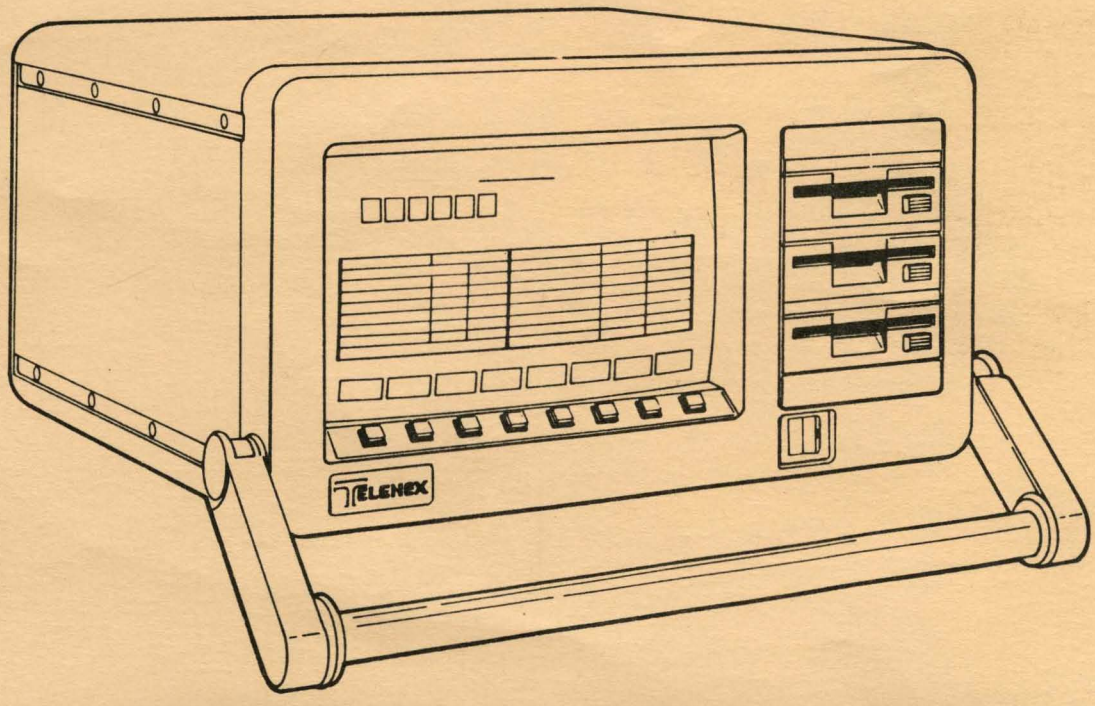
BISYNCHRONOUS PROTOCOL APPLICATION PROGRAM



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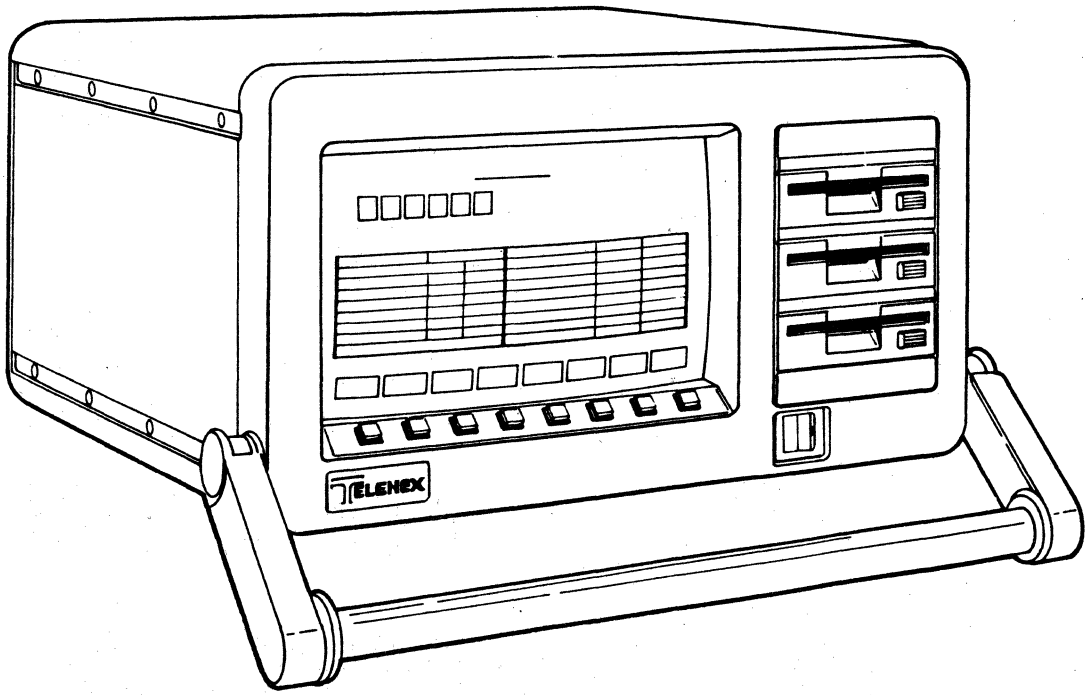
BISYNCHRONOUS PROTOCOL APPLICATION PROGRAM



AUTOSCOPE™

BISYNCHRONOUS PROTOCOL APPLICATION PROGRAM

TABLE OF CONTENTS

BISYNCHRONOUS PROTOCOL APPLICATION PROGRAM

This program provides the ability to extract information about the network at any level, gather performance data, compute performance statistics, provide error detection and alarming and display the data in virtually any form.

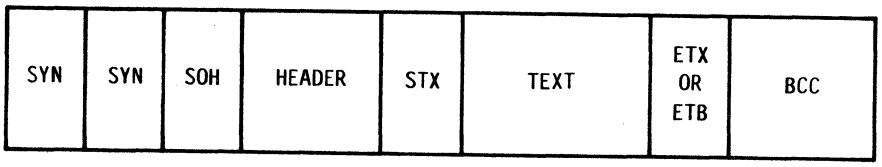
1.0 Introduction

Bisychronous (Bisync) is a method of transmission based on synchronous system clocks and two (2) defined bit patterns called SYNC characters used to synchronize the transmitter and receiver, at the start of transmission. The receiving equipment trains on this sequence and adjusts its timing to operate in step with the transmitting station. The data is sent as a string of binary digits (bits) composed as one or more transmission blocks that can be variable in length.

The communication link consists of a single control unit (TCU) and up to thirty two (32) tributary units (CU).

The Control Characters and Sequences that are used to control the flow of data on the communication link are listed in future paragraphs.

The Bisync Protocol Application Program uses the control characters and sequences to interpret and analyze the data transmitted and the data link.



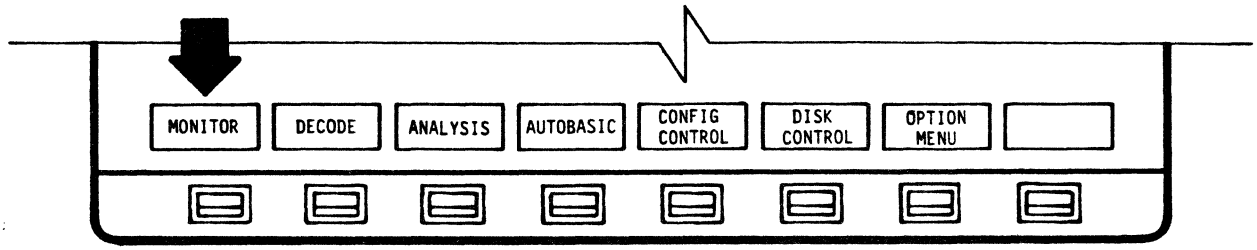
TYPICAL BISYNC MESSAGE FORMAT

2.0 BISYNCHRONOUS MONITOR MODE

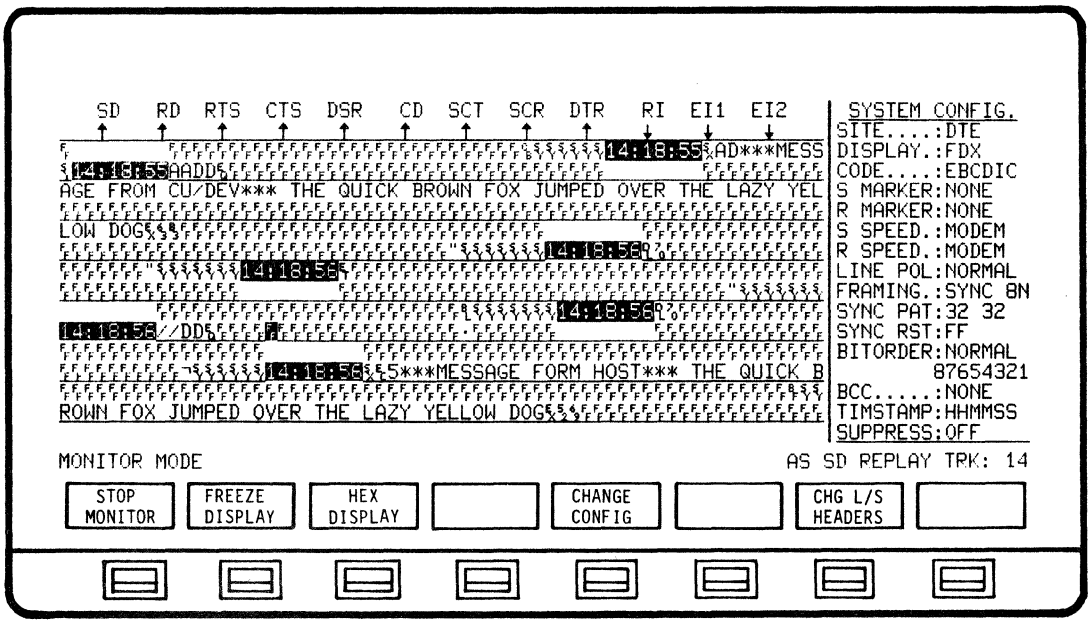
The Monitor Mode provides the ability to observe the Bisync data activity on a line and capture the data for future analysis.

For Monitor Mode operation and set up, consult the following sections in the basic User Manual;

CONFIGURATION CONTROL - 3.7
DISK OPERATING SYSTEM - 3.8
INTERFACE CONNECTION UNIT - 3.11
MONITOR MODE - 3.12



MAIN MENU



TYPICAL BISYNC MONITOR DISPLAY

3.0 BISYNCHRONOUS DECODE MODE

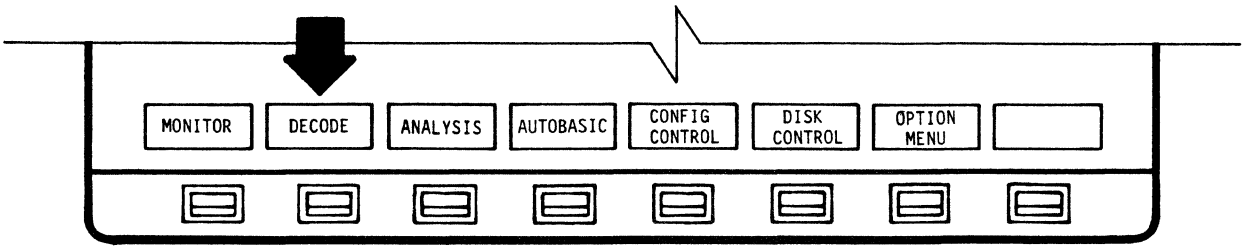
3.1 General Description

The Decode mode provides the ability to observe the data activity on a line, capture data for future analysis and also review captured data.

The Bisynchronous Application Program translates the data into control characters, control sequences and abbreviated comments.

Decode Modes consists of the following protocols.

X3.28
3271

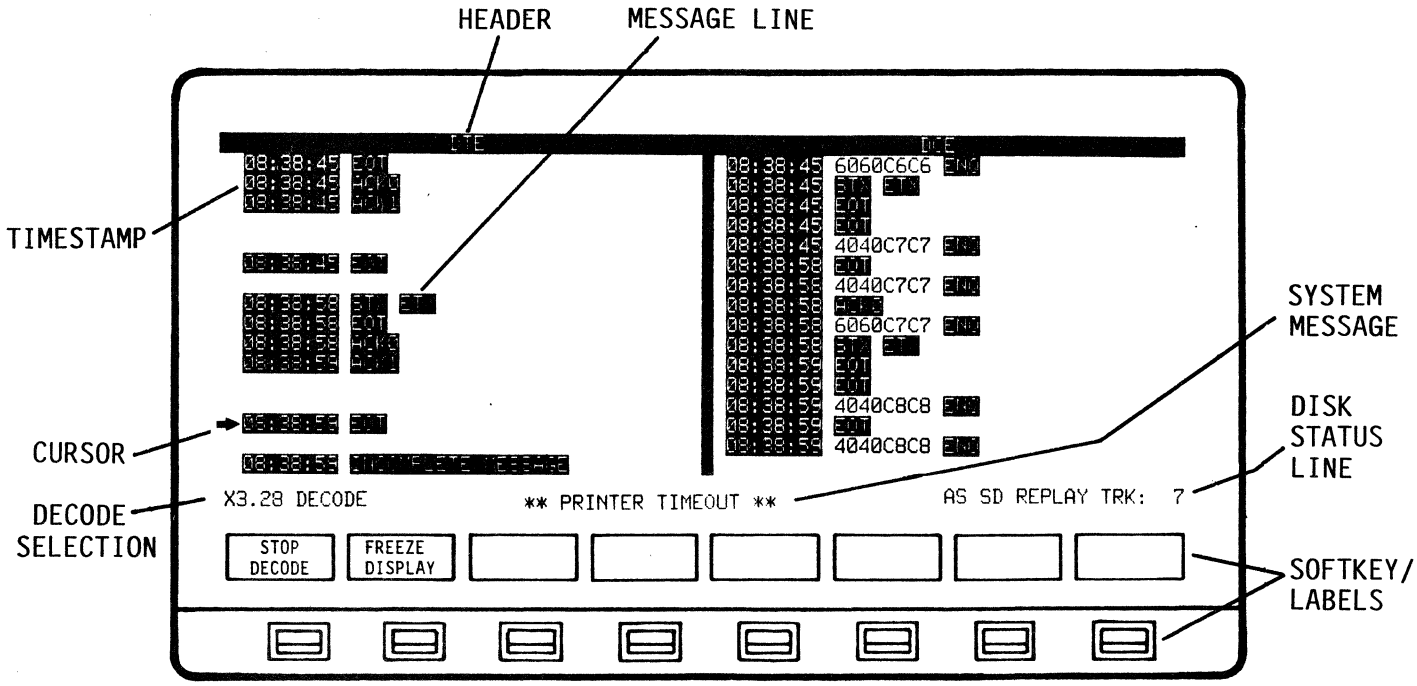


MAIN MENU

The Decode Mode is selected from the main menu.

3.2 X3.28 Decode Mode

3.2.1 X3.28 Decode Display and Format



TYPICAL X3.28 DECODE DISPLAY

The X3.28 Decode display will be a split screen format with a Primary field(Left) and a Secondary field(Right).The Send or Receive field can be positioned (Right or Left) on the display by SITE designation in System Configuration.

The headers will be displayed in reverse video on the top row of the display format.

The decoded display will consists of a Timestamp and the decoded message. The message line will include Prefixes, Control Characters, Sequences and Error Messages.

Prefixes - 1 to 15 characters - may contain ID data,device address and other network specific information.

Control Characters - (Ref 3.2.1.1) - reverse video.

Sequences - (Ref 3.2.1.2) - reverse video.

Error Messages - (Ref 3.2.1.3) - reverse video.

Message display format; If a receive message follows a send message they will both be displayed on the same line. If a send message follows a send message, then the receive side will be spaced and the second send message will be displayed on the next line. If a receive message follows a receive message the send side will be spaced and the second receive message will be displayed on the next line.

Decode selection (X3.28 DECODE) and system type messages (***BUFFER LIMIT***) will be on the bottom row, above Softkey/Labels.

A system cursor character is used to indicate next line displayed.

3.2.1.1 Control Characters

The following Control Characters are used by X3.28 to regulate data and message flow. Some of these characters may be prefixed with an optional 1 to 15 characters.

SOH	Start Of Header
STX	Start of Text
ETX	End of Text
EOT	End Of Transmission
ETB	End of Transmission Block
ITB	Intermediate Text Block (IBM)
ENQ	Enquiry (Prefix)
ACK	Acknowledgment (Prefix)
NAK	Negative Acknowledgment (Prefix)
SYN	Synchronous idle
DLE	Data Link Escape

3.2.1.2 Control Sequences

The following Control Sequences are all two (2) character sequences that begin with the DLE character. Some of these sequences may be prefixed with an optional 1 to 15 characters.

DEOT	Mandatory Disconnect	DLE EOT
ACKN	Acknowledgment N	DLE "0".."7" (Prefix)
SOTB	Start Of Text Block	DLE "=" (Inconsistent)
TSOH	Transparent Start Of Header	DLE SOH
TSTX	Transparent Start of Text	DLE STX
TEXT	Transparent End of Text	DLE ETX
TETB	Transparent End of Block	DLE ETB
TITB	Transparent Intermediate Text Block	DLE ITB (IBM)
TSYN	Transparent Synchronous idle	DLE SYN
TDLE	Data DLE in Transparent Data	DLE DLE
WACK	Wait after Acknowledgment	DLE ";" (Prefix)
TENQ	Transparent Block Abort	DLE ENQ
RINT	Reverse Interrupt	DLE "<"

3.2.1.3 Error Messages

INVALID DLE SEQUENCE
An illegal character follows a DLE character.

