AUTOSCOPE BURROUGHS POLL-SELECT ANALYSIS PROGRAM
FUNCTIONAL SPECIFICATION

Preliminary Draft

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The following are the significant changes in this update to the Autoscope Burroughs Poll-Select Analysis Program Functional Specifications

Page 20 - Line Response Time Summary

Page 26 - Line Report

Page 28 - Device Activity Report

Page 29 - Device Activity Report Description

Page 46 - Specify Device Soft Key Label Display

Page 52 - Change Range (Device Activity Report) Soft Key Label Display

Page 54&55 - Printer Output

In addition to the above major changes, many minor corrections were made to correct typographical errors, clarify wording, and improve the visual presentation.

Table of Contents

Introduction

The AUTOSCOPE Burroughs Poll-Select Analysis Specification has the following purposes:

1. It is a design document containing the functional specifications for the BPS Analysis program.

2. It is the basis for a subsequent manual defining the operation of the AUTOSCOPE BPS Analysis program.

The specifications for the AUTOSCOPE BPS Analysis program are derived to a large degree from the AUTOSCOPE BISYNC Analysis program. There are several significant changes due to differences between the BISYNC and the BPS protocols. The significant differences are the following:

1. In the Burroughs Poll-Select protocol, the concept of Control Unit (CU) is not meaningful. Each device has a unique address, and devices are not necessarily grouped by any portion of the address.

2. The Burroughs Poll-Select protocol supports both MultiPoint and Point-to-Point operations. The analysis of line activity primarily supports Multipoint activity. Point-to-point line activity is treated as a subset of of the general analysis for multipoint activity.

3. Within the BISYNC protocol, there are specific status messages and test request messages. Within the BPS protocol, there are no such unique messages at the protocol level.

1.0 General Description

The ANALYSIS mode provides the ability to compute and display the statistical performance data of a network line. Performance statistics and reports are provided in clear, summarized comparative graphic and numeric form. Line performance may be summarized for up to 24 hours at any one time. Line performance may be analyzed from live, real-time data, or from recorded/replayed line data. A maximum of 255 devices may be monitored during an analysis session. If there are more than 255 devices, the excess (devices 256 - nnn) are grouped together as a single device.

BPS (Burroughs Poll Select) Analysis is selected from the main menu by depressing the soft key labeled "ANALYSIS". BPS Analysis begins by monitoring the line for a either (a) a general or specific poll, or transmission sequence that contains a device address. This establishes a base point from which the analysis can start to operate.

When the BPS Analysis mode is selected, the Autoscope will as a default display the CURRENT BPS LINE ACTIVITY display. If another BPS analysis display has been selected during a session, then that screen will become the default when the ANALYSIS key from the main menu is depressed.

1.1 BPS Analysis Displays

The available BPS Analysis displays are:

(1) CURRENT BPS LINE ACTIVITY
(2) LINE UNILIZATION BY DEVICE
(3) LINE UTILIZATION BY TIME
(4) HOST/DEVICE TRAFFIC SUMMARY
(5) LINE RESPONSE TIME SUMMARY
(6) DEVICE TRANSACTION SUMMARY
(7) DEVICE RESPONSE TIME SUMMARY
(8) LINE REPORT
(9) DEVICE ACTIVITY REPORT
(10) UTILIZATION TREE

When in the RUN ANALYSIS mode, the displays are dynamic. This means that the displays are updated as the data is accumulated and analyzed. While in the STOP ANALYSIS analysis mode, the displays are static, since data is not being accumulated. Either real-time (live) or recorded/replayed data may be used for analysis.

1.2 Changing Analysis Displays

The ability to change analysis displays is available in all BPS Analysis modes. The CHANGE DISPLAY softkey is used to change the display. Depressing this softkeys initiates a softkey display which enables the user to review and select any of the available report displays as desired.

1.3 Freeze / Resume Display

The FREEZE DISPLAY softkey is available on all BPS Analysis Displays. When this softkey is depressed, the data on the analysis screen is held static for close study. To resume the dynamic display of data analysis, the RESUME DISPLAY softkey is depressed.

NOTE - While the display is "frozen", the analysis database continues to be updated.

1.4 Display Times

START time and CURRENT time or STOP time are shown on all BPS analysis displays. Times are automatically reset when a session is started, or completed.

The START time is displayed in the upper left-hand corner of the screen and indicates the time that the current analysis session was initiated. The START time is always displayed.

The CURRENT or STOP time is displayed according to whether the session is in RUN or STOP mode (respectively). The CURRENT time is displayed in the upper right-hand corner of the display; it indicates the current real-time while in the RUN mode. In STOP mode, the STOP time replaces the CURRENT time and indicates the time that the Analysis session was stopped by the user.

1.5 Print Control (Print-out)

In STOP ANALYSIS mode, any display may be printed by depressing the PRINT CONTROL softkey, and then selecting either PRINT SCREEN, PRINT THIS RPT, (print this report), or PRINT ALL RPTS (print all reports). The specified data is printed to the line printer. Section 4.0 of this document descripes printed reports in detail.

1.6 General Display Format

The general format of the BPS analysis displays is given below. The Autoscope screen is 80 characters wide, and 20 rows deep.

Line 1: Cols 1-6 : "START-" is always displayed.
Cols 7-14: Start time is displayed in the form of "HH:MM:SS"
Cols 15-64: Display Title. This is always centered in the display line.
Cols 65-72: "CURRENT-" or " STOP-" is displayed based on the mode of analysis.
Cols 73-80: The Current or Stop time is displayed in the form of "HH:MM:SS"

Lines 2-17: This portion of the screen (16 lines) varies based on the specific display being shown.

Line 18: Cols 1-20: " BPS ANALYSIS " is always displayed.
Cols 21-60: This area is reserved for general purpose status messages.
Cols 61-80: This is used to show record / replay track information.

Lines 19-20: This area is used for the display of softkey text, and not used as a part of the display.

The general display format is shown in figure 1-1 on the following page.

Figure 1-1 - General Display Format for BPS Analysis Screens

Note - due to limitations of this document size,
only the first 78 columns are shown.

```
         1    1    2    2    3    3    4    4    5    5    6    6    7    7
12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678

START-11:25:53 <---------- DISPLAY TITLE (CENTERED) ----------> CURRENT-11:36:
```

```
                        Main Body of the Display
                    This will vary by individual display.

   BPS ANALYSIS      <-------- STATUS MESSAGE AREA --------->(--DISK TRACK INFO
(SOFT KEY)(SOFT KEY)(SOFT KEY)(SOFT KEY)(SOFT KEY)(SOFT KEY)(SOFT KEY)(SOFT KE
( 1 TEXT )( 2 TEXT )( 3 TEXT )( 4 TEXT )( 5 TEXT )( 6 TEXT )( 7 TEXT )( 8 TEXT
```

2.0 BPS Analysis Displays

2.1 CURRENT BPS LINE ACTIVITY

Figure 2-1 (below) shows the display format for the CURRENT BPS LINE ACTIVITY. This display is described in detail on the following pages.

Figure 2-1 - CURRENT BPS LINE ACTIVITY DISPLAY

```
         1    1    2    2    3    3    4    4    5    5    6    6    7    7
12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678

START-14:58:02                CURRENT BPS LINE ACTIVITY                STOP-15:28:

          30   30   31   30   32   33   32   33   30   34   34   34   35   36   33   36
          31   42   44   32   51   52   30   33   37   33   34   35   38   46   48   3A
               T

ACTIVITY                HOST    DEV 3033  ACTIVITY                  HOST    DEV 3033
# XMIT MSGS.....         95          32    # POLLS.................   192          36
# RCV  MSGS.....         95          32    # NON-PROD POLLS......    96          22
# XMIT NAKS.....          0           0    AVG LINE  RESPONSE....    0.3         0.3
# RCV  NAKS.....          0           0    AVE LINE UTILIZATION..  17.4%        5.8%
# TIMEOUTS......          0           0    TOTAL XMIT CHARS......  9606        2848
# TRANSACTIONS..         95          32    TOTAL RCV  CHARS......  8456        3186
# LAST RSP TIME         0.3         0.3

   BPS ANALYSIS                                                AS SD REPLY TRK: 3
    STOP      FREEZE                          SPECIFY   SCROLL   CHANGE
  ANALYSIS  DISPLAY                           DEVICE    DEVICES  DISPLAY
```

The CURRENT BPS LINE ACTIVITY display provides a summary of activity between the HOST and the addressed units.

When ANALYSIS is selected from the Main Menu, and the RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BPS LINE ACTIVITY display. This display may also be accessed while in the RUN ANALYSIS mode of any other BPS ANALYSIS display by depressing the CHANGE DISPLAY softkey, and selecting LINE ACTIVITY.

