Added references for SCS-1R Receiver
3/1/04	2	Added SCS-1R output port assignment description
3/1/04	4A	Updated time frame for daily time updates for network panels
3/1/04	6.3.2	Add XR500(N) to list of Serial 3 panels
3/1/04	7.13	S51 changed from Zone Interrogation Trouble to Warning: Remote Programming
3/1/04	8.13	Encrypted message event qualifier added
3/1/04	9.2.1	Added example of encryption event qualifier
3/1/04	9.2.2	Added example of encryption event qualifier
3/1/04	9.2.3	Added example of encryption event qualifier
3/1/04	9.2.4	Added example of encryption event qualifier
3/1/04	9.2.5	Added example of encryption event qualifier
3/1/04	9.2.6	Added example of encryption event qualifier
3/1/04	9.2.7	Added example of encryption event qualifier
3/1/04	9.2.8	Added example of encryption event qualifier
3/1/04	9.2.9	Added example of encryption event qualifier
3/1/04	10	Added SCS-1R to receiver programming section
3/1/04	10.2.12	Added XR500 to list of panels sending Serial 3 messages
5/25/04	5.5	Updated to reflect correct line card number to be sent with message
5/25/04	7.13	System Message S17 updated for first panel checkin message operation
5/25/04	7.13	System Messages S61 – S65 description updated to be sent to Host Automation
5/25/04	7.13	System Message S60 redefined from Redundant Receiver Failure to Invalid Panel Message Format
5/25/04	10.2	Renumber to accommodate new sections
5/25/04	10.2.4	Updated to reflect correct line card number to be sent with message
5/25/04	10.2.13	Added Printer option description
5/25/04	10.2.20	Added Host Line Card Monitor option
10/7/04	6.3.2	Updated Serial 3 panel list
10/7/04	10	Removed. For programming information, see LT-0717 SCS-1R or LT-0065 SCS-1 Operator Guides.
10/7/04	10.1	Removed. For programming information, see LT-0717 SCS-1R or LT-0065 SCS-1 Operator Guides.
10/7/04	10.2	Removed. For programming information, see LT-0717 SCS-1R or LT-0065 SCS-1 Operator Guides.
2/22/05	Title	SCS-1 Version 812 removed from title page, refer to 812 (10/7/04) for SCS-1 operation.
2/22/05	2	Removed SCS-1 specific operation text. Refer to 812 (10/7/04) for SCS-1 operation.
2/22/05	3	Removed SCS-1 specific operation text. Refer to 812 (10/7/04) for SCS-1 operation.
2/22/05	4	Removed SCS-1 specific operation text. Refer to 812 (10/7/04) for SCS-1 operation.
2/22/05	4	Removed SCS-1 specific operation text. Refer to 812 (10/7/04) for SCS-1 operation.
2/22/05	7.8 M	Updated Service Code description.
2/22/05	7.13	System Message S45 Abort Signal updated to include SIA CP-01 panel operation.
2/22/05	7.13	System Message S49 redefined from Not Implemented to Cancel Signal Received.
2/22/05	7.13	System Message S51 description updated for clarification.
2/22/05	8.1	Message event 'm' renamed from Service Man to Service Code.
2/22/05	8.12	Service Man ID Sub-Message redefined for Service Code operation.
2/22/05	9.1	Service Man renamed as Service Code.
2/22/05	9.2.8	Service Man renamed as Service Code.
6/01/06	7.13	System Message S32 redefined from WARNING: Trouble Alert Silenced to ALARM: Supervised Wireless Interference.
6/01/06	7.13	System Message S33 redefined from Trouble Abort Returned to Normal to System Message 33.
6/01/06	7.13	System Message S50 description updated to include wireless RF interference text.
6/01/06	7.13	System Message S89 description updated to include wireless RF interference text.
7/17/06	7.13	System Message S20 redefined from Alarm: Carrier Locked on Line to Not Implemented.
7/17/06	7.13	System Message S21 redefined from Trouble: Message not Acknowledged to Automation Not Responding.
7/17/06	7.13	System Message S22 redefined from Carrier Off, MPX Line Restored to Automation Restored.