INVALID PREFIX
Message prefix is invalid. (To long or contains illegal character)

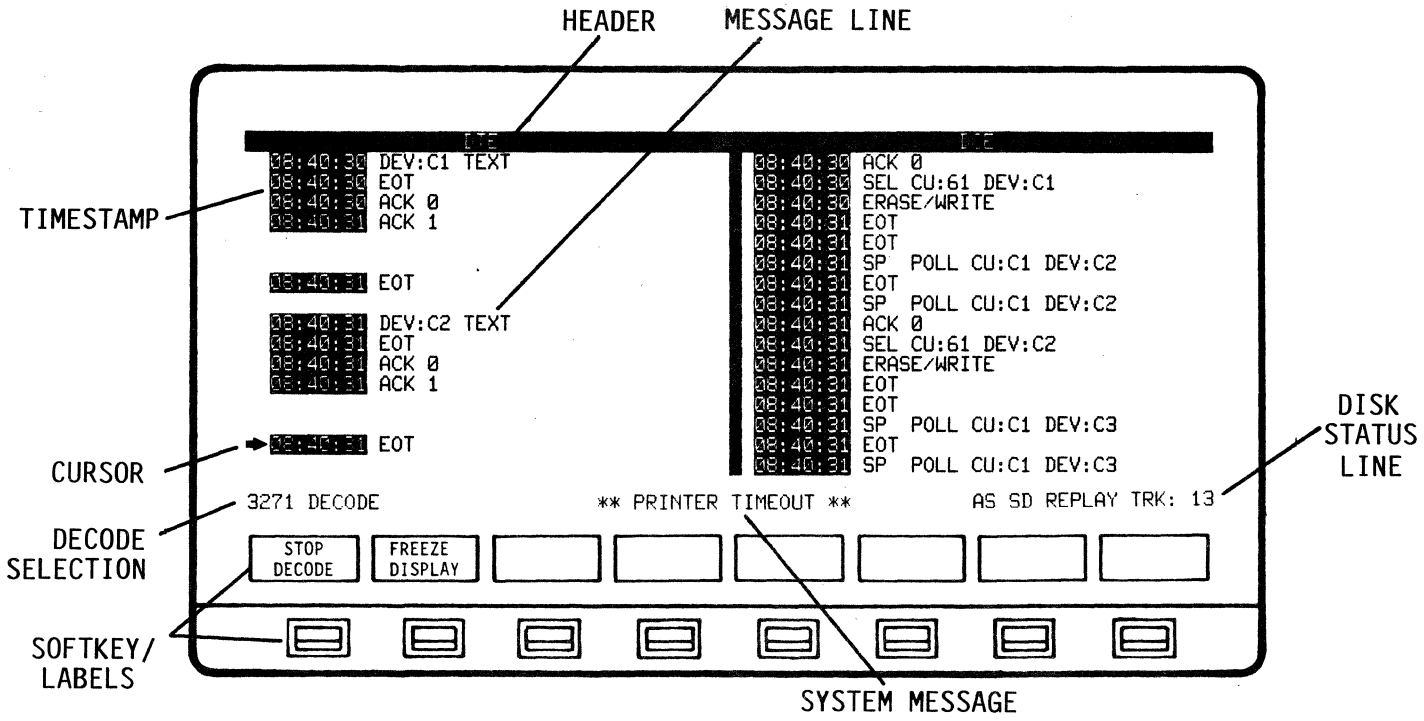
INVALID MSG TERMINATION
The message is missing the proper termination control character (ETX,ETB,ENQ,etc.)

INVALID MSG LENGTH
Message is to long.

BCC ERROR
Indicates a Block Check Character error.

3.3 3271 Decode Mode

3.3.1 3271 Decode Display and Format



TYPICAL 3271 DECODE DISPLAY

The 3271 Decode display will be a split screen format with a Terminal Control Unit(TCU) field(Left) and a Control Unit(CU) field(Right). The Send or Receive field can be positioned (Right or Left) on the display by SITE designation in System Configuration.

The headers will be displayed in reverse video in the top row of the display format.

The decoded display will consists of a Timestamp and the decoded message. The message line will include the Decoded Message or Error Message.

> Decoded Message - 28 characters maximum - messages will in no case wrap to a second line.
>
> Error Messages - (Ref 3.3.1.4) - reverse video.

Message display format; If a receive message follows a send message they will both be displayed on the same line. If a send message follows a send message, then the receive side will be spaced and the second send message will be displayed on the next line.If a receive message follows a receive message the send side will be spaced and the second receive message will be displayed on the next line.

Decode selection (3271 DECODE) and system type messages (***BUFFER LIMIT***) will be on the bottom row, above Softkey/Labels.

A system cursor character is used to indicate next line displayed.

3271 DECODE DISPLAY LEGEND

3.3.1.1 Control Characters

The Control Characters are not displayed.

The following Control Characters are used to regulate data flow on the link. The ENQ character may be prefixed with a four character addreas.

SOH	Start Of Header
STX	Start Of Text
ETX	End of Text
EOT	End of Transmission
ETB	End of Transmission Block
ITB	Intermediate Text Block
ENQ	Enquiry (Possible prefix)
NAK	Negative Acknowledgment
SYN	Synchronous Idle
DLE	Data Link Escape
ESC	Escape

3.3.1.2 Control Sequences

The Control Sequences are not displayed.

The following Control Sequences are used to regulate data flow on the link. The first character of Control Sequences must be be the DLE character, except for the TTD sequence, which begins with STX.

TTD	Temporary Text Display
WACK	Wait before Transmit
TSTX	Transparent Start of Text
TITB	Transparent Intermediate Text Block
TETX	Transparent End of Text
TETB	Transparent End of Transmission Block
TENQ	Transparent Block Abort
TSYN	Transparent Synchronous Idle
ACK0	Even Acknowledgment
ACK1	Odd Acknowledgment
RVI	Reverse Interrupt

3.3.1.3 Displayed Decoded Messages

CHARACTER DECODED FIRST	SECOND	DISPLAY	TERMINATOR	DISPLAY
ENQ		ENQ		
EOT		EOT		
NAK		NAK		
SOH		TEST REQUEST	ETX	
		TEST REQUEST	ETB	
		TEST REQUEST STATUS	ENQ	ABORT
STX		DEV:OO TEXT	OO = CU DEVICE NUMBER	
		TEXT	ETX	
			ETB	
			ENQ	ABORT
DLE	ACKO	ACK O		
DLE	ACK1	ACK 1		
DLE	WACK	WACK		
DLE	RVI	RVI		
DLE	STX	TRANSPARENT TEXT	TETX	
		TRANSPARENT TEXT	TETB	
		TRANSPARENT TEXT	TENQ	ABORT
STX	ENQ	TTD		
STX	ESC	WRITE		
		ERASE/WRITE		
		ERASE ALL UNPROTECTED		
		COPY		
		READ BUFFER		
		READ MODIFIED		
NON CONTROL CHARACTER		GEN POLL CU:OO		
		SP POLL CU:OO DEV:OO		
		SEL CU:OO DEV:OO		
		OO = CU AND/OR DEVICE NUMBER		

3.3.1.4 Error Messages

INVALID DLE SEQUENCE
Illegal character follows a DLE

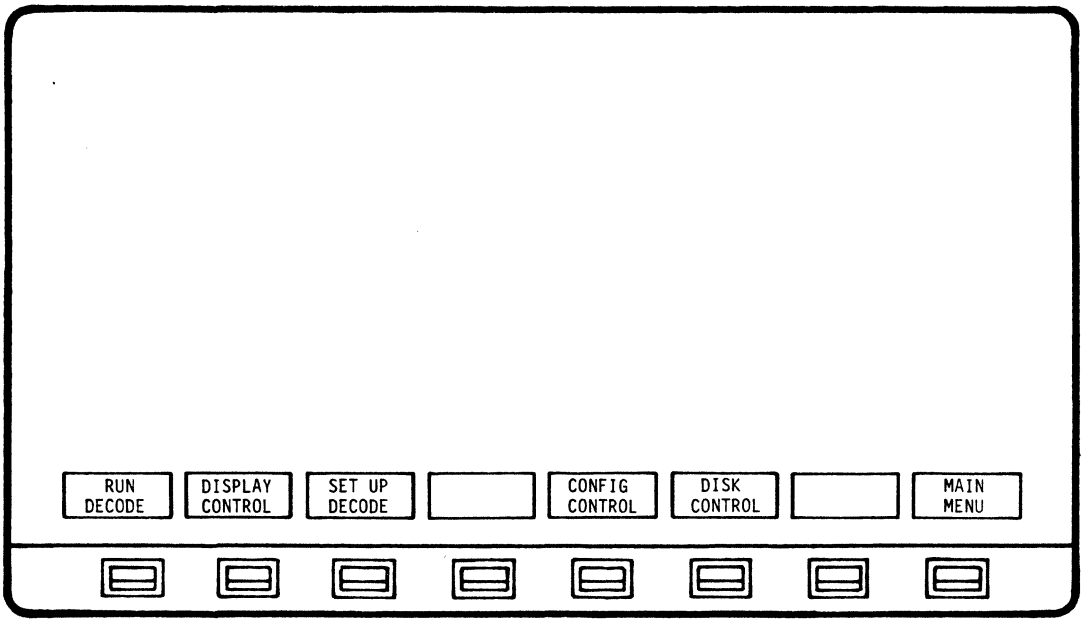
INVALID COMMAND CODE
Illegal character follows ESC in a text message.

INVALID MESSAGE
Message to long, improperly terminated, etc.

UNKNOWN MESSAGE HEADER
Illegal characters follow the SOH control character.

BCC ERROR
Indicates a Block Check Character error.

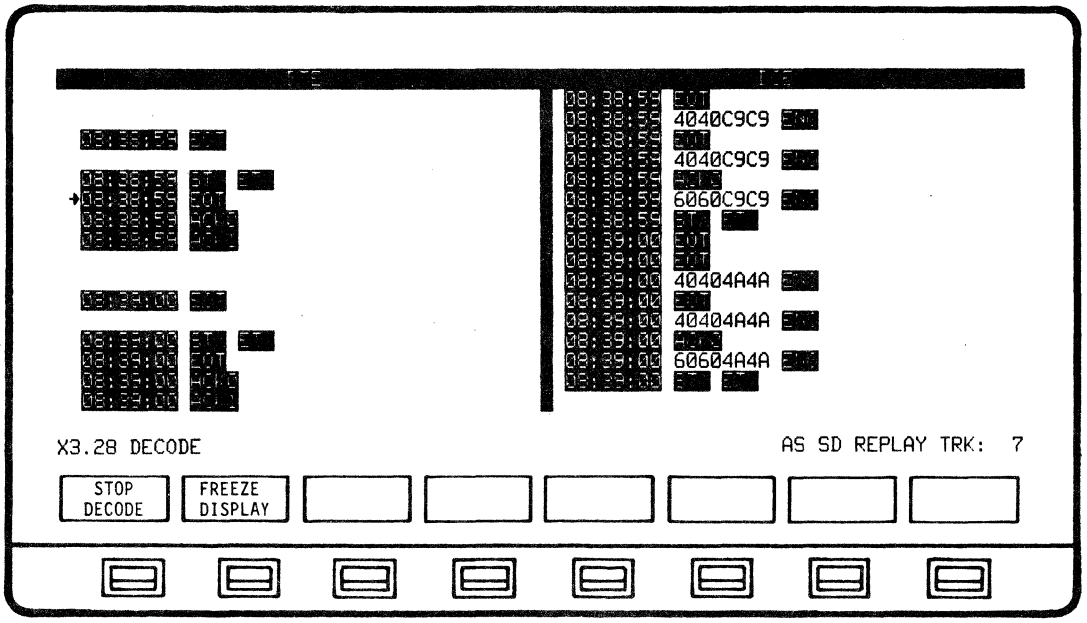
3.4 Bisync Decode Softkey/Label Display Descriptions



3.4.1 DECODE Softkey/Label Display

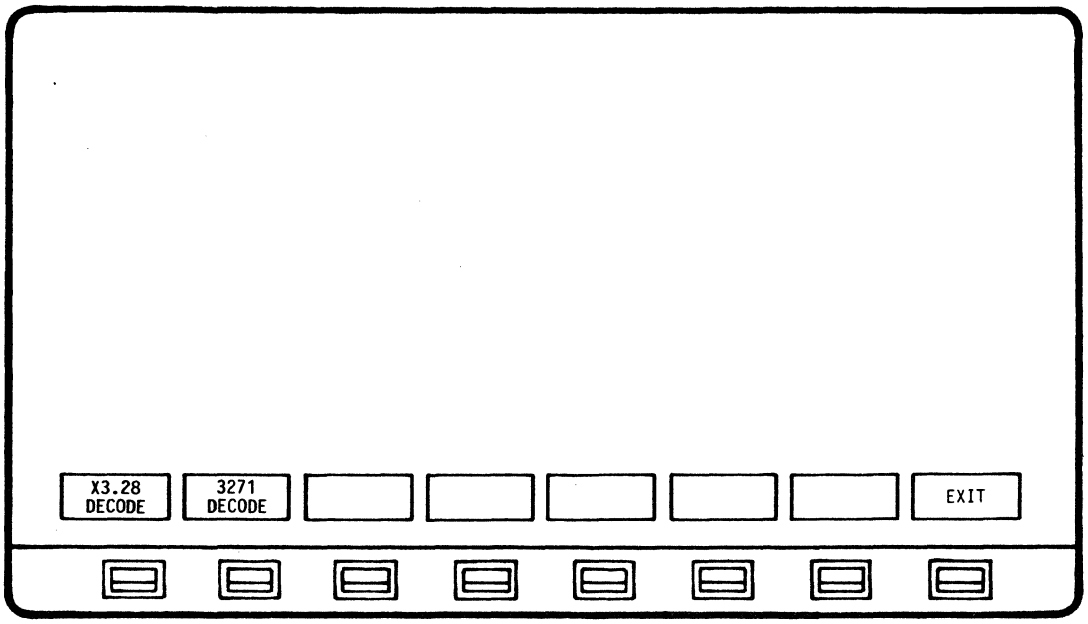
SOFTKEY/LABEL	FUNCTION
RUN DECODE	Initiates Decode process.
DISPLAY CONTROL	Sets-up softkey/label display to search and replay buffer or set-up data print-out mode. (Ref 3.4.4 - DISPLAY CONTROL)
SET UP DECODE	Sets-up softkey/label display to select Decode protocol. (X3.28 or 3271) (Ref 3.4.3 - SELECT DECODE)
	Not Used
CONFIG CONTROL	Initiates operating configuration modifications. (Ref 3.7 - Configuration Control - User Manual)
DISK CONTROL	To set-up and begin disk operating functions. (Ref 3.8 - Disk Operating System - User Manual)
	Not Used
MAIN MENU	Return to Main Menu.

3.4.2 RUN DECODE Softkey/Label Display



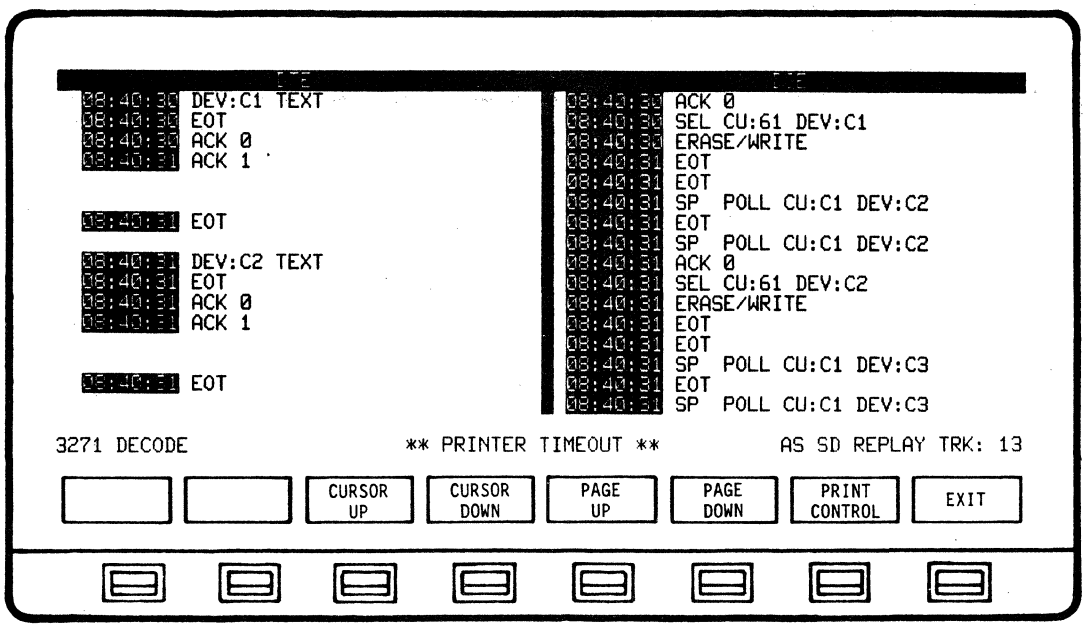
SOFTKEY/LABEL	FUNCTION
STOP DECODE	Stops Decode process. (No live data is being displayed or captured.
FREEZE DISPLAY / RESUME DISPLAY	Freezes/Resumes data displayed on screen only. All other decoding functions continue, including data capture.(Flip-flop type action)
	Not Used
	Not Used
	Not Used
	Not Used
	Not Used
	Not Used