Host and device activity is detected, calculated, and presented on this display in numeric form. The display is divided into three (3) areas:

1). Current Active Devices.
2). Host Activity Analysis.
3). Device Acvivity Analysis.

CURRENT BPS LINE ACTIVITY represents real-time or recorded / replayed data in a dynamic manner. The display is automatically updated as devices are detected and data is analyzed.

2.1.1 Display of Current Active Devices.

BPS Line Analysis begins when the AUTOSCOPE detects acticity between the Host and an addressed device.

Current active devices are displayed in the upper portion of the display as they are detected. When an active device is detected, it appears as a high intensity block (highlighted, reverse video). The block contains the device address (in hex format), and a status code.

Possible status codes are:

T	-	Device in a transmit state.
R	-	Device in a receive state.
blank	-	Device not currently active.

As additional devices are detected, they will be displayed from left to right in four rows up to a total of sixteen (16). Previously detected devices that have become inactive will appear as low intensity blocks. Internally, the Analysis program keeps analysis data on up to 255 unique devices, and provides for a general grouping of all devices in excess of 255.

When there are more than 16 devices, the device display portion of the screen is effectively scrolled when another device is selected by means of the SPECIFY DEVICE or SCROLL DEVICES softkeys.

The SPECIFY DEVICE softkey is used to specify a specific device address. This key is used to select the device for which the device activity is shown. When the user enters a valid device address (one already detected by the analysis program), the display is altered to show a set of 16 devices that include the specified device.

The SCROLL DEVICES soft key is used to scroll the screen horizontally to the left by eight devices, showing eight new (previously undisplayed) devices on the right or left of the screen. Scrolling only occurs if there are additional devices to be displayed.

The order in which the devices appear is the order in which they are detected.

2.1.2 Display of Host Activity Analysis

Accumulated statistics for the Host Line Activity are displayed in two columns under the heading "HOST".

The following activities are displayed.

# XMIT MSGS	Number of messages transmitted by the Host. Messages are defined as data beginning with SOH or STX, and ending with ETX.
# RCV MSGS	Number of messages received by the Host. Messages are defined as data beginning with SOH or STX, and ending with ETX.
# XMIT NAKS	Number of Negative Acknowledgements transmitted by the Host.
# RCV NAKS	Number of Negative Acknowledgements received by the Host.
# TIMEOUTS	Number of Timeouts received by the Host. Timeouts are a failure of a device to respond to a Host data transmission.
# TRANSACTIONS	A transaction is defined as the completion of a full cycle of communication initiated by a device, and the completed acknowledgement from the Host.
# LAST RSP TIME	The Last Response Time is the sum of the Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time. Mean Poll Time is 1/2 the time betweeen polls to a given device. Poll-to-Data Time is the time from poll of a given device until the start of device text (device issues STX), and varies according to device.

	Transaction Time is the time from start of device text (device issues STX) until positive acknowledgement of Host response (device issues ACK in response to Host ETX). Response Time may be visualized as the time elapsing between the action of a user entering data on a device (depressing the Return or Transmit key), and the restoration of the user's ability to operate a device (keyboard freed by the Host).
# POLLS	Number of all polls (General or Specific) transmitted by the Host over the entire line to all devices. The number of polls includes non-productive polls.
# NON-PROD POLLS	Number of non-productive polls transmitted by the Host over the entire line and to all devices. A non-productive poll is defined as any poll (General or Specific) responded to with an EOT (no traffic).
# AVG LINE RESPONSE	Average of all response times over the entire line, including all devices.
# AVG LINE UTILIZATION	Line Utilization is measured as a percentage of the total number of productive characters divided by the total number of transmitted characters. Productive characters consist of the in-sync data characters. Non-productive characters include idles, out-of-sync characters, etc.
# TOTAL HOST XMIT CHARS	Total Host transmitted characters include all productive and non-productive characters transmitted by the host.
# TOTAL HOST RCV CHARS	Total Host received characters include all productive and non-productive characters received by the host.

2.1.3 Display of Device Activity Analysis

Accumulated statistics for a device are displayed to the right of the Host Activity Analysis section of the display. As the first device is detected, the address of the device will be displayed at the top of the column and the statistics will be shown in the column. Depressing the SELECT NEXT ADR or SPECIFY DEVICE soft keys will display the summary activity of additional devices as they are detected.

The following activities are displayed.

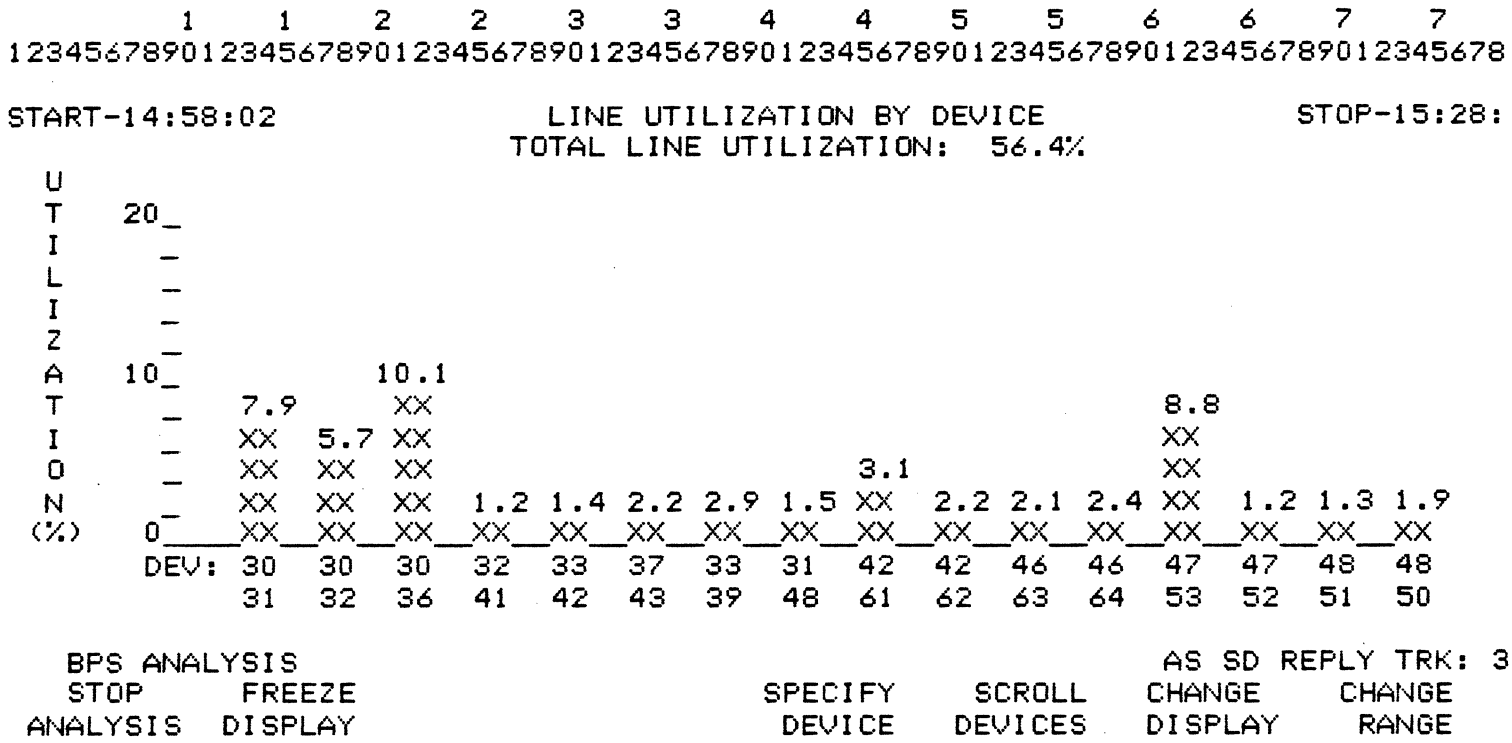
# XMIT MSGS	Number of messages transmitted by the individual device. Messages are defined as data beginning with SOH or STX, and ending with ETX.
# RCV MSGS	Number of messages received by the individual device. Messages are defined as data beginning with SOH or STX, and ending with ETX.
# XMIT NAKS	Number of Negative Acknowledgements transmitted by the individual device.
# RCV NAKS	Number of Negative Acknowledgements received by the individual device.
# TIMEOUTS	Number of Timeouts caused by in individual device. Timeouts are a failure of a device to respond to a Host data transmission.
# TRANSACTIONS	A transaction is defined as the completion of a full cycle of communication initiated by a device, and the completed with the acknowledgement by the device of a response message from the Host.
# LAST RSP TIME	The Last Response Time is the sum of the Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time. Mean Poll Time is 1/2 the time betweeen polls to a given device. Poll-to-Data Time is the time from poll of a given device until the start of device text (device issues STX), and varies according to device. Transaction Time is the time from start of device text (device issues STX) until positive acknowledgement of Host response (device issues ACK in response to Host ETX).