7/17/06	7.13	System Message S55 clarified text to indicate request for Alarm Receiver Key between panel and receiver.
7/17/06	7.13	System Message S81 redefined from DDMX – Connect to Warning: Network Card Trouble – Line x.
7/17/06	7.13	System Message S82 redefined from DDMX – Disconnect to Network Line Card Restored – Line x.
7/17/06	7.13	System Message S85 redefined from DDMX – Redundant to Not Implemented.
6/15/07	6.3.2	Added XR100 and XR100N to the list of Serial 3 Alarm Panels
6/15/07	8.14	Added Programming Sub-Message section
6/15/07	7.13.1	Referenced the Programming Sub-Message section for Serial 3 messages S19, S83, S86 and S97
6/15/07	9.2.9	Net Programming Info Added To t 19, t 83, t 86, t 97
8/27/07	7.13.1	Updated S66 and S67 from Fire Walk Test Begin and End messages to Walk Test Begin and End
12/12/07	8.3	Added "z" qualifier for System Test Begin and End in the Type Sub-Message section
12/12/07	9.2.9	Added Example for Zone Types Sent With System Test Begin or End in the Other System Messages
1/31/08	7.13.1	Revised S33 from NOT IMPLEMENTED to S33 ALARM: EARLY MORNING AMBUSH
1/31/08	7.13.1	Revised S72 & S73 print title and indicated revised description in section 9.
1/31/08	8.1	Revised chart to include Progamming Info and Path Infor for System Msgs.
1/31/08	8.3	Three digit system messages moved to Serial 3 Messages section.
1/31/08	8.15	Added section for Path Information Sub-Message.
1/31/08	9	Inserted section for Serial 3 System Messages and re-numbered following sections.
1/31/08	9	Added revised descriptions for S72 and S73 for XR500 Version 200 or higher.
1/31/08	9	Added new Serial 3 System msgs 121-126 for XR500 Version 200 or higher.
1/31/08	10.2.9	Added examples for the Path Information Sub-Message.
1/31/08		Removed old revision dates from section titles throughout.

Revisions continued

3/28/08	4.1	Clarified receiver NAK messages for time updates.
8/08/08	6.3.2	Added XT30/XT50 to Serial 3 panel's list.
8/08/08	7.13	S10 and S02 revised as cellular tower missing low communication level.
8/08/08	8.1	Included Sequence Number & # of hours to recall qualifier.
8/08/08	8.13	Included Sequence Number qualifier.
8/08/08	8.13	Included # of hours to next auto recall qualifier.
8/08/08	10.2.9	Included # of hours to next auto recall example.
1/31/09	8.1	Added Device Status to message event definitions and sub-message delimited fields tables
1/31/09	8.3	Added status type (Door & Output states) to Type sub-message to support device status
1/31/09	8.13	Added Traffic Counter event qualifier
1/31/09	9	Added CellCom Serial 3 System messages S130 - S139
1/31/09	10.2.4	Added Traffic Count quick reference example
1/31/09	10.2.10	Added Device Status Messages sub-section to Serial 3 Message Quick Reference section
1/31/09	4.1	GMT characters removed from time update string sent to receiver
12/22/09	6.1	(Revised) Canadian dialer panel always send with Minutes Ago
12/22/09	8.1	(Revised) Device number and name included with keypad panic button alarms
12/22/09	8.4	(Revised) Name length variable from 1 to 32
12/22/09	8.5	(Revised) Name length variable from 1 to 32
12/22/09	8.6	(Revised) Name length variable from 3 to 32
12/22/09	8.7	(Revised) Name length variable from 1 to 32
12/22/09	8.15	(Revised) Path info can be sent on every message
12/22/09	9.0	(S121 Revised) Checkins are not included in data calculation
12/22/09	9.0	(S122 Revised) Checkins are not included in data calculation and are continued to be sent
12/22/09	9.0	(S123 Clarify) Checkins are not sent during this period
12/22/09	9.0	(S124 Clarify) Checkins are not sent during this period
12/22/09	10.2.9	(revised) Created example of Service Request with Device and long User