3.4.3 SELECT DECODE Softkey/Label Display



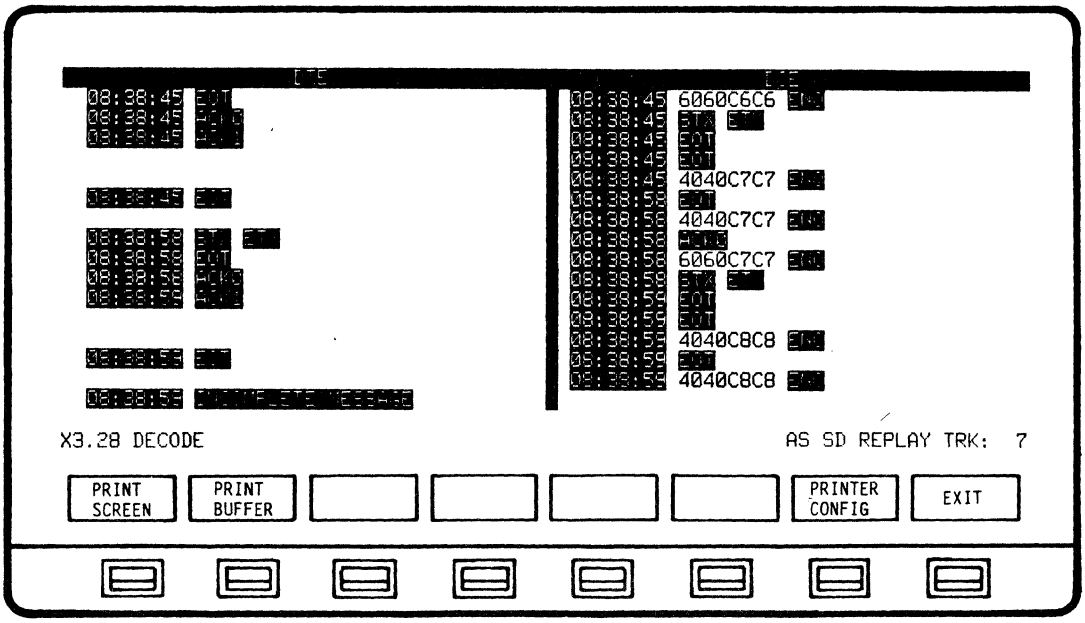
SOFTKEY/LABEL	FUNCTION
X3.28 DECODE	Selects X3.28 Decode format.
3271 DECODE	Selects 3271 Decode format.
	Not Used
	Not Used
	Not Used
	Not Used
	Not Used
EXIT	Return to previous softkey/label display. (SELECT DECODE - Ref 3.4.1)

3.4.4 DISPLAY CONTROL Softkey/Label Display



SOFTKEY/LABEL	FUNCTION
[ ]	Not Used
[ ]	Not Used
CURSOR UP	Data displayed on screen is scrolled-down one (1) line at a time, allowing previous data captured to be displayed..
CURSOR DOWN	Data displayed on screen is scrolled-up one (1) line at a time, allowing the most recent data captured to be displayed. depressing and holding the softkey down will allow continuous scrolling. Stops at ***BUFFER LIMIT***
PAGE UP	Data displayed on screen is scrolled-down one (1) page at a time, allowing previous data captured to be displayed..
PAGE DOWN	Data displayed on screen is scrolled-up one (1) page at a time, allowing the most recent data captured to be displayed. Depressing and holding the softkey down will allow continuous scrolling. Stops at ***BUFFER LIMIT***
PRINT CONTROL	Sets-up softkey/label display to select data for print-out. (Screen only or complete buffer) (Ref 3.4.5 - PRINT CONTROL)
EXIT	Return to previous softkey/label display. (DISPLAY CONTROL - Ref 3.4.1)

3.4.5 PRINT CONTROL Softkey/Label Display

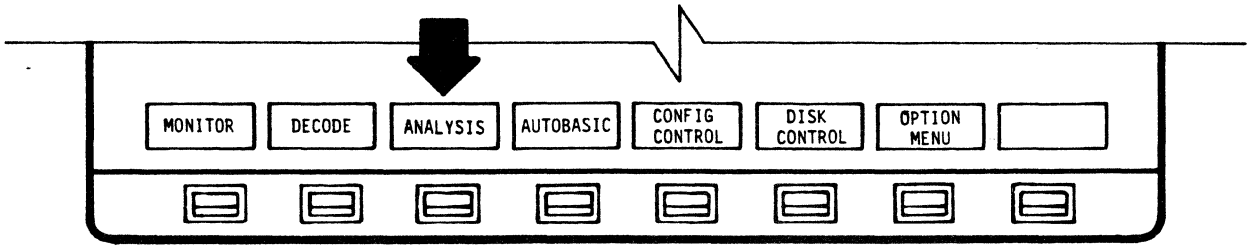


SOFTKEY/LABEL	FUNCTION
PRINT SCREEN	Initiates print-out of data displayed on screen only.
PRINT BUFFER	Initiates print-out of complete buffer.
	Not Used
	Not Used
	Not Used
	Not Used
PRINTER CONFIG	Initiates display to modify printer configuration. (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous display.

4.0 BISYNCHRONOUS PERFORMANCE ANALYSIS

4.1 General Description

The ANALYSIS mode provides the ability to compute and display the statistical performance data of a network line. Automatic error detection is provided simultaneously through the AUTO-SENTRY feature. Performance statistics and reports are displayed in clear, summarized, comparative graphic and numeric form. Line performance may be analyzed for up to 24 hours at any one time. Line performance may be analyzed from live, real-time line data, or from recorded/replayed line data. A maximum of 512 devices may be monitored [16 Control Units (CU) plus a total of 32 Devices (DEV) per CU].



MAIN MENU

Bisync Analysis is selected from the main menu. Bisync Analysis begins by searching for a general or specific poll. The system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display on initiation of RUN ANALYSIS. If a different Analysis display has been selected during a session, the screen will return to that display upon return to RUN ANALYSIS mode.

4.1.1 Analysis Displays

Available Bisync Analysis displays are:

CURRENT BISYNC LINE ANALYSIS
CURRENT BISYNC CU ACTIVITY
LINE UTILIZATION BY CU
LINE UTILIZATION BY TIME
HOST/CU TRAFFIC
LINE RESPONSE TIME SUMMARY
DEVICE RESPONSE TIME SUMMARY
DEVICE TRANSACTION SUMMARY
LINE REPORT
DEVICE ACTIVITY REPORT
UTILIZATION TREE

While in the RUN ANALYSIS mode, the displays are dynamic - they are automatically updated as data is accumulated and analyzed. While in the STOP ANALYSIS mode, the displays are static, since data is not being accumulated. Either real-time or recorded/replayed data may be used.

4.1.2 Changing Analysis Displays

The ability to change displays is available in all Bisync Analysis modes by using the CHANGE DISPLAY softkey (RUN ANALYSIS mode) and the DISPLAY CONTROL - CHANGE DISPLAY softkeys (STOP ANALYSIS mode). Depressing these sofkeys initiates a softkey display which enables the user to review any of the available report displays as desired.

4.1.3 Freeze/Resume Display

FREEZE DISPLAY is available on all Bisync analysis reports. The data on any analysis screen may be held static for close study whenever desired. To resume dynamic display of data analysis, RESUME DISPLAY is selected.

NOTE

While the display is "frozen", the analysis database contines to be updated.

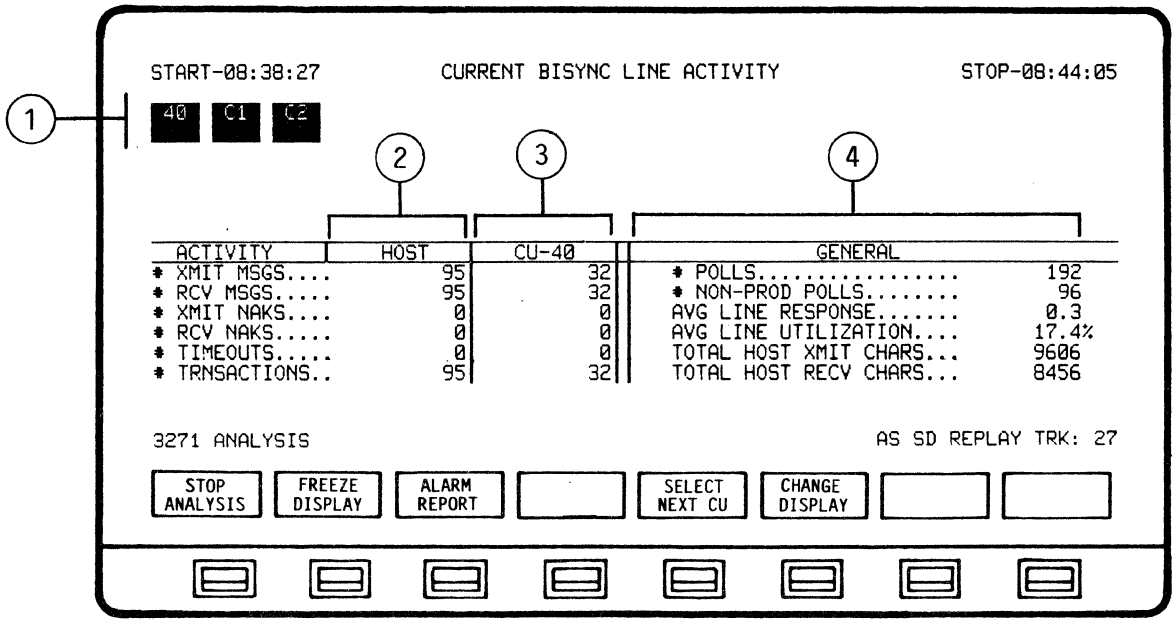
4.1.4 Display Times

START TIME, and CURRENT or STOP TIMES are indicated on all Bisync Analysis displays. Times are automatically reset when a session is started, reset, 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.
START time is always displayed. CURRENT or STOP time is displayed according to whether the session is in RUN or STOP mode (respectively). The CURRENT time displayed in the upper, right-hand corner of the screen 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.

4.1.5 Print Control (Print-out)

In STOP ANALYSIS mode, any display may be printed by depressing DISPLAY CONTROL and then PRINT CONTROL and selecting either PRINT SCREEN, PRINT THIS RPT (Print This Report) or PRINT ALL RPTS (Print All Reports).

4.2 CURRENT BISYNC LINE ACTIVITY Display and Format



The CURRENT BISYNC LINE ACTIVITY display provides the summary activity between the HOST and all of the addressed CONTROL UNITS (CU's) for analysis.

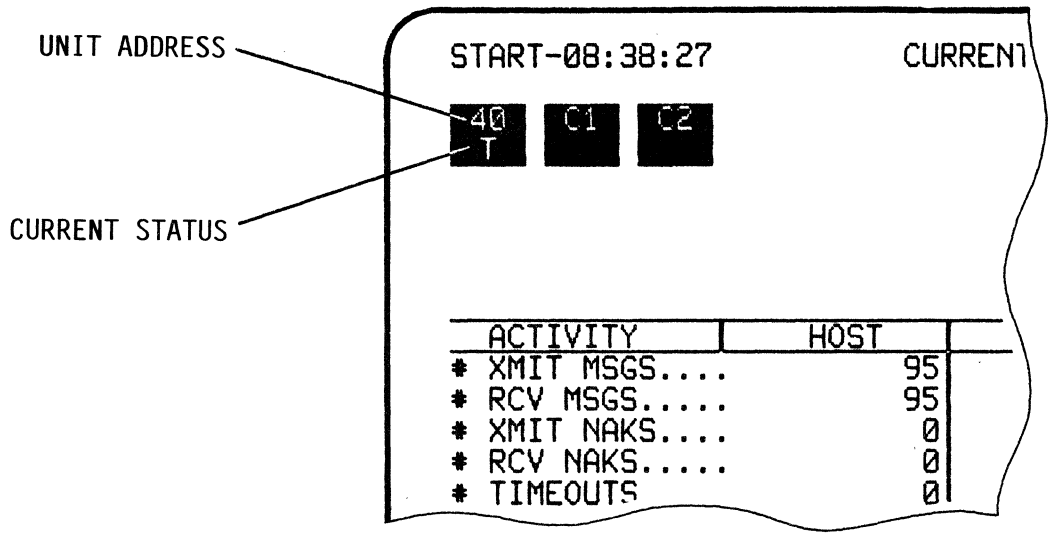
When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display. This display may also be accessed while in the RUN ANALYSIS mode of any other Bisync Analysis display by depressing CHANGE DISPLAY and selecting LINE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

Host and Control Unit activity is detected, calculated and presented in graphic and numeric form. The display is divided into four (4) areas:

1). Current Active Control Units (CU's)
2). Host Activity Analysis
3). Control Unit Activity Analysis
4). General Line Activity Analysis

Current Bisync Line Activity represents real-time or recorded/replayed data in a dynamic manner. The display is automatically updated as Control Units are detected and data analyzed.

4.2.1 Display of Current Active Control Units (CU's)



Bisync Line Activity Analysis begins when the AUTOSCOPE detects and graphically displays activity between the HOST and the first addressed CONTROL UNIT (CU).

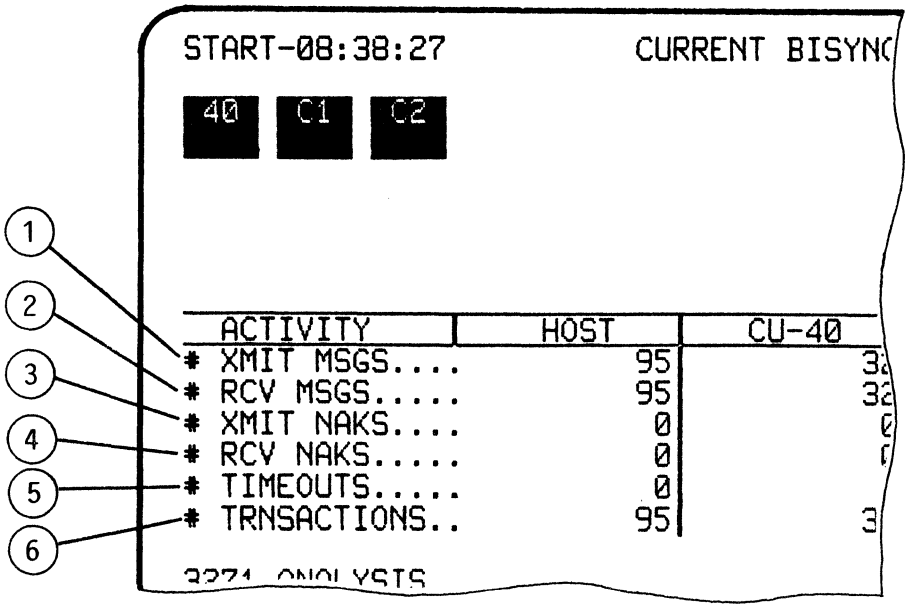
Current active Control Units (CU's) are displayed in the upper area of the display as they are detected. When the active CU is detected, it appears as a high-intensity block (highlighted reverse-video). Each block will contain the Control Unit address and current status.

Possible CU Status Codes are:

A	Alarm detected by AUTO-SENTRY.
T	CU active in a TRANSMIT state.
R	CU active in a RECEIVE state.
(Status Area Blank)	CU not currently active.

As additional Control Units (CU's) are detected, they will be displayed from left to right in one row of up to a total of sixteen (16). Previously detected CU's that have currently become inactive will appear as low-intensity blocks.

4.2.2 Display of Host Activity Analysis



Accumulated statistics for the Host Line Activity are displayed in the lower, left-hand area of the display.

The following activities are displayed:

ITEM	DISPLAY	DESCRIPTION
(1)	# XMIT MSGS	Number of messages transmitted by Host. Messages are defined as STX or SOH through ETX.
(2)	# RCV MSGS	Number of messages received by Host. Messages are defined as STX or SOH through ETX.
(3)	# XMIT NAKS	Number of Negative Acknowledgements transmitted by Host.
(4)	# RCV NAKS	Number of Negative Acknowledgements received by Host.
(5)	# TIMEOUTS	Number of Timeouts received by Host. Timeouts = Failure of a CU to respond to a Host data transmission.
(6)	TRANSACTIONS	A transaction is defined as the completion of the full cycle of communication initiated by a CU Device Text Message (inquiry) and completed by the CU acknowledgement of the Host text message (response) to the same CU/Device. (STX to ACK of ETX)

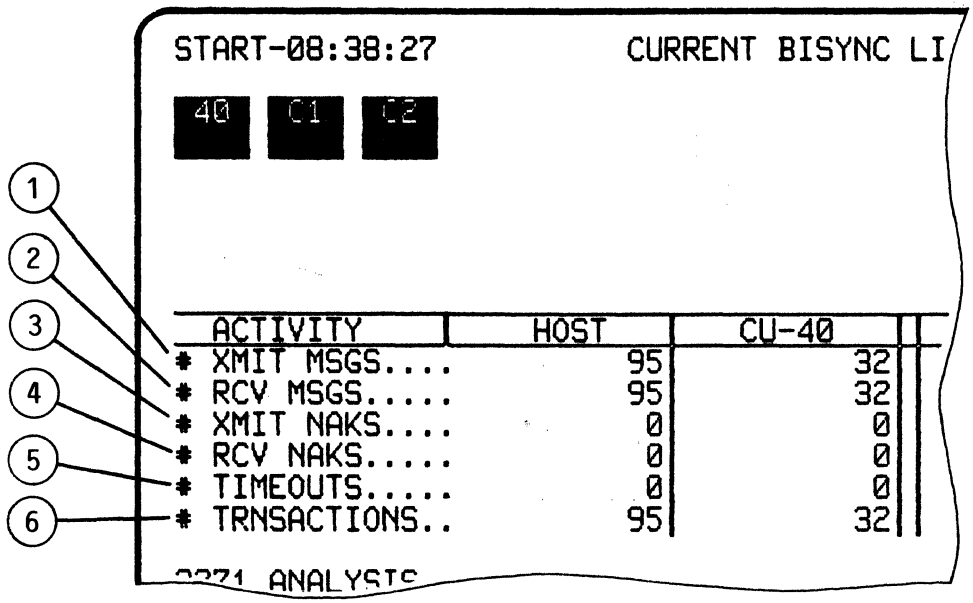
NOTE

RESPONSE TIME = Sum of the Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time.

Mean Poll Time is 1/2 the time between 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 key) and the restoration of the user's ability to operate a Device (keyboard freed up by Host).

4.2.3 Display of Control Unit (CU) Activity Analysis



Accumulated summary statistics for a Control Unit (UC) are displayed to the right of the HOST Activity Analysis section of the display. As the first Control Unit is detected the address number will be displayed at the top of the column and the statistics will be shown in the column.

Depressing the SELECT CU softkey will display the summary activity of additional Control Units as they are detected.

The following activities are displayed:

ITEM	DISPLAY	DESCRIPTION
(1)	# XMIT MSGS	Number of messages transmitted by individual CU. Messages are defined as STX or SOH through ETX.
(2)	# RCV MSGS	Number of messages received by individual CU. Messages are defined as STX or SOH through ETX.
(3)	# XMIT NAKS	Number of Negative Acknowledgements transmitted by individual CU.
(4)	# RCV NAKS	Number of Negative Acknowledgements received by individual CU.