# POLLS	Number of all polls (General or Specific) transmitted by the Host over the entire line to all devices. The number of polls includes non-productive polls.
# NON-PROD POLLS	Number of non-productive polls transmitted by the Host over the entire line and to all devices. A non-productive poll is defined as any poll (General or Specific) responded to with an EOT (no traffic).
# AVG LINE RESPONSE	Average of all response times over the entire line, including all devices.
# AVG LINE UTILIZATION	Line Utilization is measured as a percentage of the total number of productive characters divided by the total number of transmitted characters. Productive characters consist of the in-sync data characters. Non-productive characters include idles, out-of-sync characters, etc.
# TOTAL DEV. XMIT CHARS	Total Device transmitted characters include all productive and non-productive characters transmitted by the host.
# TOTAL DEV. RCV CHARS	Total Device received characters include all productive and non-productive characters received by the host.

2.2 LINE UTILIZATION BY DEVICE

Figure 2-2 (below) shows the display format for the LINE UTILIZATION by DEVICE. This display is described in detail on the following page.

Figure 2-2 - LINE UTILIZATION BY DEVICE



The LINE UTILIZATION BY DEVICE display provides analysis of the line utilization according to individual devices. The percentage of line utilization per device is represented by a vertical bar on a graph. The total line utilization percentage is indicated at top center of the display.

A maximum of 16 devices may be displayed at one time. Other devices may be viewed by means of the SPECIFY DEVICE or SCROLL DEVICES soft keys.

The SPECIFY DEVICE soft key is used to specify a specific device address. When the user enters a valid device address (one already detected by the analysis program), the display is altered to show a set of 16 devices that include the specified device.

The SCROLL DEVICES soft key is used to scroll the screen horizontally to the left by eight devices, showing eight new (previously undisplayed) devices on the right or left of the screen. Scrolling only occurs if there are additional devices to be displayed.

The order in which the devices appear is the order in which they are detected.

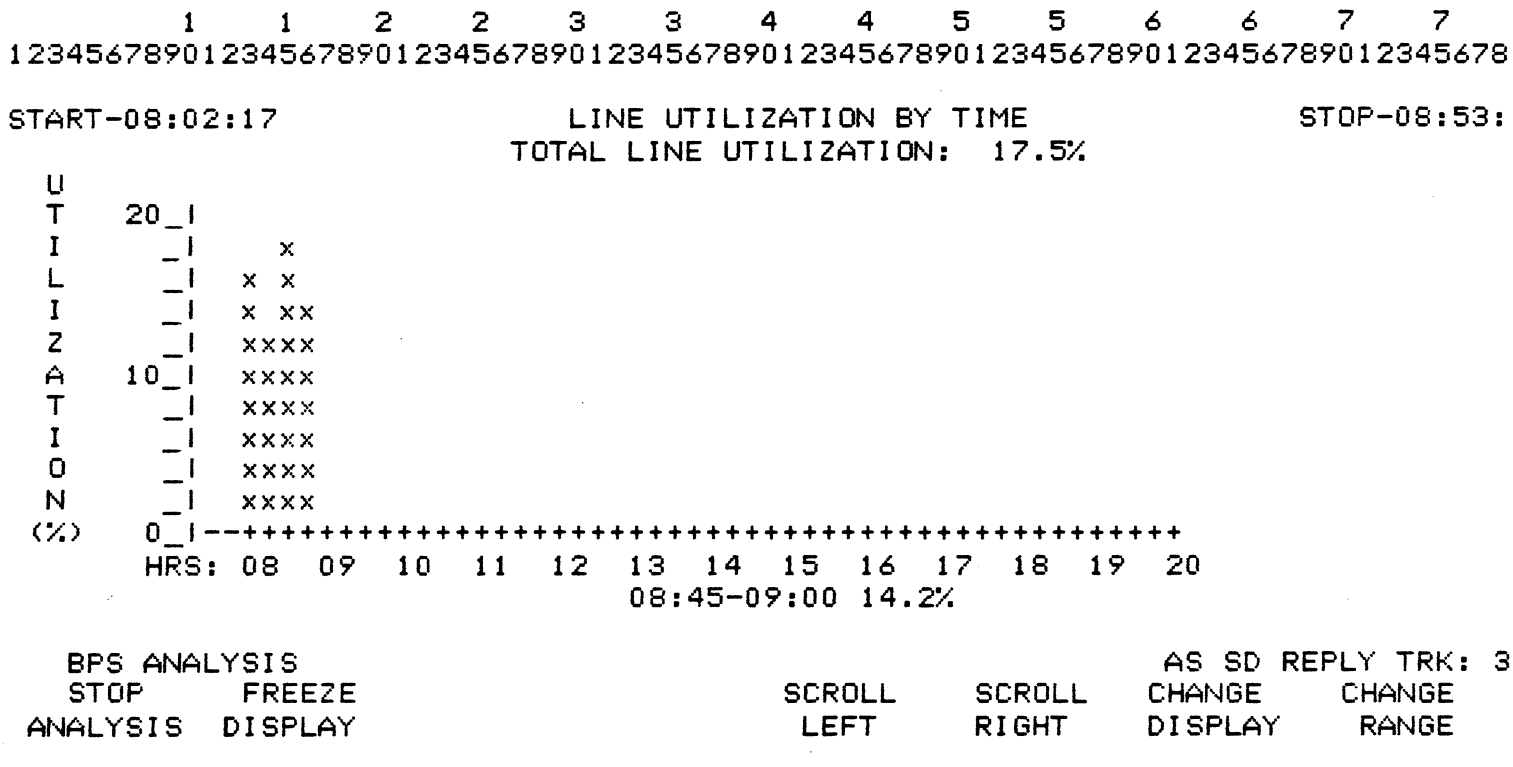
LINE UTILIZATION BY DEVICE represents real-time or recorded / replayed data in a dynamic manner - the display is automatically updated as devices are detected and data is analyzed.

The CHANGE RANGE soft key initiates a soft key label display to change the percentage scale on the bar graph if desired for viewing. The default range is 20%. Once a range has been set, it remains the new range while the Analysis program is still in operation.

2.3 LINE UTILIZATION BY TIME

Figure 2-3 (below) shows the display format for the LINE UTILIZATION BY TIME. This display is described in detail on the following page.

Figure 2-3 - LINE UTILIZATION BY TIME



The LINE UTILIZATION BY TIME display provides analysis of total line utilization for the Host and all devices.

The LINE UTILIZATION BY TIME display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing the CHANGE DISPLAY soft key, and selecting the UTILIZE BY TIME soft key.

The average line utilization percentage is calculated over 15 minute intervals and represented as vertical bars on a graph. The right-most bar indicates the 15 minute interval currently being analyzed. The time interval field in the lower area of the display indicates the 15 minute time interval currently being analyzed.

A Percent utilization field to the right of the time interval field indicates the actual percentage of utilization for the current 15 minute interval being analyzed. This percentage is accurate to a tenth of a percent. The Percent Utilization field is displayed in reverse-video (highlighted).

A total of 24 hours may be monitored, calculated and analyzed. Line Utilization of up to 12 hours will be displayed on one page of the graph. After 12 hours, the graph will automatically scroll to the left to permit continued display for a maximum of 24 hours.

The SCROLL LEFT and SCROLL RIGHT soft keys are used to scroll the display to the left or right by 1 hour intervals. Scrolling will occur only if there is data to be brought onto the display by scrolling.

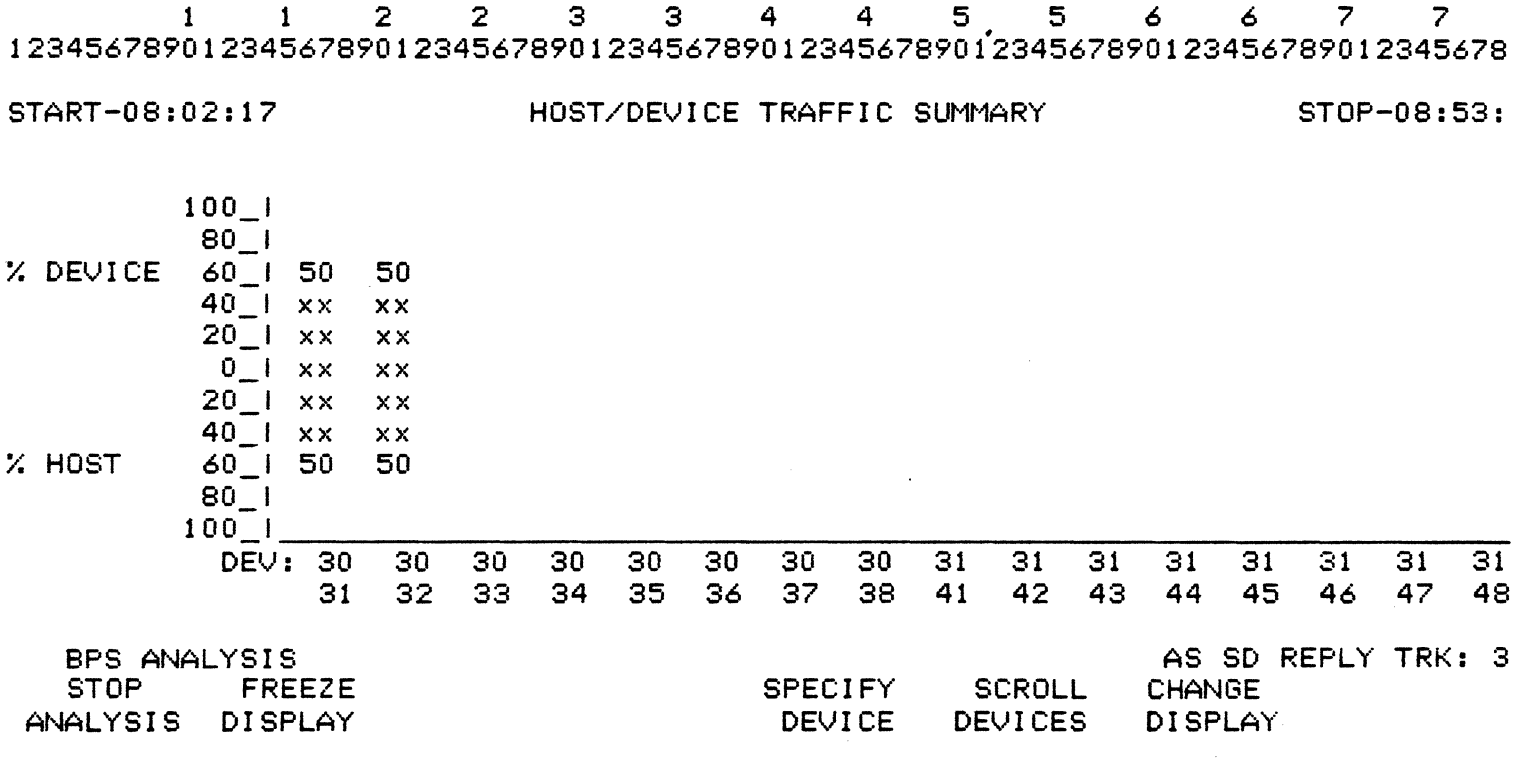
LINE UTILIZATION BY TIME represents real-time or recorded / replayed data in a dynamic manner - the display is automatically updated as devices are detected and data is analyzed.

The CHANGE RANGE softkey initiates a soft key label display to change the percentage scale on the bar graph if desired for viewing. The default range is 20%. Once a range has been set, it remains the new range while the Analysis program is still in operation.

2.4 HOST/DEVICE TRAFFIC SUMMARY

Figure 2-4 (below) shows the display format for the HOST/DEVICE TRAFFIC SUMMARY. This display is described in detail on the following page.

Figure 2-4 - HOST/DEVICE TRAFFIC SUMMARY



The HOST/DEVICE TRAFFIC SUMMARY display provides analysis of device messages in relation to Host messages.

The HOST/DEVICE TRAFFIC SUMMARY display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing the CHANGE DISPLAY soft key, and selecting the HOST/DEV TRAFFIC soft key.

The percentages of message traffic per individual device is represented by a vertical bar on the graph. The device traffic is displayed in the upper half of the graph, beginning with zero at the center. The Host traffic is displayed in the lower half of the graph, beginning with zero at the center. The total Host/Device traffic percentage is represented by the vertical line on the left of the display. A total of 16 devices may be displayed at any one time.

The devices that are displayed may be changed by use of the SPECIFIC DEVICE or the SCROLL DEVICES soft keys.

A maximum of 16 devices may be displayed at one time. Other devices may be viewed by means of the SPECIFY DEVICE or SCROLL DEVICES soft keys.

The SPECIFY DEVICE soft key is used to specify a specific device address. When the user enters a valid device address (one already detected by the analysis program), the display is altered to show a set of 16 devices that include the specified device.

The SCROLL DEVICES soft key is used to scroll the screen horizontally to the left by eight devices, showing eight new (previously undisplayed) devices on the right or left of the screen. Scrolling only occurs if there are additional devices to be displayed.

The order in which the devices appear is the order in which they are detected.

Messages are defined as beginning with STX or SOH ending with ETX or ETB.

HOST/DEVICE TRAFFIC SUMMARY represents real-time or recorded / replayed data in a dynamic manner - the display is automatically updated as devices are detected and data is analyzed.

2.5 LINE RESPONSE TIME SUMMARY

Figure 2-5 (below) shows the display format for the LINE RESPONSE TIME SUMMARY. This display is described in detail on the following pages.

Figure 2-5 - LINE RESPONSE TIME SUMMARY

```
         1    1    2    2    3    3    4    4    5    5    6    6    7    7
1234567890123456789012345678901234567890123456789012345678901234567890123456

START-08:02:17              LINE RESPONSE TIME SUMMARY              STOP-08:53:

           0-1|xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx100%
  INTERVAL    |
  (SECS)   1-2|
              |
           2-3|
              |
           3-4|
              |
           4-5|
              |
           5+ |
              |_____________________________________________________________
                                                                        100%
MIN TIME:    0.3SEC @ 08:39:14  MAX TIME:    0.4SEC @ 08:42:17   AVG TIME: 0.3SE

   BPS ANALYSIS                                          AS SD REPLY TRK: 3
    STOP      FREEZE                                      CHANGE     CHANGE
 ANALYSIS  DISPLAY                                       DISPLAY    RANGE
```

The LINE RESPONSE TIME SUMMARY display provides graphic analysis percentages of response times in both a graphic and numeric manner.

The LINE RESPONSE TIME SUMMARY display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing the CHANGE DISPLAY soft key, and selecting the LINE RESPONSE soft key.

The quantity of response times that fall within a specific range are represented as horizontal bars on a graph. The percentage of each such quantity in relation to the total response times detected is marked at the end (right hand side) of each bar. Line response time is displayed according to the Minimum, Maximum, and Average times at the bottom of this display.

The CHANGE RANGE soft key is used to select one of a set of response time ranges displayed on the left side of the chart.

MIN TIME = The minimum detected response time for the entire line and all devices, and the time it was detected.

MAX TIME = The maximum detected response time for the entire line and all devices, and the time it was detected.

AVG TIME = The average response time for the entire line and all devices.

LINE RESPONSE TIME SUMMARY represents real-time or recorded / replayed data in a dynamic manner - the display is automatically updated as devices are detected and data is analyzed.

NOTE

Response Time is the sum of the Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time.

Mean Poll Time is 1/2 the time betweeen polls to a given device.

Poll-to-Data Time is the time from poll of a given device until the start of device text (device issues STX), and varies according to device.

Transaction Time is the time from start of device text (device issues STX) until positive acknowledgement of Host response (device issues ACK in response to Host ETX).

2.6 DEVICE TRANSACTION SUMMARY

Figure 2-6 (below) shows the display format for the DEVICE TRANSACTION SUMMARY. This display is described in detail on the following page.

Figure 2-6 - DEVICE TRANSACTION SUMMARY

```
         1    1    2    2    3    3    4    4    5    5    6    6    7    7
12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678

START-08:02:17              DEVICE TRANSACTION SUMMARY                  STOP-08:53:

  T
  R   10-|
  A      |
  N      |
  S      |                   xx
  A      |                   xx
  C    5-|                   xx
  T      |                   xx                        xx
  I      |  xx               xx   xx                   xx
  O      |  xx          xx   xx   xx        xx   xx        xx
  N      |  xx   xx     xx   xx   xx   xx   xx   xx        xx
  S      +-++--++--++--++--++--++--++--++--++--++--++--++--++--++--++--++--++--++
   DEVICE: 30   30   30   30   31   31   31   31   32   32   32   32   33   33   33   33
           41   42   43   44   45   46   47   48   51   52   53   54   55   56   57   58

  BPS ANALYSIS                                                    AS SD REPLY TRK: 3
  STOP      FREEZE                          SPECIFY    SCROLL    CHANGE     CHANGE
 ANALYSIS  DISPLAY                          DEVICE    DEVICES   DISPLAY     RANGE
```

The DEVICE TRANSACTION SUMMARY display represents real-time or recorded / replayed data in a dynamic manner - the display is automatically updated as devices are detected and data is analyzed.