(5)	# TIMEOUTS	Number of Timeouts caused by individual CU. Timeouts = Failure of a device to respond to a Host data transmission.
(6)	TRANSACTIONS	A transaction is defined as the completion of the full cycle of communication initiated by a CU device text message (inquiry) and completed by the CU acknowledgement of the Host text message (response) to the same CU /device. (STX to ACK of ETX)

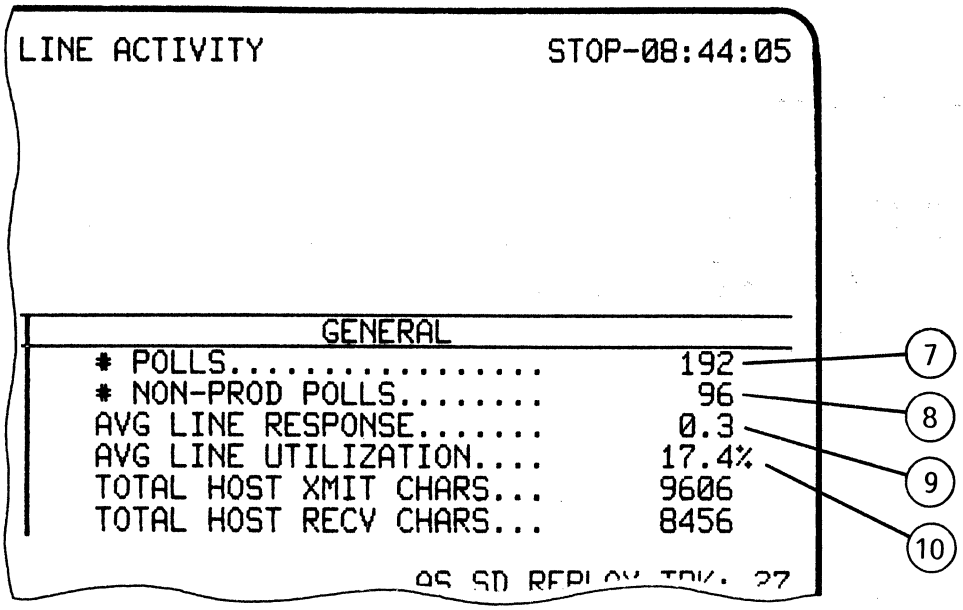
NOTE

RESPONSE TIME = Sum of the Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time.

Mean Poll Time is 1/2 the time between 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 key) and the restoration of the user's ability to operate a Device (keyboard freed up by Host).

4.2.4 Display of General Line Activity Analysis

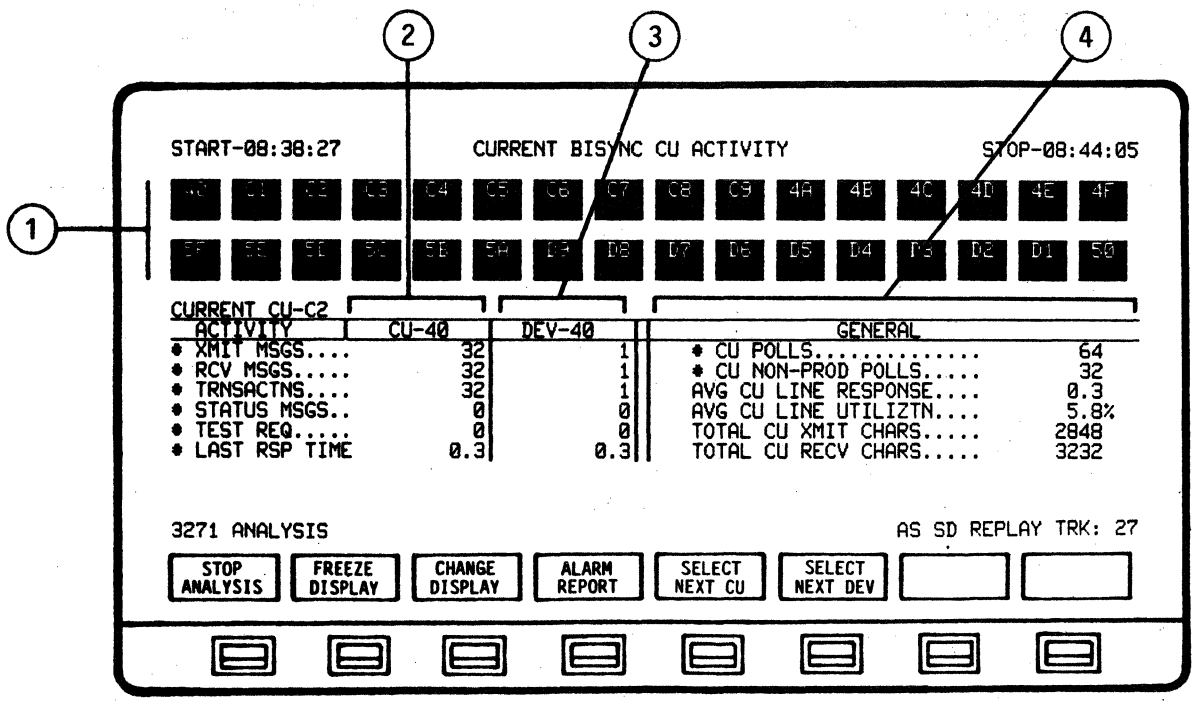


General Line Activity provides general statistics for the entire Analysis session. These statistics are based on both Host and all Control Unit activity. The GENERAL activity is displayed on the right side of the display.

The following activities are displayed:

(7)	# POLLS	Number of all polls (General or Specific) transmitted by the Host over the entire line and to all CU's. General polls may be to any device on a CU. Specific polls are to specific devices on a CU. # polls includes non-productive polls.
(8)	# NON-PROD POLLS	Number of non-productive polls transmitted by the Host over the entire line and to all CU's . A non-productive poll is defined as any poll (General or Specific) responded to with an EOT (no traffic to send).
(9)	AVG LINE RESPONSE	Average of all response times over the entire line, including all CU's.
(10)	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. Transmitted characters include all productive and non-productive characters.

4.3 CURRENT BISYNC CU ACTIVITY Display and Format



The CURRENT BISYNC CU ACTIVITY display provides summary activity of the Control Units (CU's) and their specific devices for analysis.

NOTE

When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display.

The CURRENT BISYNC CU ACTIVITY display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing SET UP ANALYSIS - CHANGE DISPLAY and selecting CU ACTIVITY. This display may also be accessed while in the RUN ANALYSIS mode by depressing CHANGE DISPLAY and selecting CU ACTIVITY.

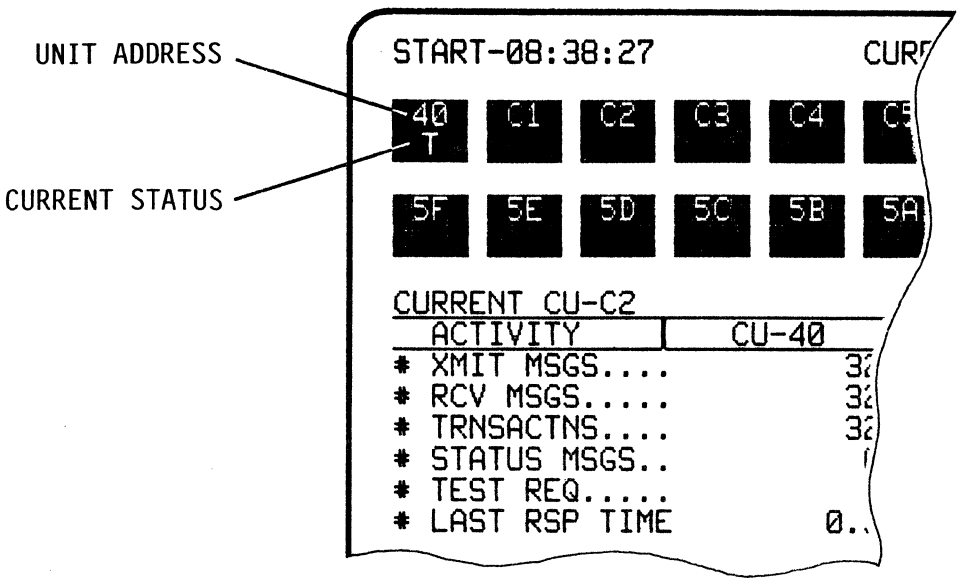
Control Unit and Device activity is detected, calculated and presented in graphic and numeric form. The display is divided into four (4) areas:

1). Current Active Control Unit and Devices
2). Current Control Uunit Activity Analysis
3). Device Activity Analysis
4). General Control Unit Activity Analysis

The Control Unit displayed is the same as the current Control Unit under observation in the CURRENT BISYNC LINE ACTIVITY display.

The CURRENT BISYNC CU ACTIVITY represents real-time or recorded /replayed data in a dynamic manner - the display is automatically updated as Control Units are detected and data analyzed.

4.3.1 Display of Current Active Control Units (CU's) and Devices



Bisync CU Activity Analysis begins when the AUTOSCOPE detects and graphically displays activity of the first detected Control Unit and its Devices.

Current active Devices are displayed in the upper area of the display as they are detected. When the active Device is detected, it appears as a high-intensity block (highlighted reverse-video). Each block will contain the Device address and current status.

Possible Device Status Codes are:

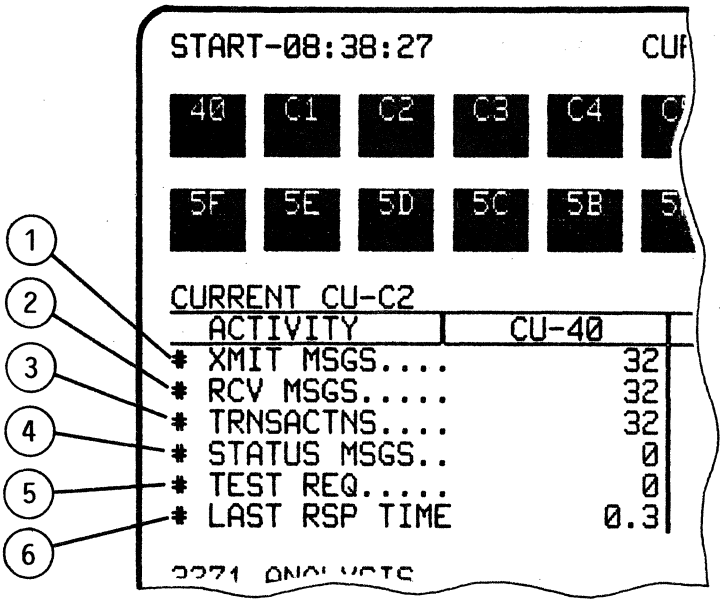
A	Alarm detected by AUTO-SENTRY.
T	Device active in a TRANSMIT state.
R	Device active in a RECEIVE state.
(Status Area Blank)	Device not currently active.

As additional Devices are detected, they will be displayed from left to right in two rows of sixteen (16) for a total of thirty two (32). Previously detected Devices that have currently become inactive will appear as low-intensity blocks.

The number of the current Control Unit being analyzed appears in the left, center area of the display.

The SELECT NEXT CU softkey selects the next Control Unit detected and display its detected Devices for analysis.

4.3.2 Display of Current Control Unit (CU) Activity Analysis



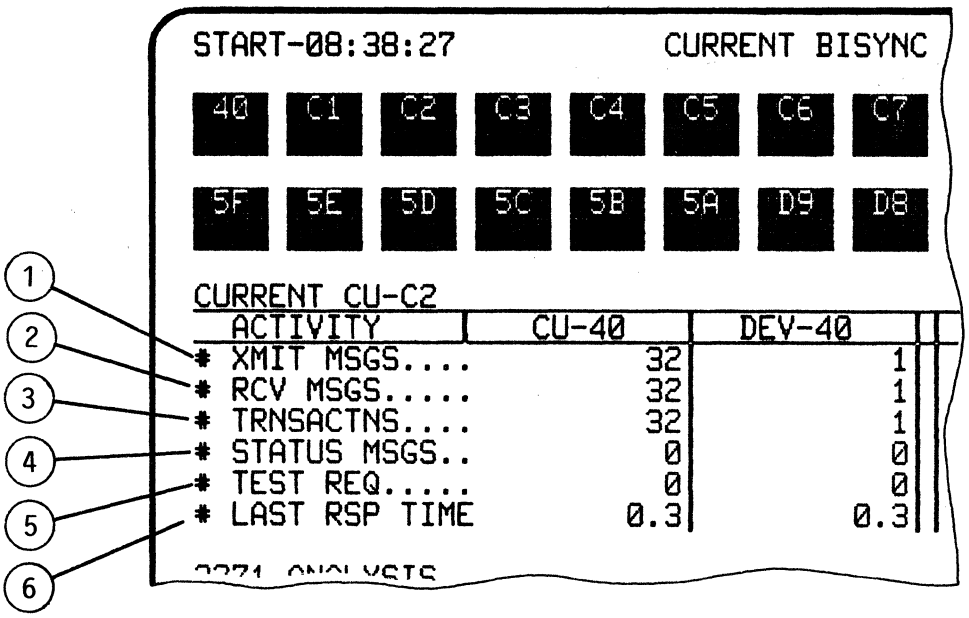
The summary activity of the selected Control Unit is displayed in the lower, left-hand area of the display.

The following activities are displayed:

ITEM	DISPLAY	DESCRIPTION
(1)	# XMIT MSGS	Number of messages transmitted by Host/CU. Messages are defined as STX or SOH through ETX.
(2)	# RCV MSGS	Number of messages received by Host/CU. Messages are defined as STX or SOH through ETX.
(3)	# TRNSACTNS	Number of transactions completed by CU/Device. A transaction is defined as the completion of the full cycle of communication initiated by a CU Device Text Message (inquiry) and completed by the CU acknowledgement of the Host text message (response) to the same CU/Device. (STX to ACK of ETX)
(4)	# STATUS MSGS	Number of status messages transmitted by CU/Device. Status messages are defined as SOH through ETX.
(5)	# TEST REQ	Number of test requests transmitted by CU/Device. Test requests are defined as SOH through ETX.

(6)	LAST RSP TIME	RESPONSE TIME = Sum of the Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time. Mean Poll Time is 1/2 the time between 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).

4.3.3 Display of Device Activity Analysis



Accumulated summary statistics for a Device are displayed to the right of the CU Activity Analysis section of the display. As the first Device is detected the address number will be displayed at the top of the column and the statistics will be shown in the column.

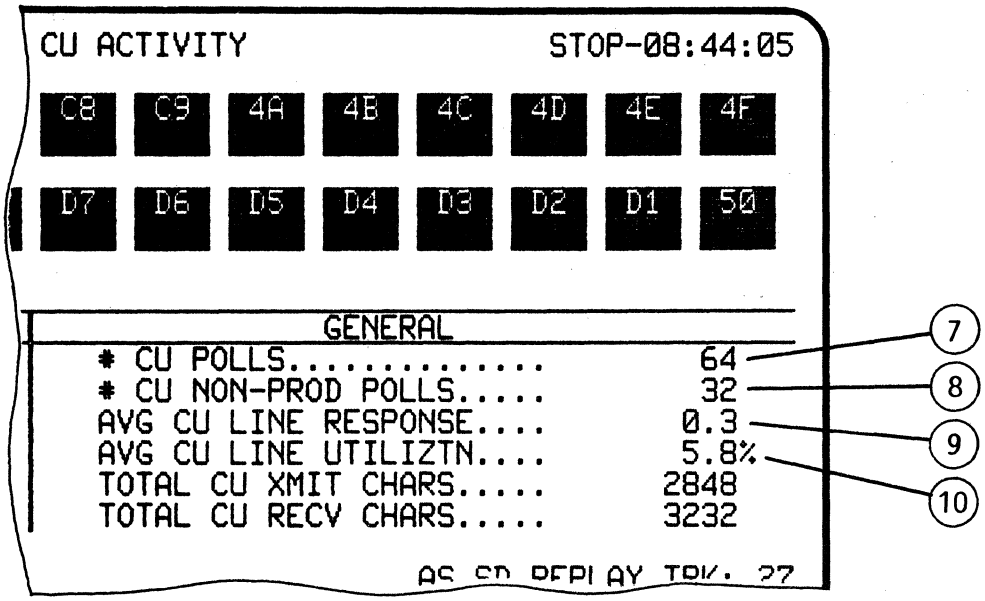
Depressing the SELECT NEXT DEVICE softkey will display the summary activity of additional Devices as they are detected.

The following activities are displayed:

ITEM	DISPLAY	DESCRIPTION
(1)	# XMIT MSGS	Number of messages transmitted by Host/CU. Messages are defined as STX or SOH through ETX.
(2)	# RCV MSGS	Number of messages received by Host/CU. Messages are defined as STX or SOH through ETX.
(3)	# TRNSACTNS	Number of transactions completed by CU/Device. A transaction is defined as the completion of the full cycle of communication initiated by a CU Device Text Message (inquiry) and completed by the CU acknowledgement of the Host text message (response) to the same CU/Device. (STX to ACK of ETX)

(4)	# STATUS MSGS	Number of status messages transmitted by CU/Device. Status messages are defined as SOH through ETX.
(5)	# TEST REQ	Number of test requests transmitted by CU/Device. Test requests are defined as SOH through ETX.
(6)	LAST RSP TIME	RESPONSE TIME = Sum of the Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time. Mean Poll Time is 1/2 the time between 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).

4.3.4 Display of General Control Unit Activity Analysis



General CU Activity provides general statistics for the entire Analysis session. The GENERAL activity is displayed on the right side of the display.

The following activities are displayed:

(7)	# CU POLLS	Number of all polls (General or Specific) transmitted by the CU.
(8)	# CU NON-PROD POLLS	Number of non-productive polls transmitted by the CU. A non-productive poll is defined as any poll (General or Specific) to which an EOT (no traffic to send) is responded.
(9)	AVG CU LINE RESPONSE	Average of reponse times for CU's.
(10)	AVG CU LINE UTILIZIN	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. Transmitted characters include all productive and non-productive characters.

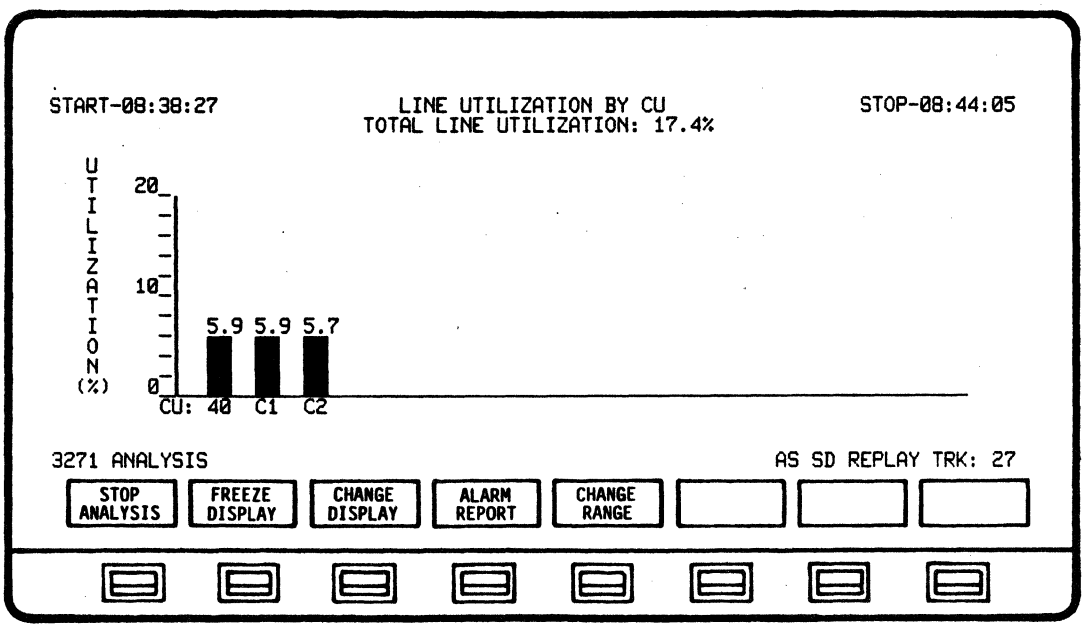
NOTE

RESPONSE TIME = Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time.

Mean Poll Time is 1/2 the poll-to-poll time. Poll-to-Data time is the time from Poll to STX for previous to current poll (will vary according to Device). Transaction Time is from Device STX to the Device ACK of Host ETX.

This definition of Response Time includes the recognition of the end of a transaction by the individual Device. Response Time may be visualized as the time elapsing between the action of a user entering data on a Device (depressing the Return key) and the restoration of the user's ability to operate a Device (keyboard freed up by Host).

4.4 LINE UTILIZATION BY CU (Control Unit)



The LINE UTILIZATION BY CU display provides analysis of the line utilization according to individual Control Units. The percentage of line utilization per Control Unit 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 Control Units may be analyzed.

NOTE

When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display.

The LINE UTILIZATION BY CU display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing SET UP ANALYSIS - CHANGE DISPLAY and selecting CU LINE UTLZATION. This display may also be accessed while in the RUN ANALYSIS mode by depressing CHANGE DISPLAY and selecting CU LINE UTLZATION.

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

The CHANGE RANGE softkey initiates a softkey/label display to change the percentage scale on the bar graph if desired for viewing. Exit from the display or initiation of STOP ANALYSIS will default the range back to 20%.

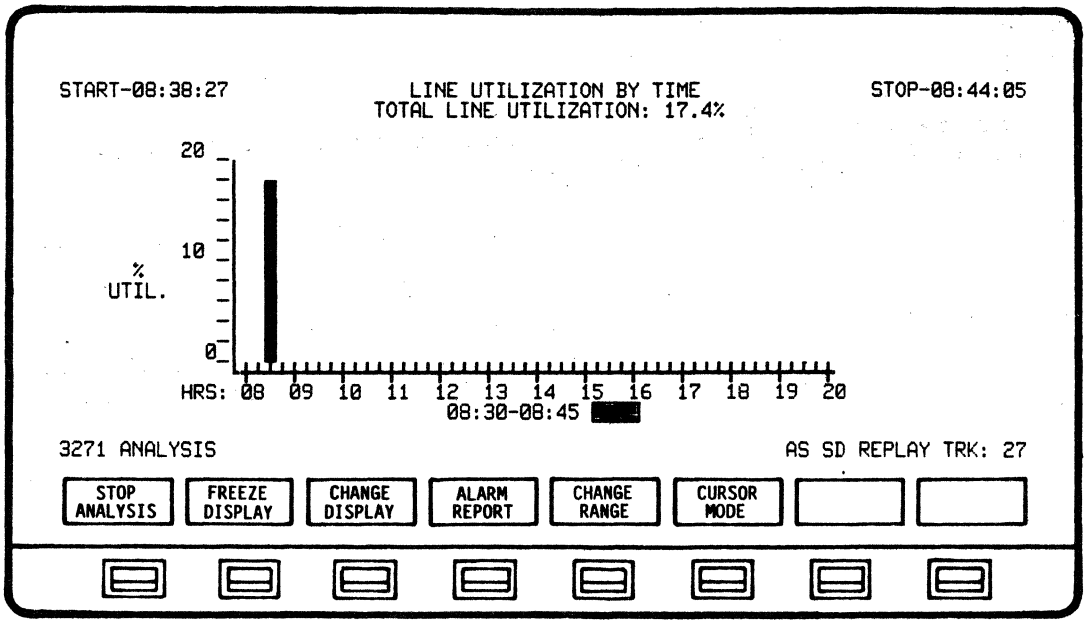
NOTE

The system automatically defaults to the 20% range when the display is entered.

CHANGE RANGE is available in both RUN ANALYSIS and STOP ANALYSIS modes.

To print-out a display with a desired percentage range other than 20% the system must be in the STOP ANALYSIS mode. Select DISPLAY CONTROL - CHANGE RANGE (Select desired range) - EXIT - PRINT CONTROL - PRINT SCREEN.

4.5 LINE UTILIZATION BY TIME



The LINE UTILIZATION BY TIME display provides analysis of total line utilization for Host, Control Units (CU's), and all Devices.

NOTE

When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display.

The LINE UTILIZATION BY TIME display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing SET UP ANALYSIS - CHANGE DISPLAY and selecting UTLZATION BY TIME. This display may also be accessed while in the RUN ANALYSIS mode by depressing CHANGE DISPLAY and selecting UTLZATION BY TIME.

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 fifteen (15) minute interval currently being analyzed. The Time Interval field in the lower area of the display indicates the beginning and end of the fifteen (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 fifteen (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.

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

The CHANGE RANGE softkey initiates a softkey/label display to change the scale on the bar graph if desired for viewing. Exit from the display or initiation of STOP ANALYSIS will default the range back to 30%.

NOTE

The system automatically defaults to the 30% range when the display is entered.

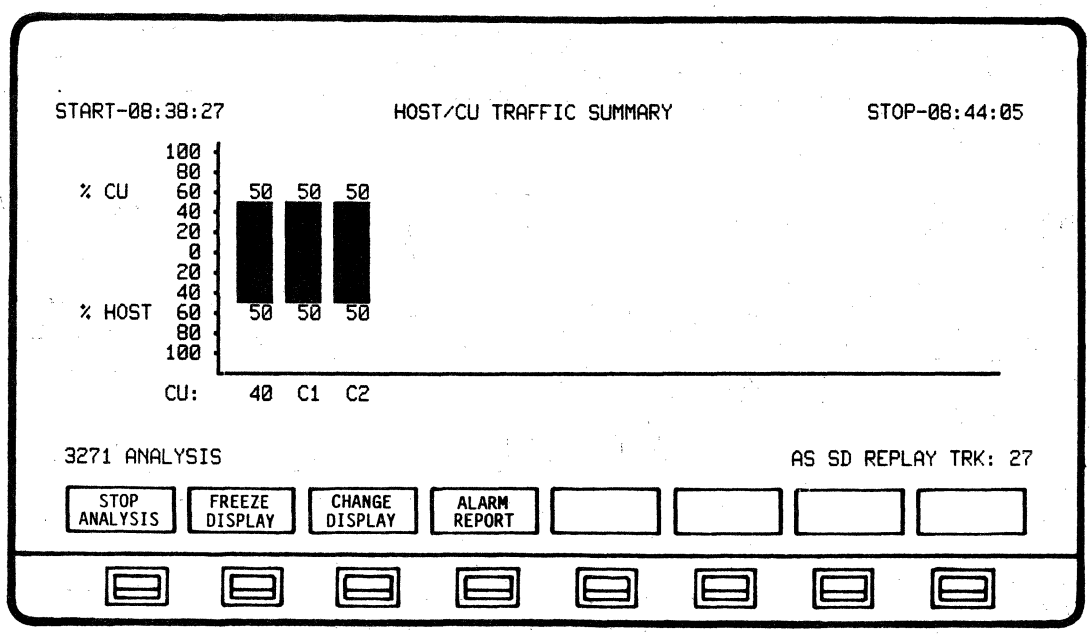
To print-out a display with a desired percentage range other than 30% the system must be in the STOP ANALYSIS mode. Select DISPLAY CONTROL - CHANGE RANGE (Select desired range) - EXIT - PRINT CONTROL - PRINT SCREEN.

The CURSOR MODE softkey initiates a softkey/label display to scroll the cursor left or right and display the exact utilization percentage for any fifteen (15) minute interval of analysis. When the CURSOR MODE softkey is depressed, a cursor appears under the bar representing the current time interval (In RUN ANALYSIS mode, the cursor automatically defaults to the bar representing the most recent time interval. In STOP ANALYSIS mode, the cursor will remain where last positioned).

The CURSOR RIGHT and CURSOR LEFT softkeys may be held down to allow continuous scrolling in either direction. Upon exiting CURSOR MODE, the cursor will disappear and the fifteen (15) minute time interval currently being analyzed will be indicated in the Time Interval and Percent Utilization fields of the display.

CHANGE RANGE and CURSOR MODE are available in both RUN ANALYSIS and STOP ANALYSIS modes.

4.6 HOST/CU TRAFFIC SUMMARY



The HOST/CU TRAFFIC SUMMARY display provides analysis of Control Unit (CU) messages in relation to Host messages.

NOTE

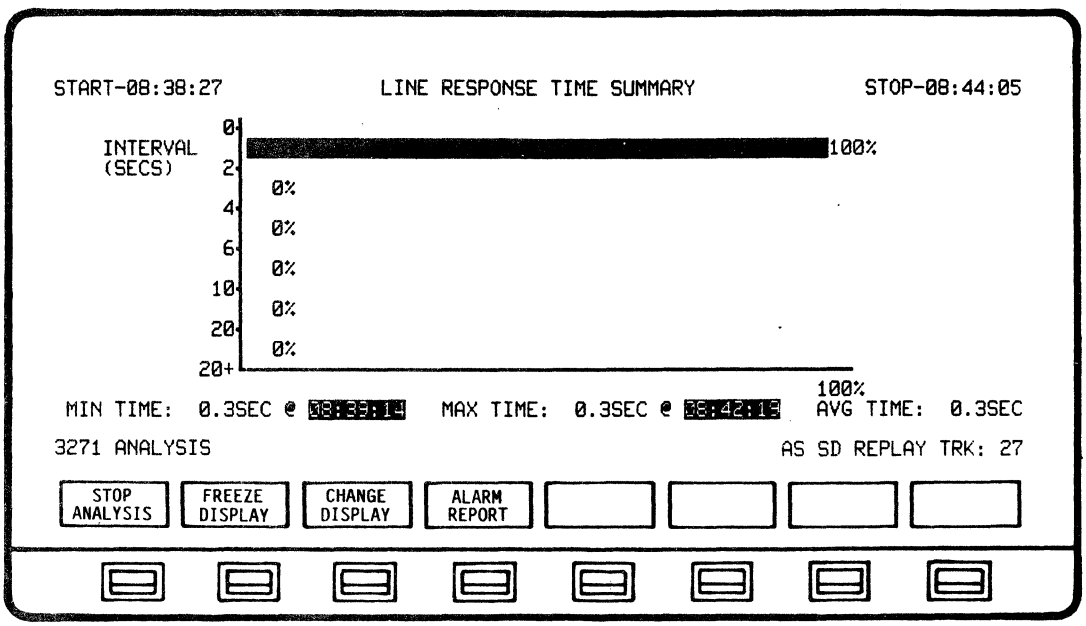
When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display.

The HOST/CU TRAFFIC SUMMARY display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing SET UP ANALYSIS - SELECT DISPLAY and selecting HOST/CU TRAFFIC. This display may also be accessed while in the RUN ANALYSIS mode by depressing CHANGE DISPLAY and selecting HOST/CU TRAFFIC.

The percentages of message traffic per individual Control Unit (CU) is represented by a vertical bar on the graph. The CU 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/CU Traffic percentage is represented by the vertical line on the left of the display. A total of sixteen (16) Control Units may be analyzed. Messages are defined as STX or SOH through ETX.

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

4.7 LINE RESPONSE TIME SUMMARY



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

NOTE

When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display.

The LINE RESPONSE TIME SUMMARY display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing SET UP ANALYSIS - SELECT DISPLAY and selecting LINE RESPONSE. This display may also be accessed while in the RUN ANALYSIS mode by depressing CHANGE DISPLAY and selecting LINE RESPONSE.

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 Minimum, Maximum, and Average times at the bottom of this display.

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

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

AVG TIME = The average response time for entire line and all Control Units.

LINE RESPONSE TIME SUMMARY represents real-time or recorded/replayed data in a dynamic manner - the display is automatically updated as Control Units are detected and data analyzed. Data will continue to be calculated and displayed until the end of session.

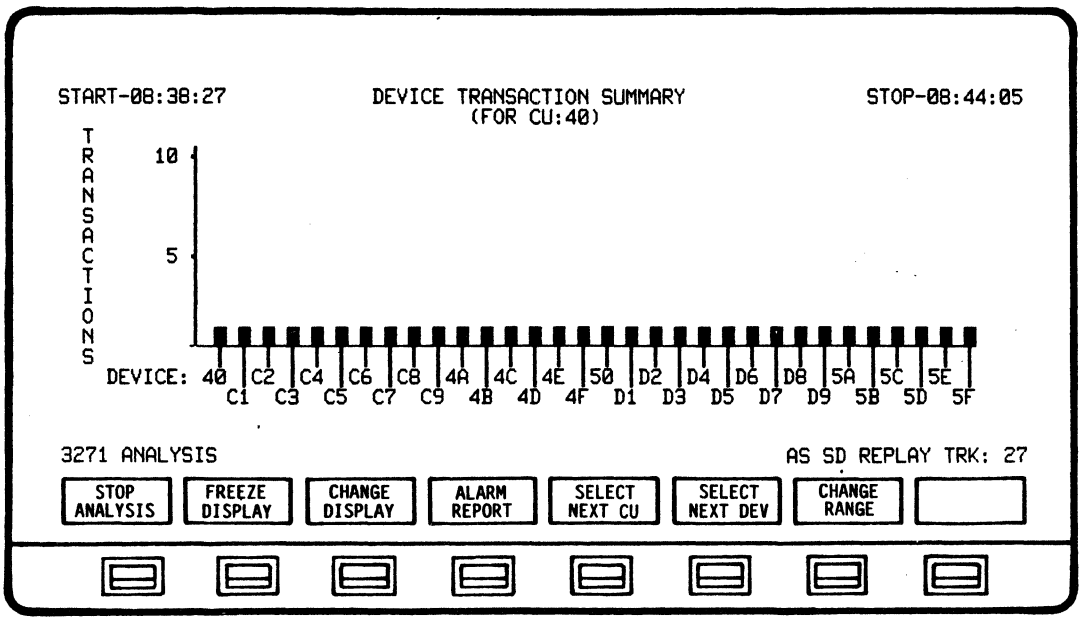
NOTE

RESPONSE TIME = Sum of the Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time.

Mean Poll Time is 1/2 the time between 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 key) and the restoration of the user's ability to operate a Device (keyboard freed up by Host).

4.8 DEVICE TRANSACTION SUMMARY



The DEVICE TRANSACTION SUMMARY represents real-time or recorded/replayed data in a dynamic manner - the display is automatically updated as Devices of a selected Control Unit are detected and analyzed. Data will continue to be calculated and displayed until the end of session.

NOTE

When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display.

The DEVICE TRANSACTION SUMMARY display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing SET UP ANALYSIS - CHANGE DISPLAY - NEXT LIST and selecting DEVICE TRANSACTN. This display may also be accessed while in the RUN ANALYSIS mode by depressing CHANGE DISPLAY - NEXT LIST and selecting DEVICE TRANSACTN.

TRANSACTIONS - Number of transactions completed by Control Unit/Device. A transaction is defined as the completion of the full cycle of communication initiated by a Control Unit Device text message (Inquiry) and completed by the Control Unit acknowledgement of the Host text message (Response) to the same Control Unit/Device. (STX to ACK of ETX)

The CHANGE RANGE softkey initiates a softkey/label display to change the scale on the bar graph if desired for viewing. Exit from the display or initiation of STOP ANALYSIS will default the range back to 10.

NOTE

The system automatically defaults to the 10 range when the display is entered.