The DEVICE TRANSACTION SUMMARY display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing the CHANGE DISPLAY soft key, and selecting the DEVICE TRANSACT soft key.

TRANSACTIONS - This is the number of transactions completed by a device.

A transaction is defined as the completion of the full cycle of communication initiated by a device and completed by the device acknowldegement of the HOST text message response to the same device (STX to ACK of ETX).

The CHANGE RANGE soft key initiates a soft key / label display to change th scale on the bar graph if desired for viewing. The default range is 10.

A maximum of 16 devices may be displayed at one time. Other devices may be viewed by means of the SPECIFY DEVICE or SCROLL DEVICES soft keys.

The SPECIFY DEVICE soft key is used to specify a specific device address. When the user enters a valid device address (one already detected by the analysis program), the display is altered to show a set of 16 devices that include the specified device.

The SCROLL DEVICES soft key is used to scroll the screen horizontally to the left by eight devices, showing eight new (previously undisplayed) devices on the right or left of the screen. Scrolling only occurs if there are additional devices to be displayed.

The order in which the devices appear is the order in which they are detected.

2.7 DEVICE RESPONSE TIME SUMMARY

Figure 2-7 (below) shows the display format for the DEVICE RESPONSE TIME SUMMARY. This display is described in detail on the following page.

Figure 2-7 - DEVICE RESPONSE TIME SUMMARY

```
         1    1    2    2    3    3    4    4    5    5    6    6    7    7
1234567890123456789012345678901234567890123456789012345678901234567890123456789012345678

START-08:02:17              DEVICE RESPONSE TIME SUMMARY                STOP-08:53:

     1.0-|
         |
  S      |
  E      |
  C      |
  O  0.5-|
  N      |                        xx                  xx
  D      | xx   xx   xx   xx   xx        xx   xx   xx   xx   xx   xx   xx   xx   xx
  S      | xx   xx   xx   xx   xx   xx   xx   xx   xx   xx   xx   xx   xx   xx   xx
         | xx   xx   xx   xx   xx   xx   xx   xx   xx   xx   xx   xx   xx   xx   xx
         +-++--++--++--++--++--++--++--++--++--++--++--++--++--++--++--++--++--++
    DEVICE: 30   30   30   30   31   31   31   31   32   32   32   32   33   33   33   33
            41   42   43   44   45   46   47   48   51   52   53   54   55   56   57   58

  BPS ANALYSIS                                                    AS SD REPLY TRK: 3
    STOP      FREEZE                          SPECIFY    SCROLL    CHANGE     CHANGE
 ANALYSIS   DISPLAY                           DEVICE    DEVICES   DISPLAY     RANGE
```

The DEVICE RESPONSE TIME SUMMARY display represents real-time or recorded / replayed data in a dynamic manner - the display is automatically updated as devices are detected and data is analyzed.

The DEVICE REPONSE TIME SUMMARY display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing the CHANGE DISPLAY soft key, and selecting the DEVICE RESPONSE soft key.

Response Time is the sum of the Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time.

Mean Poll Time is 1/2 the time betweeen polls to a given device.

Poll-to-Data Time is the time from poll of a given device until the start of device text (device issues STX), and varies according to device.

Transaction Time is the time from start of device text (device issues STX) until positive acknowledgement of Host response (device issues ACK in response to Host ETX).

A maximum of 16 devices may be displayed at one time. Other devices may be viewed by means of the SPECIFY DEVICE or SCROLL DEVICES soft keys.

The SPECIFY DEVICE soft key is used to specify a specific device address. When the user enters a valid device address (one already detected by the analysis program), the display is altered to show a set of 16 devices that include the specified device.

The SCROLL DEVICES soft key is used to scroll the screen horizontally to the left by eight devices, showing eight new (previously undisplayed) devices on the right or left of the screen. Scrolling only occurs if there are additional devices to be displayed.

The order in which the devices appear is the order in which they are detected.

The CHANGE RANGE soft key initiates a soft key / label display to change th scale on the bar graph if desired for viewing. The default range is 1.0 seconds.

2.8 LINE REPORT

Figure 2-8 (below) shows the display format for the LINE REPORT. This display is described in detail on the following page.

Figure 2-8 - LINE REPORT

```
         1    1    2    2    3    3    4    4    5    5    6    6    7    7
12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678

START-08:02:17                          LINE REPORT                          STOP-08:53:



DEVICES.................      96        POLLING LATENCY...........              0.1
POLLS...................     192        AVG RESPONSE TIME.........              0.3
NON-PRODUCTIVE POLLS..     102        AVG LINE UTILIZATION......             16.9%
HOST MESSAGES.........      82        TRANSACTIONS..............      95
DEVICE MESSAGES.......      51        MAX TRANSACTIONS/DEVICE...      4 : 30 35
HOST NAKS.............       1        MIN TRANSACTIONS/DEVICE...      0 : 33 37
DEVICE NAKS ..........       0



 BPS ANALYSIS                                                  AS SD REPLY TRK: 3
   STOP      FREEZE                                            CHANGE
 ANALYSIS  DISPLAY                                           DISPLAY
```

The LINE REPORT provides a statistical summary of all line activity.

The LINE REPORT display represents real-time or recorded / replayed data in a dynamic manner - the display is automatically updated as devices are detected and data is analyzed.

The LINE REPORT display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing the CHANGE DISPLAY soft key, and selecting the DEVICE RESPONSE soft key.

The LINE REPORT may be printed out by using the PRINT CONTROL function.

2.9 DEVICE ACTIVITY REPORT

Figure 2-0 (below) shows the display format for the DEVICE ACTIVITY REPORT.This display is described in detail on the following page.

Figure 2-9 - DEVICE ACTIVITY REPORT

```
         1         1         2         2         3         3         4         4         5         5         6         6         7         7
123456789012345678901234567890123456789012345678901234567890123456789012345678

START-08:02:17              DEVICE ACTIVITY REPORT              STOP-08:53:

                MEAN    AVERAGE     AVERAGE     AVERAGE     AVERAGE     AVERAGE
                POLL   DEV. COMM   IN-BOUND    HOST COMM   OUT-BOUND   RESPONSE
DEV ADR         TIME     DELAY     TEXT TIME     DELAY     TEXT TIME  TIME (SEC)
------------------------------------------------------------------------------
 30 31           0.4      0.1        0.3          0.1         0.2         1.1
 30 31           0.4      0.1        0.2          0.0         0.3         1.0
 30 31           0.4      0.0        0.3          0.1         0.2         1.0
 30 31           0.3      0.1        0.1          0.0         0.4         0.9
 30 31           0.4      0.1        0.2          0.1         0.3         1.0
 30 31           0.5      0.0        0.2          0.0         0.1         0.9
 30 31           0.4      0.0        0.1          0.0         0.2         0.8
 30 31           0.4      0.0        0.3          0.1         0.3         1.1


 BPS ANALYSIS                                           AS SD REPLY TRK: 3
   STOP     FREEZE                               SPECIFY   SCROLL    CHANGE
 ANALYSIS   DISPLAY                               DEVICE   DEVICES   DISPLAY
```

The DEVICE ACTIVITY REPORT provides accumulated parameters for all devices.

The DEVICE ACTIVITY REPORT represents real-time or recorded / replayed data in a dynamic manner - the display is automatically updated as devices are detected and data is analyzed.

The DEVICE ACTIVITY REPORT display may be accessed from RUN ANALYSIS or STOP ANALYSIS modes by depressing the CHANGE DISPLAY soft key, and selecting the DEVICE ACTIVITY soft key.

A maximum of eight devices may be displayed at one time. Other devices may be viewed by means of the SPECIFY DEVICE or SCROLL DEVICES soft keys.

The SPECIFY DEVICE soft key is used to specify a specific device address. When the user enters a valid device address (one already detected by the analysis program), the display is altered to show a set of eight devices that include the specified device.

The SCROLL DEVICES soft key is used to scroll the screen vertically up or down, showing eight new (previously undisplayed) devices on the screen. Scrolling only occurs if there are additional devices to be displayed.

The order in which the devices appear is the order in which they are detected.