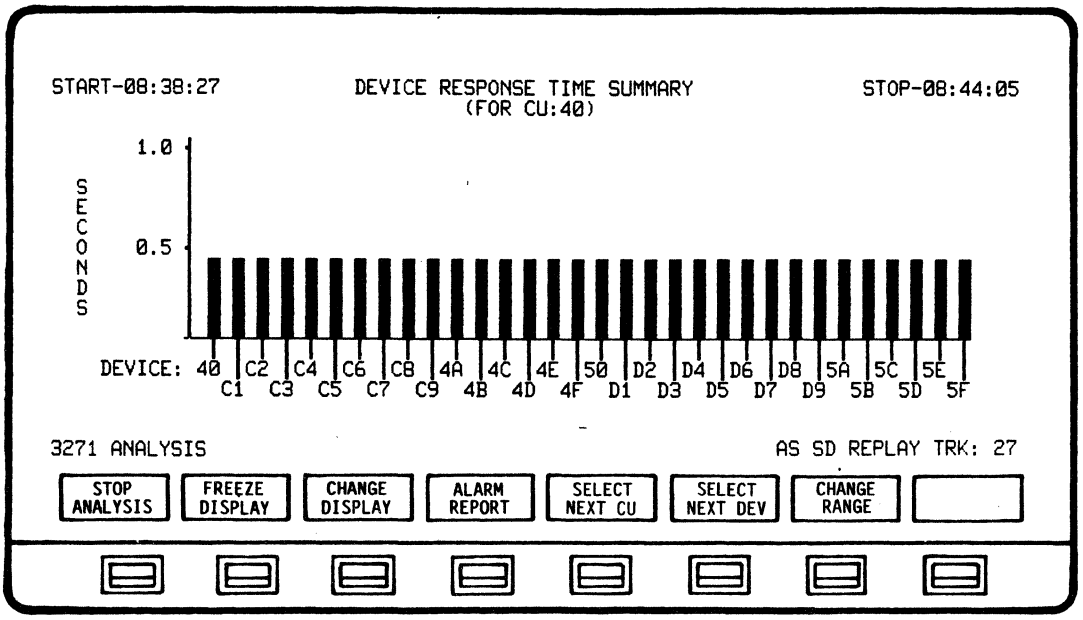
To print-out a display with a desired percentage range other than 10 the system must be in the STOP ANALYSIS mode. Select DISPLAY CONTROL - CHANGE RANGE (Select desired range) - EXIT - PRINT CONTROL - PRINT SCREEN.

The CURSOR MODE softkey initiates a softkey/label display to scroll the cursor left or right and display the exact transaction count for the designated Device. When the CURSOR MODE softkey is depressed, a cursor appears under the bar representing the current transactions (In RUN ANALYSIS mode, the cursor automatically defaults to the bar representing the most recent transaction. In STOP ANALYSIS mode, the cursor will remain where last positioned).

The CURSOR RIGHT and CURSOR LEFT softkeys may be held down to allow continuous scrolling in either direction. Upon exiting CURSOR MODE, the cursor will disappear and the Device address and transaction count.

CHANGE RANGE and CURSOR MODE are available in both RUN ANALYSIS and STOP ANALYSIS modes.

4.9 DEVICE RESPONSE TIME SUMMARY



The DEVICE RESPONSE TIME SUMMARY representes real-time or recorded/replayed data in a dynamic manner - the display is automatically updated as Devices of a selected Control Unit are detected and analyzed. Data will continue to be calculated and displayed until the end of session.

NOTE

When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display.

The DEVICE RESPONSE TIME SUMMARY display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing SET UP ANALYSIS - CHANGE DISPLAY - NEXT LIST and selecting DEVICE RESPONSE. This display may also be accessed while in the RUN ANALYSIS mode by depressing CHANGE DISPLAY - NEXT LIST and selecting DEVICE RESPONSE.

NOTE

RESPONSE TIME = Mean Poll Time plus the Poll-to-Data Time plus the Transaction Time.

Mean Poll Time is 1/2 the Poll-to-Poll Time.Poll-to-Data Time is the time from Poll to STX for previous to current Poll (will vary according to Device). Transaction Time is from Device STX to the Device ACK of Host ETX.

This definition of Response Time includes the recognition of the end of a transaction by the individual Device. Response Time may be visualized as the time elasping between the action of a user entering data on a Device (depressing the Return key) and the restoration of the user's ability to operate a Device (keyboard freed up by Host).

The CHANGE RANGE softkey initiates a softkey/label display to change the time scale on the bar graph if desired for viewing. Exit from the display or initiation of STOP ANALYSIS will default the range back to 1.0 second.

NOTE

The system automatically defaults to the 1.0 second range when the display is entered.

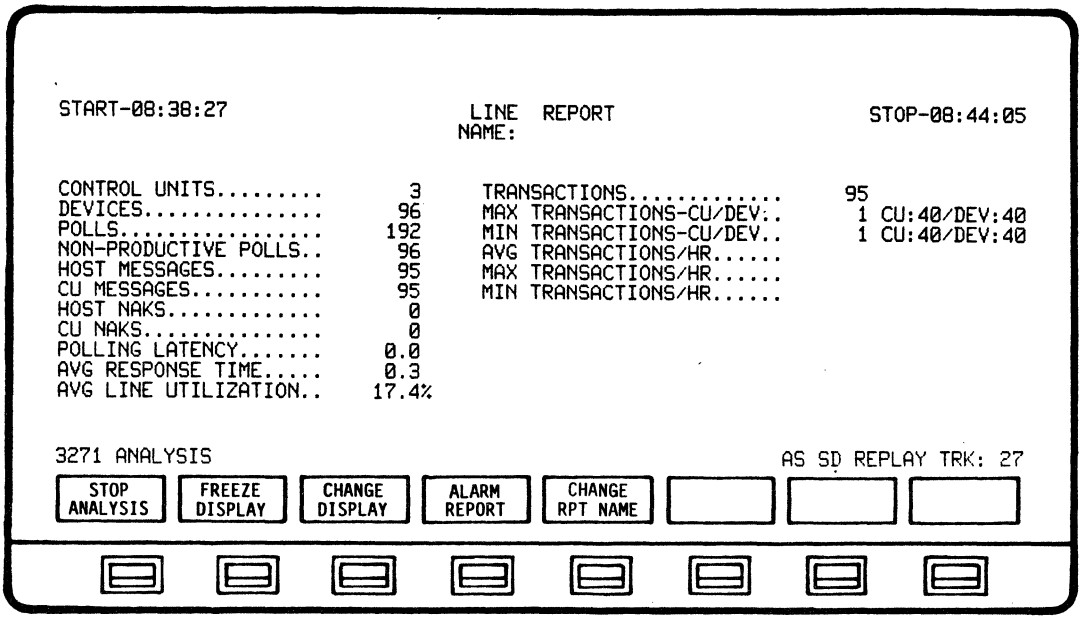
To print-out a display with a desired time range other than 1.0 second the system must be in the STOP ANALYSIS mode. Select DISPLAY CONTROL - CHANGE RANGE (Select desired range) - EXIT - PRINT CONTROL - PRINT SCREEN.

The CURSOR MODE softkey initiates a softkey/label display to scroll the cursor left or right and display the exact response time for the designated Device. When the CURSOR MODE softkey is depressed, a cursor appears under the bar representing the current response time. In RUN ANALYSIS mode, the cursor automatically defaults to the bar representing the most recent response. In STOP ANALYSIS mode, the cursor will remain where last positioned).

The CURSOR RIGHT and CURSOR LEFT softkeys may be held down to allow continuous scrolling in either direction. Upon exiting CURSOR MODE, the cursor will disappear and the Device address and response time.

CHANGE RANGE and CURSOR MODE are available in both RUN ANALYSIS and STOP ANALYSIS modes.

4.10 LINE REPORT



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

The LINE REPORT represents real-time or recorded/replayed data in a dynamic manner - the display is automatically updated as Data is detected and analyzed. Data will continue to be calculated and displayed until the end of session.

NOTE

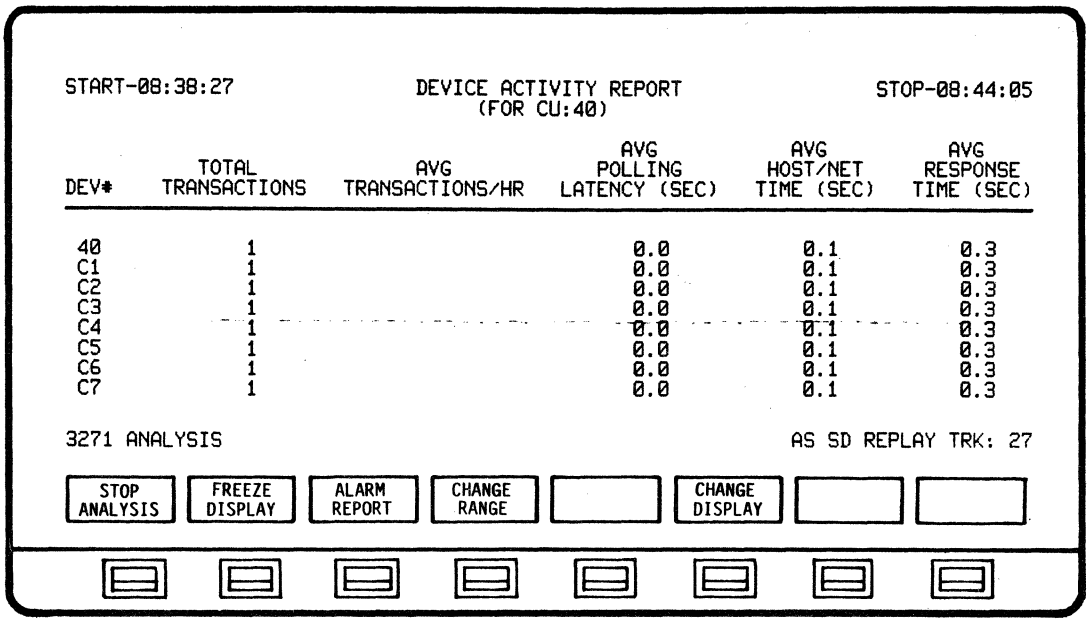
When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display.

The LINE REPORT display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing SET UP ANALYSIS - CHANGE DISPLAY - NEXT LIST and selecting LINE REPORT. This display may also be accessed while in the RUN ANALYSIS mode by depressing CHANGE DISPLAY - NEXT LIST and selecting LINE REPORT.

A Designated name may be assigned to the Report by depressing the CHANGE RPT NAME softkey. The CHANGE RPT NAME softkey will initiate a softkey/label display that will provide softkeys to designate or change a Report name.

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

4.11 DEVICE ACTIVITY REPORT



The DEVICE ACTIVITY REPORT provides accumulated parameters for all Devices for a selected Control Unit.

The DEVICE ACTIVITY REPORT represents real-time or recorded/replayed data in a dynamic manner - the display is automatically updated as Data is detected and analyzed. Data will continue to be calculated and displayed until the end of session.

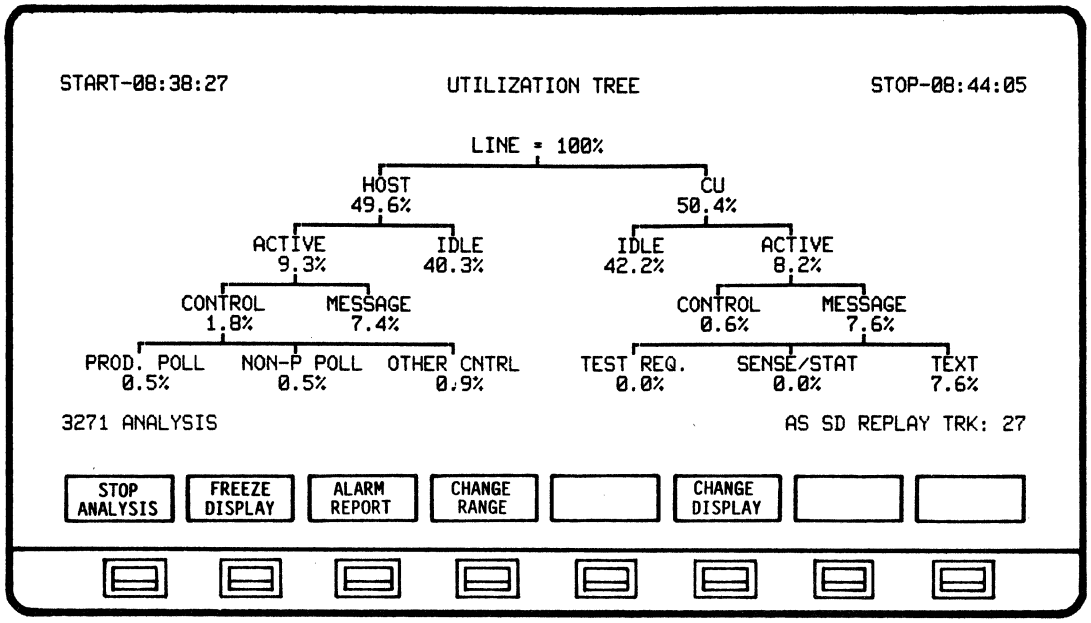
NOTE

When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display.

The DEVICE ACTIVITY REPORT display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing SET UP ANALYSIS - CHANGE DISPLAY - NEXT LIST and selecting DEVICE ACTIVITY. This display may also be accessed while in the RUN ANALYSIS mode by depressing CHANGE DISPLAY - NEXT LIST and selecting DEVICE ACTIVITY.

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

4.12 UTILIZATION TREE



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

The UTILIZATION TREE represents real-time or recorded/replayed data in a dynamic manner - the display is automatically updated as Data is detected and analyzed. Data will continue to be calculated and displayed until the end of session.

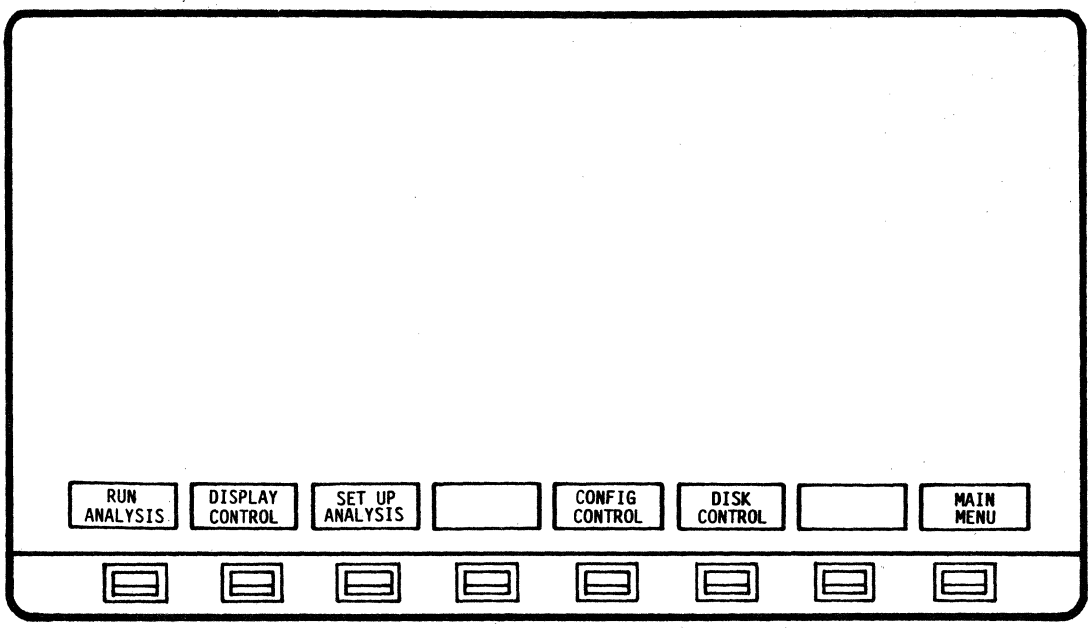
NOTE

When ANALYSIS is selected from the Main Menu and RUN ANALYSIS is initiated, the system automatically defaults to the CURRENT BISYNC LINE ACTIVITY display.

The UTILIZATION TREE display may be accessed from ANALYSIS or STOP ANALYSIS modes by depressing SET UP ANALYSIS - CHANGE DISPLAY - NEXT LIST and selecting UTLZATION TREE. This display may also be accessed while in the RUN ANALYSIS mode by depressing CHANGE DISPLAY - NEXT LIST and selecting UTLZATION TREE.

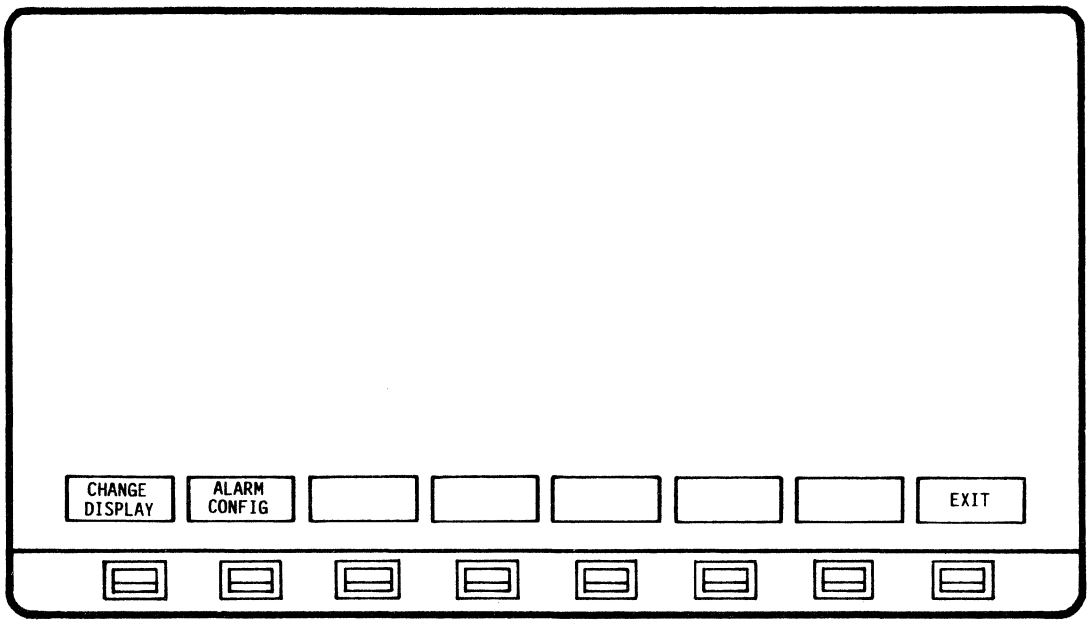
4.13 Bisync Analysis Softkey/Label Descriptions

4.13.1 ANALYSIS Softkey/Label Display



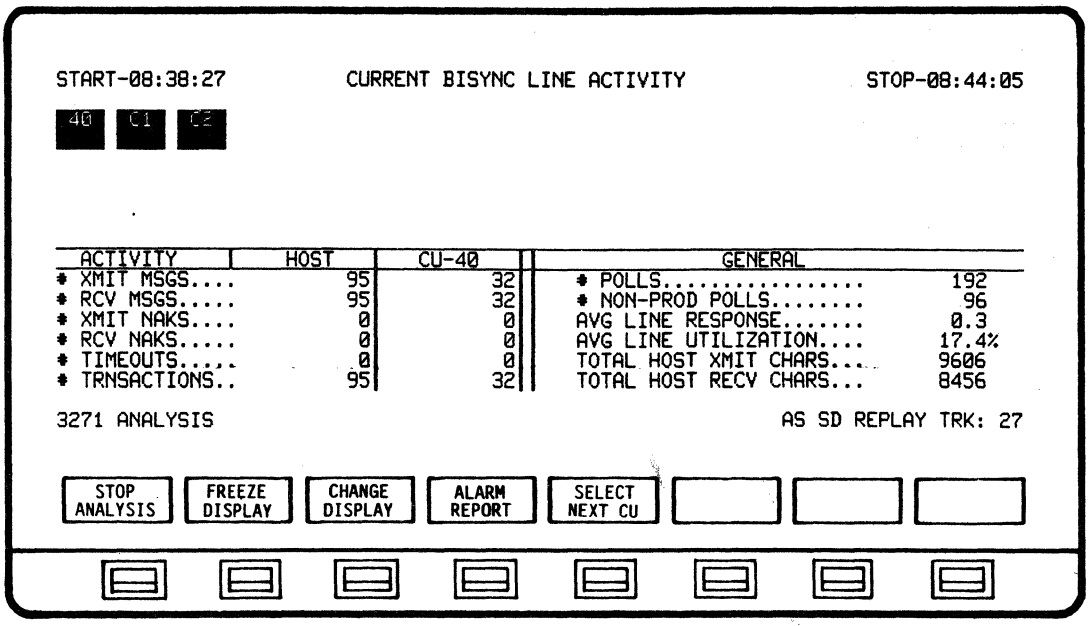
SOFTKEY/LABEL	FUNCTION
RUN ANALYSIS	Initiates Analysis process.
DISPLAY CONTROL	Sets up softkey/label display for changing displays, alarm reports and print control functions. (Ref 4.13.13 thru 4.13.20 - DISPLAY CONTROL) NOTE - If depressed before RUN ANALYSIS is initiated, a message will appear: ***NO ACTIVITY ACCUMULATED***
SET UP ANALYSIS	Sets-up display to select from available display formats (Ref 4.13.11 - CHANGE DISPLAY) and also select Alarm configurations (Ref 5.3.1 - ALARM CONFIGURATION).
	Not Used
CONFIG CONTROL	Initiates operating configuration modifications. (Ref 3.7 - Configuration Control - User Manual)
DISK CONTROL	To set-up and begin disk operating functions. (Ref 3.8 - Disk Operating System - User Manual)
	Not Used
MAIN MENU	Return to MAIN MENU.

4.13.2 SET UP ANALYSIS Softkey/Label Display



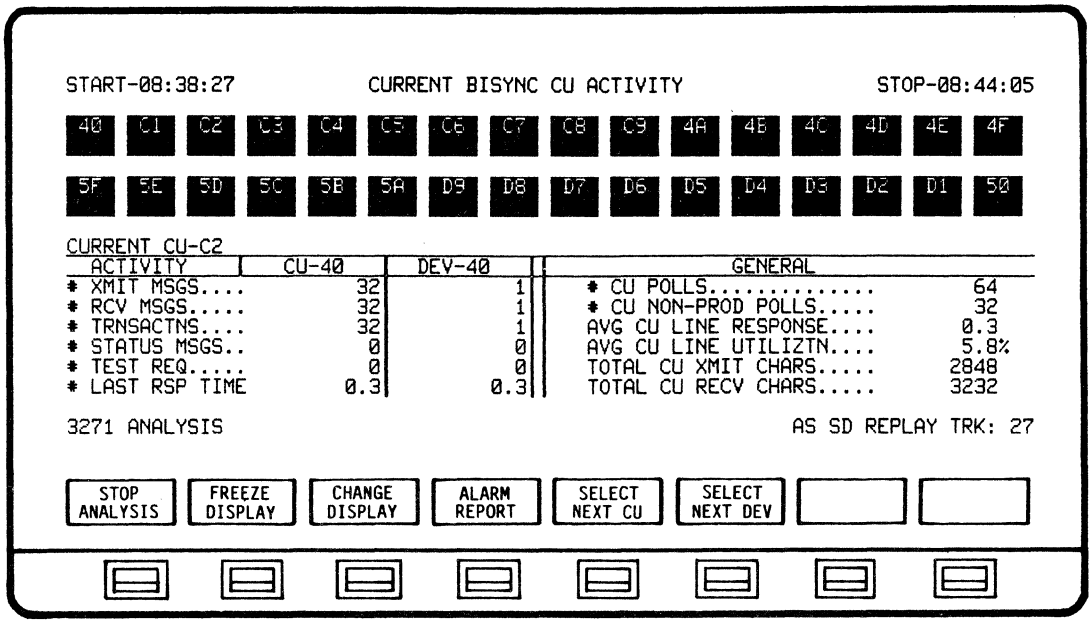
SOFTKEY/LABEL	FUNCTION
CHANGE DISPLAY	Sets up display to select CURRENT BISYNC LINE ACTIVITY, CURRENT BISYNC CU ACTIVITY, LINE UTILIZATION BY CU, LINE UTILIZATION BY TIME, HOST/CU TRAFFIC SUMMARY, LINE RESPONSE TIME SUMMARY, UTILIZATION TREE, DEVICE RESPONSE TIME SUMMARY, DEVICE TRANSACTION SUMMARY, LINE REPORT or DEVICE ACTIVITY REPORT (Ref 4.13.11 - CHANGE DISPLAY).
ALARM CONFIG	Sets-up display to select Alarm configurations. (Ref 5.3.1 - ALARM CONFIGURATION)
	Not Used
	Not Used
	Not Used
	Not Used
	Not Used
EXIT	Return to previous softkey/label display. (SET UP ANALYSIS - Ref 4.13.1)

4.13.3 RUN ANALYSIS Softkey/Label Display (CURRENT BISYNC LINE ACTIVITY)



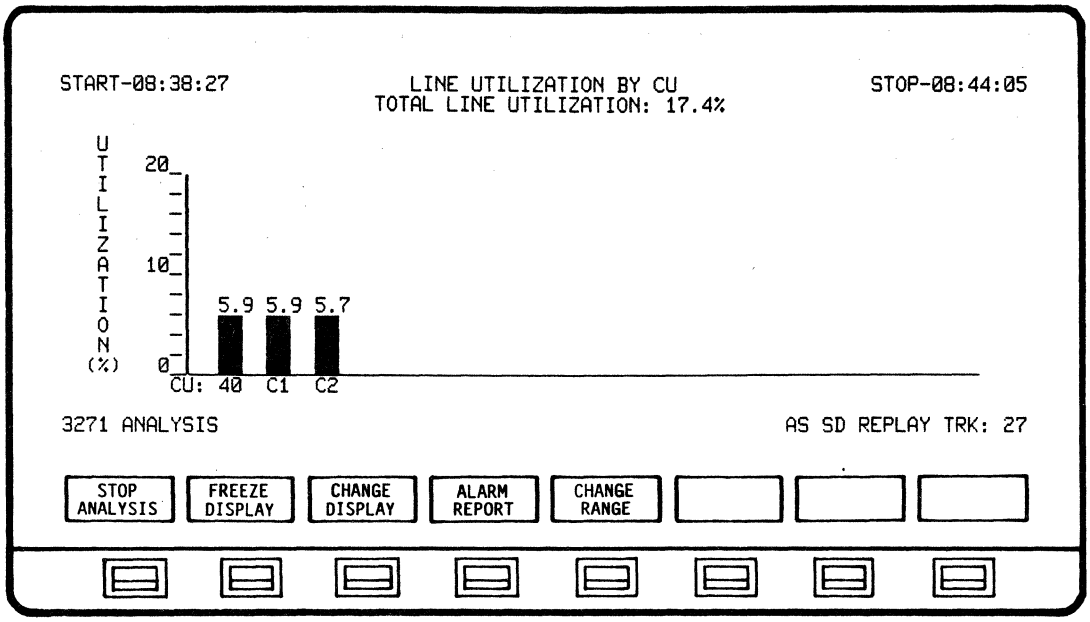
SOFTKEY/LABEL	FUNCTION
STOP ANALYSIS	Stops analysis process.
FREEZE DISPLAY / RESUME DISPLAY	Freezes/Resumes data displayed on screen only. All other analysis functions continue, including data capture. (Flip-flop type action).
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display for reviewing Alarm Report. (Ref 5.3.10 - ALARM REPORT)
SELECT NEXT CU	Selects next Control Unit to display that unit's summary activity data. (CUs will cycle sequentially when softkey is depressed)
	Not Used
	Not Used
	Not Used

4.13.4 RUN ANALYSIS Softkey/Label Display (CURRENT BISYNC CU ACTIVITY)



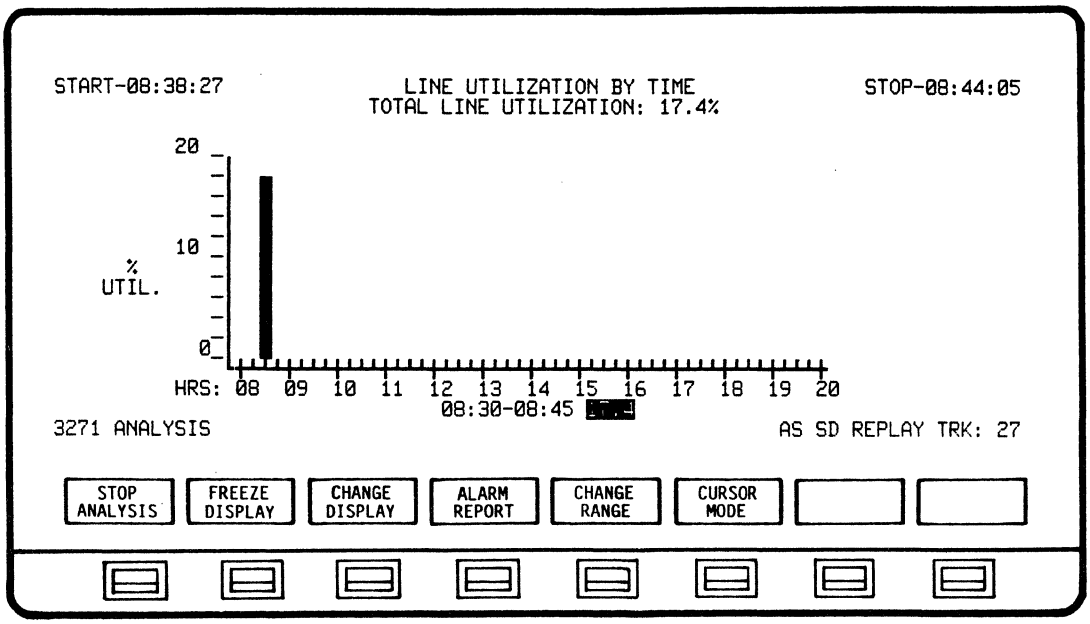
SOFTKEY/LABEL	FUNCTION
STOP ANALYSIS	Stops analysis process.
FREEZE DISPLAY / RESUME DISPLAY	Freezes/Resumes data displayed on screen only. All other analysis functions continue, including data capture. (Flip-flop type action).
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
SELECT NEXT CU	Selects next Control UNit to display that CU's summary activity data.
SELECT NEXT DEV	Selects next Device Unit to display that unit's summary activity data. (DEVs will cycle sequentially when softkey is depressed)
	Not Used
	Not Used

4.13.5 RUN ANALYSIS Softkey/Label Display (LINE UTILIZATION BY CU)



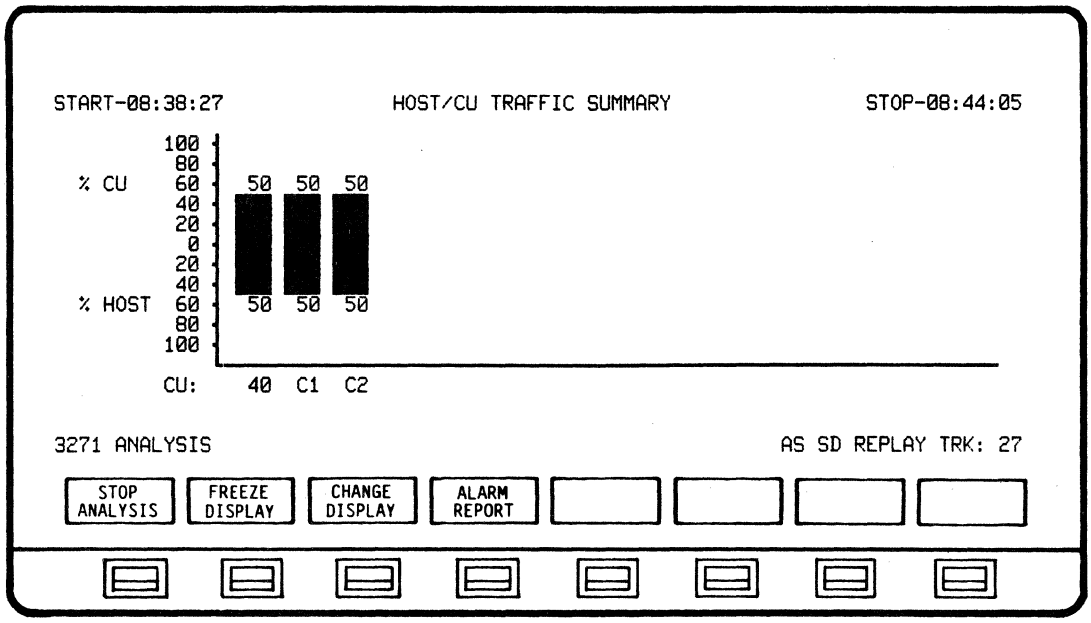
SOFTKEY/LABEL	FUNCTION
STOP ANALYSIS	Stops analysis process.
FREEZE DISPLAY / RESUME DISPLAY	Freezes/Resumes data displayed on screen only. All other analysis functions continue, including data capture. (Flip-flop type action).
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up dispaly to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
CHANGE RANGE	Enables user to select from seven (7) bar graph scales (Ref 4.13.23 - CHANGE RANGE).
	Not Used
	Not Used
	Not Used

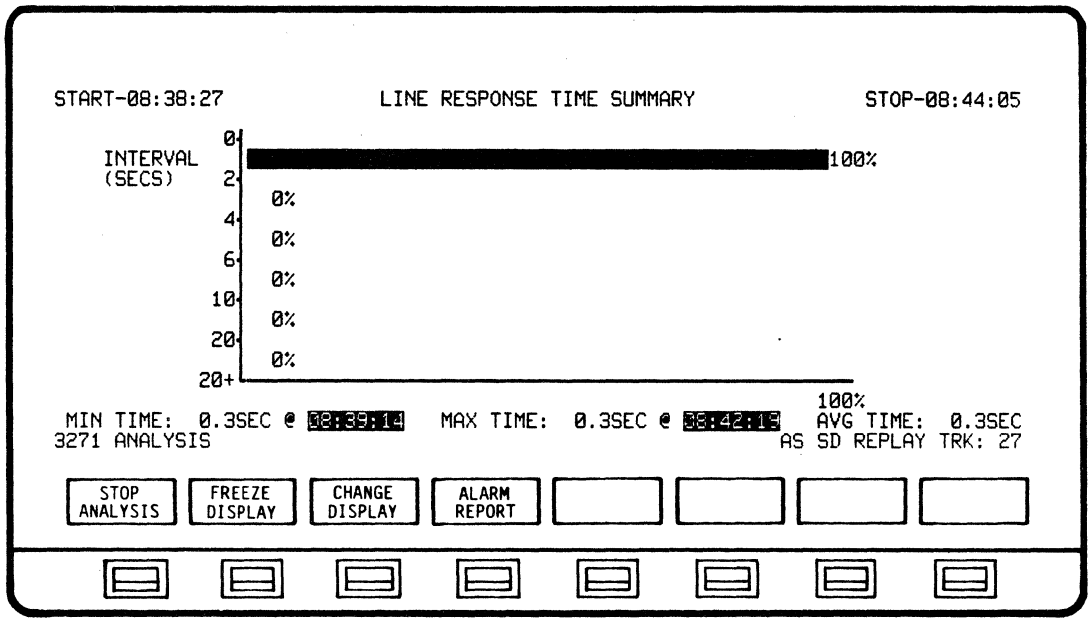
4.13.6 RUN ANALYSIS Softkey/Label Display (LINE UTILIZATION BY TIME)