MEAN POLL TIME is one half of the average time between polls from the host.

AVERAGE DEV. COMM DELAY is the average amount of time used by a device to respond to a poll.

AVERAGE IN-BOUND TEXT TIME is the average amount of time taken for a device to transmit data to the host.

AVERAGE HOST COMM DELAY is the average amount of time used by the host to process device data before it starts sending data to the device.

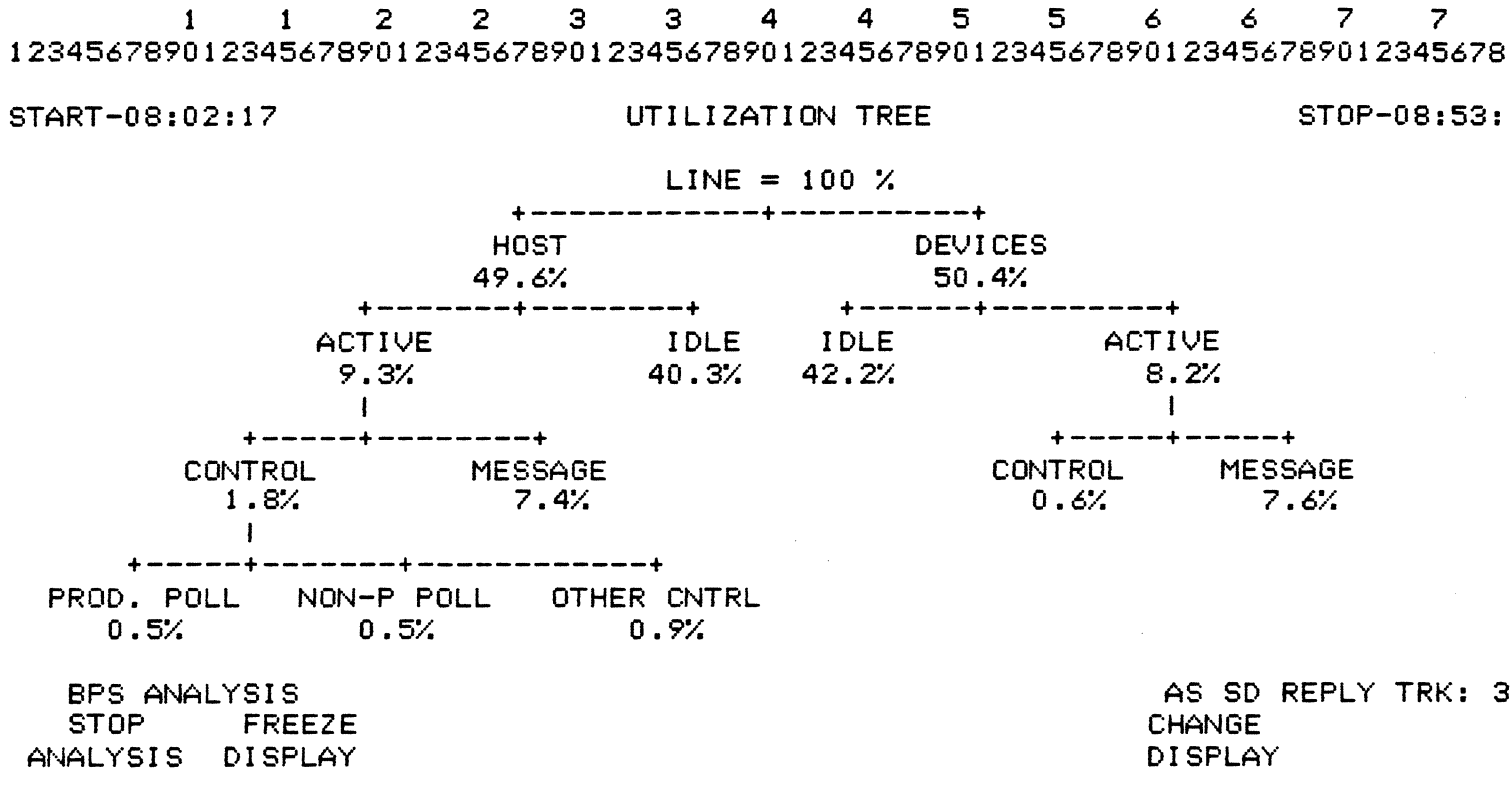
AVERAGE OUT-BOUND TEXT TIME is the average amount of time taken for the host device to transmit data to the device.

AVERAGE RESPONSE TIME is the sum of the preceeding figures. Response time may be visualized as the time elapsing between the user entering data on a device (depressing the Return or Transmit key), and the restoration of the user's ability to operate the device.

2.10 UTILIZATION TREE

Figure 2-10 (below) shows the display format for the UTILIZATION TREE. This display is described in detail on the following page.

Figure 2-10 - UTILIZATION TREE



The UTILIZATION TREE provides a percentage analysis breakdown of line utilization in both graphic and numeric form.

The UTILIZATION TREE display represents real-time or recorded / replayed data in a dynamic manner - the display is automatically updated as devices are detected and data is analyzed.

The UTILIZATION TREE display may be accessed from RUN ANALYSIS or STOP ANALYSIS modes by depressing the CHANGE DISPLAY soft key, and selecting the UTILIZE TREE soft key.

The UTILIZATION TREE may be printed out by using the PRINT CONTROL function.

3.0 BPS Analysis Soft Key / Label Display

The Autoscope is primarily controlled by means of Soft Keys. Beneath the screen are eight unlabeled keys. The bottom two lines of the display (immediately above each of the unlabeled keys) shows labels or text for each of the keys. Depending on the state of the machine, the label and function of each of these keys differs.

The BPS Analysis package follows the standards set by the the AUTOSCOPE system software, and that of the other existing analysis packages. The following sections define the lables and functioning of the soft keys which are unique to the BPS Analysis package.

The soft keys are shown in vertical rather than horizontal format in order to easily fin onto a printed page.

The sets of soft keys form an inter-related hierarchy. When the use of a soft key causes another set of soft keys to be displayed, reference is given to the section that defines the labels and functioning of that set of soft keys.

3.1 ANALYSIS Soft Key Label Display

The following set of soft keys is displayed when the ANALYSIS soft key on the Main Menu is depressed.

Soft Key Label	Soft Key Function
RUN ANALYSIS	This initiates the Analysis process.
PRINT CONTROL	Sets up sofft key display to set up and select print control functions. See section 3.21 for details.
	Soft Key # 3 is unused.
	Soft Key # 4 is reserved for Alarm Acknowledgement.
CONFIG CONTROL	Initiates operating configuration modifications. This is a standard function, and is not a part the analysis package.
DISK CONTROL	Sets up and begins disk operating functions. This is a standard function, and is not a part of the analysis package.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
MAIN MENU	Returns to MAIN MENU.

3.2 CURRENT BPS LINE ACTIVITY Soft Key Label Display

The following set of soft keys is displayed when the CURRENT BPS LINE ACTIVITY is displayed, and analysis is running.

Soft Key	Soft Key Function
STOP ANALYSIS	Stops the analysis process. The ANALYSIS soft key label set is displayed. See section 3.1 for details.
FREEZE DISPLAY / RESUME DISPLAY	Freezes / Resumes data displayed on the screen only. All other analysis functions continue including data capture. (Toggle type action).
	Soft Key # 3 is unused.
	Soft Key # 4 is reserved for Alarm Acknowledgement.
SPECIFY DEVICE	The SPECIFY DEVICE softkey is used to specify a specific device address. See section 3.14 for details.
SCROLL DEVICES	The SCROLL DEVICES soft key is used to scroll the screen to show other devices. See setion 3.15 for details.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
	Soft Key # 8 is unused.

3.3 LINE UTILIZATION BY DEVICE Soft Key Label Display

The following set of soft keys is displayed when the LINE UTILIZATION BY DEVICE is displayed, and analysis is running.

Soft Key	Soft Key Function
STOP ANALYSIS	Stops the analysis process. The ANALYSIS soft key label set is displayed. See section 3.1 for details.
FREEZE DISPLAY / RESUME DISPLAY	Freezes / Resumes data displayed on the screen only. All other analysis functions continue including data capture. (Toggle type action).
	Soft Key # 3 is unused.
	Soft Key # 4 is reserved for Alarm Acknowledgement.
SPECIFY DEVICE	The SPECIFY DEVICE softkey is used to specify a specific device address. See section 3.14 for details.
SCROLL DEVICES	The SCROLL DEVICES soft key is used to scroll the screen to show other devices. See setion 3.15 for details.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
CHANGE RANGE	Enables user to select bar graph scale. See section 3.16 for details.

3.4 LINE UTILIZATION BY TIME Soft Key Label Display

The following set of soft keys is displayed when the LINE UTILIZATION BY TIME is displayed, and analysis is running.

Soft Key	Soft Key Function
STOP ANALYSIS	Stops the analysis process. The ANALYSIS soft key label set is displayed. See section 3.1 for details.
FREEZE DISPLAY / RESUME DISPLAY	Freezes / Resumes data displayed on the screen only. All other analysis functions continue including data capture. (Toggle type action).
	Soft Key # 3 is unused.
	Soft Key # 4 is reserved for Alarm Acknowledgement.
SCROLL LEFT	Scrolls screen to the left by 1 hour (four fifteen minute intervals). Scrolling only occurs if there is data to be scrolled onto the screen.
SCROLL RIGHT	Scrolls screen right by 1 hour (four fifteen minute intervals). Scrolling only occurs if there is data to be scrolled onto the screen.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
CHANGE RANGE	Enables user to select bar graph scale. See section 3.17 for details.

3.5 HOST/DEVICE TRAFFIC SUMMARY Soft Key Label Display

The following set of soft keys is displayed when the HOST/DEVICE TRAFFIC SUMMARY is displayed, and analysis is running.

Soft Key	Soft Key Function
STOP ANALYSIS	Stops the analysis process. The ANALYSIS soft key label set is displayed. See section 3.1 for details.
FREEZE DISPLAY / RESUME DISPLAY	Freezes / Resumes data displayed on the screen only. All other analysis functions continue including data capture. (Toggle type action).
	Soft Key # 3 is unused.
	Soft Key # 4 is reserved for Alarm Acknowledgement.
SPECIFY DEVICE	The SPECIFY DEVICE softkey is used to specify a specific device address. See section 3.14 for details.
SCROLL DEVICES	The SCROLL DEVICES soft key is used to scroll the screen to show other devices. See setion 3.15 for details.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
	Soft Key # 8 is unused.

3.6 LINE RESPONSE TIME SUMMARY Soft Key Label Display

The following set of soft keys is displayed when the LINE RESPONSE TIME SUMMARY is displayed, and analysis is running.

Soft Key	Soft Key Function
STOP ANALYSIS	Stops the analysis process. The ANALYSIS soft key label set is displayed. See section 3.1 for details.
FREEZE DISPLAY / RESUME DISPLAY	Freezes / Resumes data displayed on the screen only. All other analysis functions continue including data capture. (Toggle type action).
	Soft Key # 3 is unused.
	Soft Key # 4 is reserved for Alarm Acknowledgement.
	Soft Key # 5 is unused.
	Soft Key # 6 is unused.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
CHANGE RANGE	Enables user to select bar graph scale. See section 3.20 for details.

3.7 DEVICE TRANSACTION SUMMARY Soft Key Label Display

The following set of soft keys is displayed when the DEVICE TRANSACTION SUMMARY is displayed, and analysis is running.

Soft Key	Soft Key Function
STOP ANALYSIS	Stops the analysis process. The ANALYSIS soft key label set is displayed. See section 3.1 for details.
FREEZE DISPLAY / RESUME DISPLAY	Freezes / Resumes data displayed on the screen only. All other analysis functions continue including data capture. (Toggle type action).
	Soft Key # 3 is unused.
	Soft Key # 4 is reserved for Alarm Acknowledgement.
SPECIFY DEVICE	The SPECIFY DEVICE softkey is used to specify a specific device address. See section 3.14 for details.
SCROLL DEVICES	The SCROLL DEVICES soft key is used to scroll the screen to show other devices. See setion 3.15 for details.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
CHANGE RANGE	Enables user to select bar graph scale. See section 3.18 for details.

3.8 DEVICE RESPONSE TIME SUMMARY Soft Key Label Display

The following set of soft keys is displayed when the DEVICE RESPONSE TIME SUMMARY is displayed, and analysis is running.

Soft Key	Soft Key Function
STOP ANALYSIS	Stops the analysis process. The ANALYSIS soft key label set is displayed. See section 3.1 for details.
FREEZE DISPLAY / RESUME DISPLAY	Freezes / Resumes data displayed on the screen only. All other analysis functions continue including data capture. (Toggle type action).
	Soft Key # 3 is unused.
	Soft Key # 4 is reserved for Alarm Acknowledgement.
SPECIFY DEVICE	The SPECIFY DEVICE softkey is used to specify a specific device address. See section 3.14 for details.
SCROLL DEVICES	The SCROLL DEVICES soft key is used to scroll the screen to show other devices. See setion 3.15 for details.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
CHANGE RANGE	Enables user to select bar graph scale. See section 3.19 for details.

3.9 LINE REPORT Soft Key Label Display

The following set of soft keys is displayed when the LINE REPORT is displayed, and analysis is running.

Soft Key	Soft Key Function
STOP ANALYSIS	Stops the analysis process. The ANALYSIS soft key label set is displayed. See section 3.1 for details.
FREEZE DISPLAY / RESUME DISPLAY	Freezes / Resumes data displayed on the screen only. All other analysis functions continue including data capture. (Toggle type action).
	Soft Key # 3 is reserved for Alarm Acknowledgement.
	Soft Key # 4 is unused.
	Soft Key # 5 is unused.
	Soft Key # 6 is unused.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
	Soft Key # 8 is unused.

3.10 DEVICE ACTIVITY REPORT Soft Key Label Display

The following set of soft keys is displayed when the DEVICE ACTIVITY REPORT is displayed, and analysis is running.

Soft Key	Soft Key Function
STOP ANALYSIS	Stops the analysis process. The ANALYSIS soft key label set is displayed. See section 3.1 for details.
FREEZE DISPLAY / RESUME DISPLAY	Freezes / Resumes data displayed on the screen only. All other analysis functions continue including data capture. (Toggle type action).
	Soft Key # 3 is unused.
	Soft Key # 4 is reserved for Alarm Acknowledgement.
SPECIFY DEVICE	The SPECIFY DEVICE softkey is used to specify a specific device address. See section 3.14 for details.
SCROLL DEVICES	The SCROLL DEVICES soft key is used to scroll the screen to show other devices. See setion 3.15 for details.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
	Soft Key # 8 is unused.

3.11 UTILIZATION TREE Soft Key Label Display

The following set of soft keys is displayed when the UTILIZATION TREE is displayed, and analysis is running.

Soft Key	Soft Key Function
STOP ANALYSIS	Stops the analysis process. The ANALYSIS soft key label set is displayed. See section 3.1 for details.
FREEZE DISPLAY / RESUME DISPLAY	Freezes / Resumes data displayed on the screen only. All other analysis functions continue including data capture. (Toggle type action).
	Soft Key # 3 is unused.
	Soft Key # 4 is reserved for Alarm Acknowledgement.
	Soft Key # 5 is unused.
	Soft Key # 6 is unused.
CHANGE DISPLAY	The CHANGE DISPLAY soft key is used to change analysis displays. See section 3.12 for details.
	Soft Key # 8 is unused.

3.12 CHANGE DISPLAY Soft Key Label Display

The following set of soft keys is displayed when the CHANGE DISPLAY soft key is depressed. This operates whether or not analysis is running.

Soft Key	Soft Key Function
LINE ACTIVITY	Selects CURRENT BPS LINE ACTIVITY display.
DEV LINE UTILIZE	Selects LINE UTILIZATION BY DEVICE display.
UTILIZE BY TIME	Selects LINE UTILIZATION BY TIME display.
HOST/DEV TRAFFIC	Selects HOST DEVICE TRAFFIC SUMMARY display.
LINE RESPONSE	Selects LINE RESPONSE TIME SUMMARY display.
DEVICE TRANSACT	Selects DEVICE TRANSACTION SUMMARY display.
NEXT LIST	Sets up soft key labels to select additional analysis displays. See section 3.13 for details.
EXIT	Returns to previous soft key selections.

3.13 NEXT LIST Soft Key Label Display

The following set of soft keys is displayed when the CHANGE DISPLAY soft key is depressed. This operates whether or not analysis is running.

Soft Key	Soft Key Function
DEVICE RESPONSE	Selects DEVICE RESPONSE TIME SUMMARY display.
LINE REPORT	Selects LINE REPORT display.
DEVICE ACTIVITY	Selects DEVICE ACTIVITY REPORT display.
UTILIZE TREE	Selects UTILIZATION TREE display.
	Soft key # 5 is unused.
	Soft Key # 6 is unused.
PREV LIST	Sets up soft key labels to select additional analysis displays. See section 3.12 for details.
EXIT	Returns to previous soft key selections.

3.14 SPECIFY DEVICE Soft Key Label Display

The following set of soft keys is displayed when the SPECIFY DEVICE soft key is depressed. This operates whether or not analysis is running. When the SPECIFY DEVICE soft key is depressed, a portion of the status line displays the current device address, and allows the user to enter a new device address either from the soft keys (shown below) or from an auxilliary keyboard.

Soft Key	Soft Key Function
CURSOR LEFT <	Moves the cursor left 1 character in the four character device address area displayed.
CURSOR > RIGHT	Moves the cursor right 1 character in the four character device address area displayed.
CHANGE CHARCTER	Changes the character displayed. Characters cycle thru the following sequence: "0123456789ABCDEF".
	Soft Key # 4 is unused.
	Soft Key # 5 is unused/
	Soft Key # 6 is unused.
ENTER	Enters the current value as the device address. If the specified adress is invalid or unknown, the new address will not be entered, and an error message will be shown.
EXIT	Restores soft key labels for the current analysis display.

3.15 SCROLL DEVICES Soft Key Label Display

The following set of soft keys is displayed when the SCROLL DEVICES soft key is depressed. This operates whether or not analysis is running.

Soft Key	Soft Key Function
	Soft Key # 1 is unused.
	Soft Key # 2 is unused.
	Soft Key # 3 is unused.
	Soft Key # 4 is unused.
SCROLL LEFT	This scrolls the screen left, showing up to eight additional devices to the left. Scrolling only occurs if there are additional devices to be shown.
SCROLL RIGHT	This scrolls the screen right, showing up to eight additional devices to the right. Scrolling only occurs if there are additional devices to be shown.
	Soft Key # 7 is unused.
EXIT	Restores soft key labels for the current analysis display.

3.16 CHANGE RANGE (Line Utilization by Device) Soft Key Label Display

The following set of soft keys is displayed when the CHANGE RANGE soft key on the LINE UTILIZATION BY DEVICE display is depressed. This operates whether or not analysis is running.

Soft Key	Soft Key Function
10 %	Extends bar graph scale to 10%
20 %	Extends bar graph scale to 20%
30 %	Extends bar graph scale to 30%
40 %	Extends bar graph scale to 40%
50 %	Extends bar graph scale to 50%
60 %	Extends bar graph scale to 60%
70 %	Extends bar graph scale to 70%
EXIT	Restores soft key labels for the current analysis display.

3.17 CHANGE RANGE (Line Utilization by Time) Soft Key Label Display

The following set of soft keys is displayed when the CHANGE RANGE soft key on the LINE UTILIZATION BY TIME display is depressed. This operates whether or not analysis is running.

Soft Key	Soft Key Function
5 %	Extends bar graph scale to 5%
10 %	Extends bar graph scale to 10%
15 %	Extends bar graph scale to 15%
20 %	Extends bar graph scale to 20%
30 %	Extends bar graph scale to 30%
40 %	Extends bar graph scale to 40%
50 %	Extends bar graph scale to 50%
EXIT	Restores soft key labels for the current analysis display.

3.18 CHANGE RANGE (Device Transaction Summary) Soft Key Label Display

The following set of soft keys is displayed when the CHANGE RANGE soft key on the DEVICE TRANSACTION SUMMARY display is depressed. This operates whether or not analysis is running.

Soft Key	Soft Key Function
10 TRANS.	Extends bar graph scale to 10 transactions.
100 TRANS.	Extends bar graph scale to 100 transactions.
250 TRANS.	Extends bar graph scale to 250 transactions.
500 TRANS.	Extends bar graph scale to 500 transactions.
1000 TRANS.	Extends bar graph scale to 1000 transactions.
5000 TRANS.	Extends bar graph scale to 5000 transactions.
10000 TRANS.	Extends bar graph scale to 10,000 transactions.
EXIT	Restores soft key labels for the current analysis display.

3.19 CHANGE RANGE (Device Response Time Summary) Soft Key Label Display

The following set of soft keys is displayed when the CHANGE RANGE soft key on the DEVICE TRANSACTION RESPONSE TIME display is depressed. This operates whether or not analysis is running.

Soft Key	Soft Key Function
1 SECONDS	Extends bar graph scale to 1 second.
2 SECONDS	Extends bar graph scale to 2 seconds.
4 SECONDS	Extends bar graph scale to 4 seconds.
6 SECONDS	Extends bar graph scale to 6 seconds.
10 SECONDS	Extends bar graph scale to 10 seconds.
20 SECONDS	Extends bar graph scale to 20 seconds.
60 SECONDS	Extends bar graph scale to 60 seconds.
EXIT	Restores soft key labels for the current analysis display.

3.20 CHANGE RANGE (Line Response Time Summary) Soft Key Label Display

The following set of soft keys is displayed when the CHANGE RANGE soft key on the LINE RESPONSE TIME SUMMARY display is depressed. This operates whether or not analysis is running.

Soft Key	Soft Key Function
1-5 %	Bar Graph labels will be set as follows: 0-1% 1-2% 2-3% 3-4% 4-5% > 5%
1-10 %	Bar Graph labels will be set as follows: 0-2% 2-4% 4-6% 6-8% 8-10% > 10%
1-15 %	Bar Graph labels will be set as follows: 0-3% 3-6% 6-9% 9-12% 12-15% > 15%
1-20 %	Bar Graph labels will be set as follows: 0-4% 4-8% 8-12% 12-16% 16-20% > 20%
	Soft Key # 5 is unused.
	Soft Key # 6 is unused.
	Soft Key # 7 is unused.
EXIT	Restores soft key labels for the current analysis display.

3.21 PRINT CONTROL Soft Key Label Display

The following set of soft keys is displayed when the PRINT CONTROL soft key on any of the displays is depressed. This operates only when in STOP ANALYSIS mode. See section 4.0 for a further description of the report content.

Soft Key	Soft Key Function
PRINT SCREEN	Initiates print-out of the data displayed on this screen only.
PRINT THIS RPT	Initiates a print-out of this complete report.
PRINT ALL RPTS	Initiates print-out of all reports.
	Soft Key # 4 is unused.
	Soft Key # 5 is unused.
	Soft Key # 6 is unused.
PRINTER CONFIG	Initiates soft key / label display to modify the printer configuration.
EXIT	Restores soft key labels for the current analysis display.

4.0 Printer Output

Printer Output is initiated the PRINT CONTROL soft key (section 3.1), and a selection of either PRINT SCREEN, PRINT THIS RPT, or PRINT ALL RPTS (section 3.21).

4.1 PRINT SCREEN

The PRINT SCREEN soft key prints the contents of the current screen to the printer.

4.2 PRINT THIS RPT

The PRINT THIS RPT soft key prints the a full report the current screen to the printer. The following is a description of the reports based on the displayed screens.

CURRENT BPS LINE ACTIVITY: Only the display screen is displayed. The report printed is for the selected device.

LINE UTILIZATION BY DEVICE: From one to sixteen pages are printed, each page showing up to sixteen devices. Only as many pages are printed as are needed to show the line utilization for all known devices. The range used in printing is the currently selected range for the line utilization by device display.

LINE UTILIZATION BY TIME: One or two pages are printed for the line utilization by time report; two pages are printed if the time of the analysis exceeds twelve hours. The range used in printing is the currently selected range for the line utilization by time display.

HOST/DEVICE TRAFFIC SUMMARY: From one to sixteen pages are printed, each page showing up to sixteen devices. Only as many pages are printed as are needed to show the host/traffic summary for all known devices.

LINE RESPONSE TIME SUMMARY: Only one page is are printed for the line response time summary report. The range used in printing is the currently selected range for the line response time summary display.

DEVICE TRANSACTION SUMMARY: From one to sixteen pages are printed, each page showing up to sixteen devices. Only as many pages are printed as are needed to show the device transaction summary for all known devices. The range used in printing is the currently selected range for the device transaction summary display.

DEVICE RESPONSE TIME SUMMARY: From one to sixteen pages are printed, each page showing up to sixteen devices. Only as many pages are printed as are needed to show the device response time summary for all known devices. The range used in printing is the currently selected range for the device response time summary display.

LINE REPORT: Only one page is are printed for the line report. The page is printed in the same manner as the screen is displayed.

DEVICE ACTIVUTY SUMMARY: From one to sixteen pages are printed, each page showing up to sixteen devices. Only as many pages are printed as are needed to show the device activity summary for all known devices.

UTILIZATION TREE: Only one page is are printed for the utilization tree report. The page is printed in the same manner as the screen is displayed.

4.3 PRINT ALL RPTS

The PRINT ALL RPTS soft key prints all 10 reports in their entirity. The reports contain the same data as described in section 4.2.