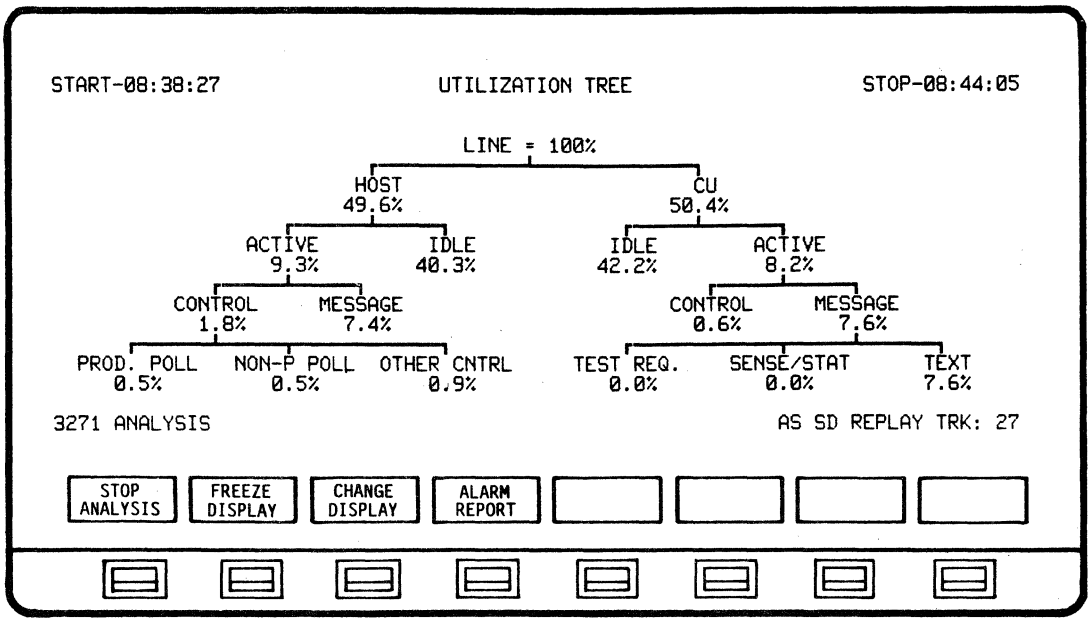


SOFTKEY/LABEL	FUNCTION
STOP ANALYSIS	Stops analysis process.
FREEZE DISPLAY / RESUME DISPLAY	Freezes/Resumes data displayed on screen only. All other analysis functions continue, including data capture. (Flip-flop type action).
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
CHANGE RANGE	Enables user to select from seven (7) bar graph scales (Ref 4.13.24 - CHANGE RANGE).
CURSOR MODE	Arrow cursor appears at bottom of bar graph and enables user to scroll left or right, permitting display of any time interval for analysis. (Ref 3.13.22 - CURSOR MODE)
	Not Used
	Not Used

4.13.7 RUN ANALYSIS Softkey/Label Display (HOST/CU TRAFFIC SUMMARY, LINE RESPONSE TIME SUMMARY and UTILIZATION TREE)

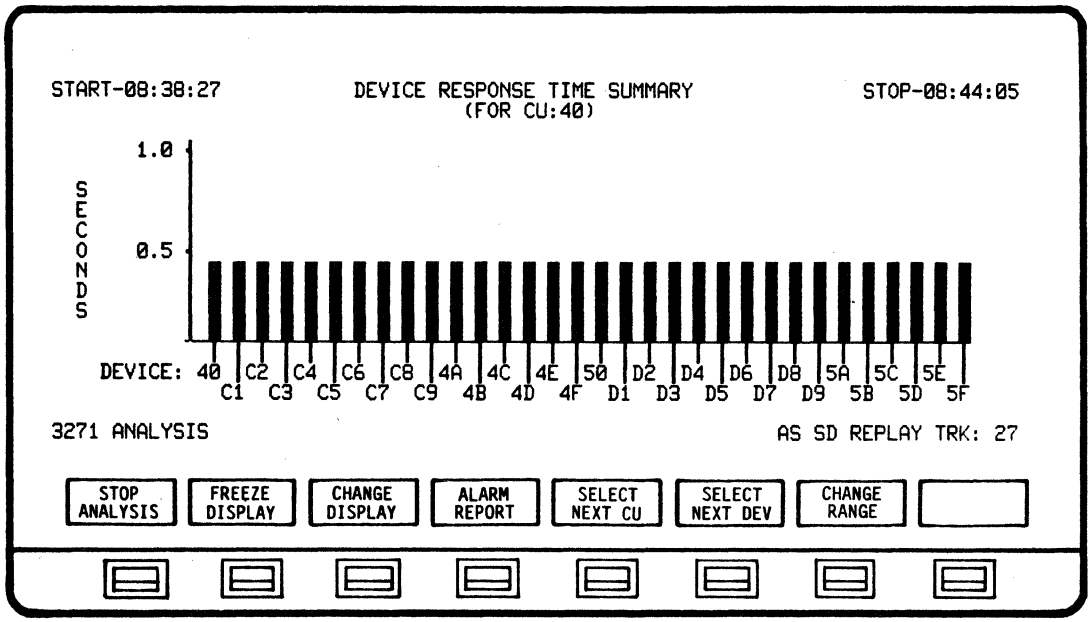


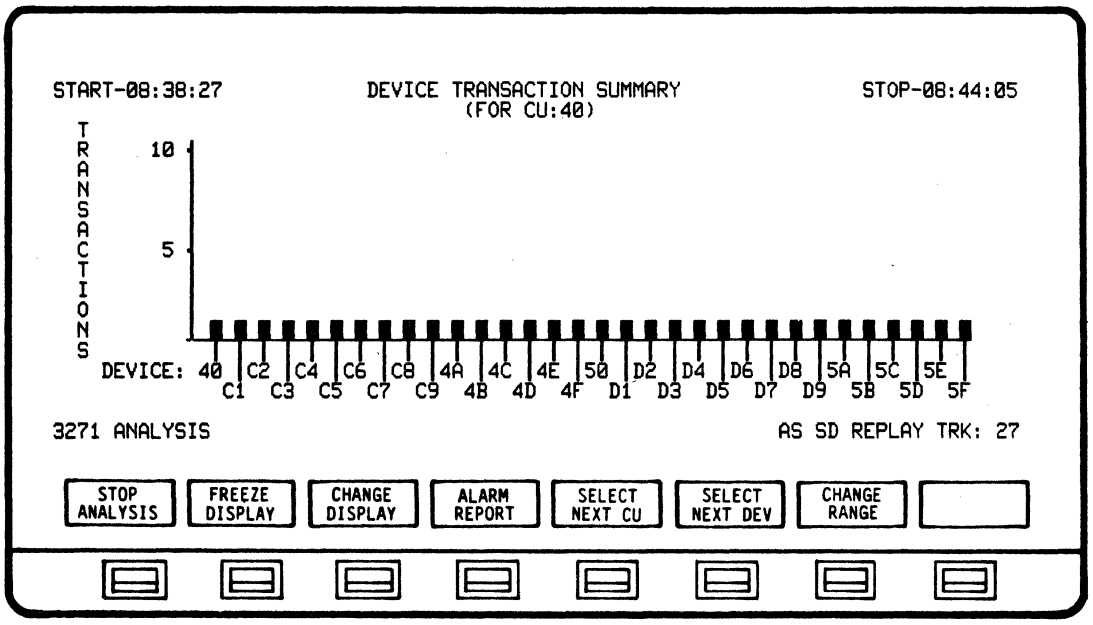




SOFTKEY/LABEL	FUNCTION
STOP ANALYSIS	Stops analysis process.
FREEZE DISPLAY / RESUME DISPLAY	Freezes/Resumes data displayed on screen only. All other analysis functions continue, including data capture. (Flip-flop type action).
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
	Not Used
	Not Used
	Not Used
	Not Used

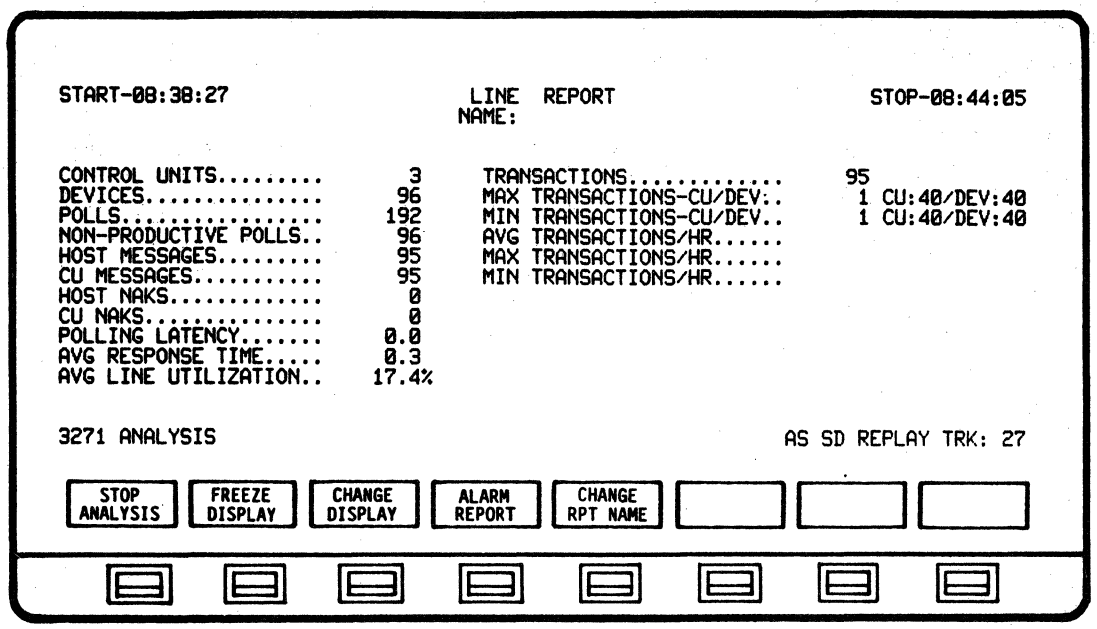
4.13.8 RUN ANALYSIS Softkey/Label Display (DEVICE RESPONSE TIME SUMMARY and DEVICE TRANSACTION SUMMARY)





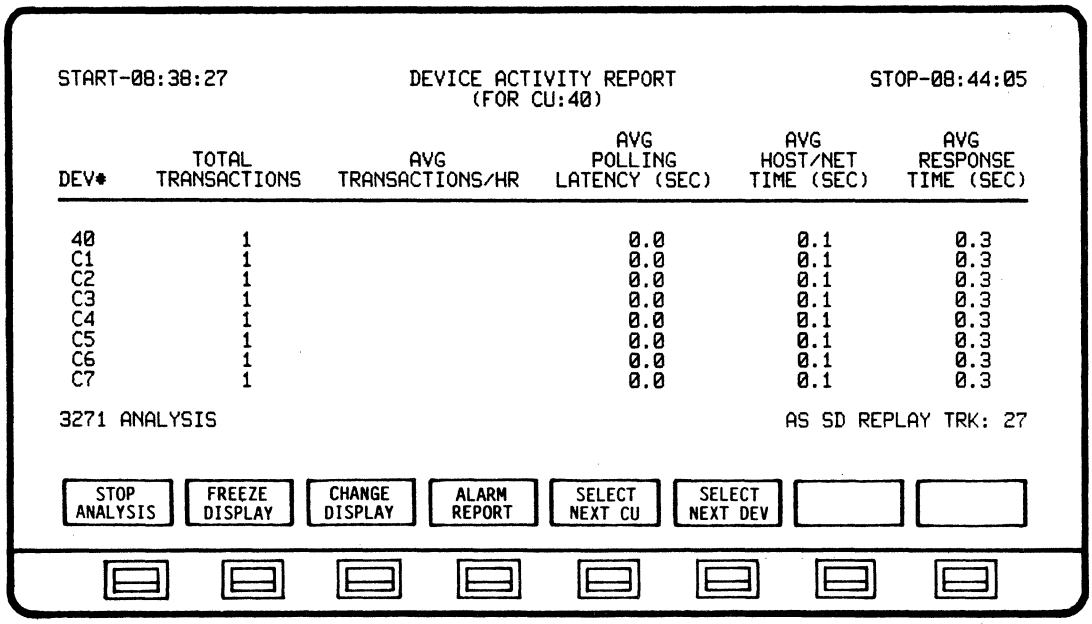
SOFTKEY/LABEL	FUNCTION
STOP ANALYSIS	Stops analysis process.
FREEZE DISPLAY	Freezes/Resumes data displayed on screen only. All other analysis functions continue, including data capture. (Flip-flop type action).
RESUME DISPLAY	
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display for reviewing Alarm Report. (Ref 5.3.10 - ALARM REPORT)
SELECT NEXT CU	Selects next Control Unit to display that unit's summary activity data. (CUs will cycle sequentially when softkey is depressed)
SELECT NEXT DEV	Arrow cursor appears at bottom of bar graph and enables user to scroll left or right, permitting display of any time interval for analysis. (Ref 4.13.22 - CURSOR MODE)
CHANGE RANGE	Enables user to select from seven (7) bar graph scales (Ref 4.13.25 - 4.13.26 - CHANGE RANGE).
	Not Used

4.13.9 RUN ANALYSIS Softkey/Label Display (LINE REPORT)



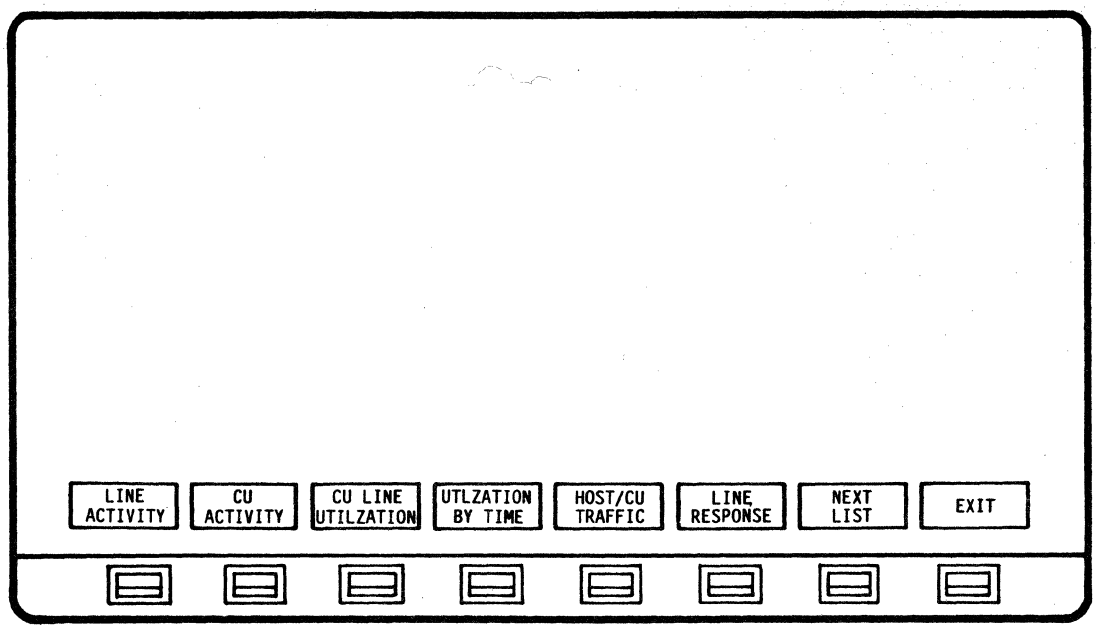
SOFTKEY/LABEL	FUNCTION
STOP ANALYSIS	Stops analysis process.
FREEZE DISPLAY / RESUME DISPLAY	Freezes/Resumes data displayed on screen only. All other analysis functions continue, including data capture. (Flip-flop type action).
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display for reviewing Alarm Report. (Ref 5.3.10 - ALARM REPORT)
CHANGE RPT NAME	Sets-up softkey/label display to create or change the report name (Ref 4.13.21 - CHANGE REPORT NAME).
	Not Used
	Not Used
	Not Used

4.13.10 RUN ANALYSIS Softkey/Label Display (DEVICE ACTIVITY REPORT)



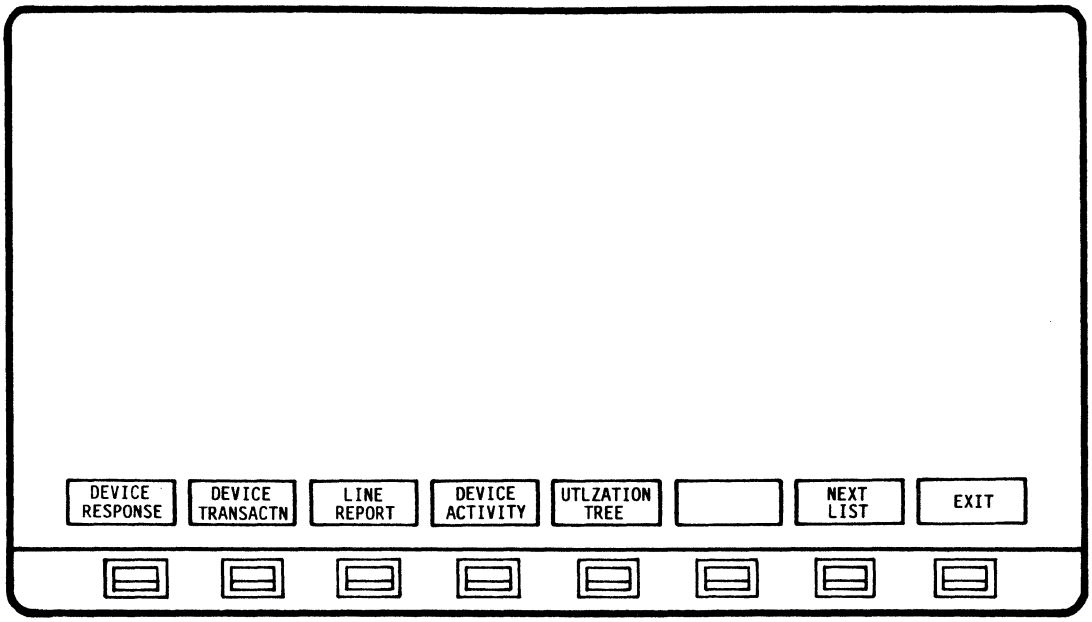
SOFTKEY/LABEL	FUNCTION
STOP ANALYSIS	Stops analysis process.
FREEZE DISPLAY / RESUME DISPLAY	Freezes/Resumes data displayed on screen only. All other analysis functions continue, including data capture. (Flip-flop type action).
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
SELECT NEXT CU	Selects next Control UNit to display that CU's summary activity data.
SELECT NEXT DEV	Selects next Device Unit to display that unit's summary activity data. (DEVs will cycle sequentially when softkey is depressed)
	Not Used
	Not Used

4.13.11 CHANGE DISPLAY Softkey/Label Display



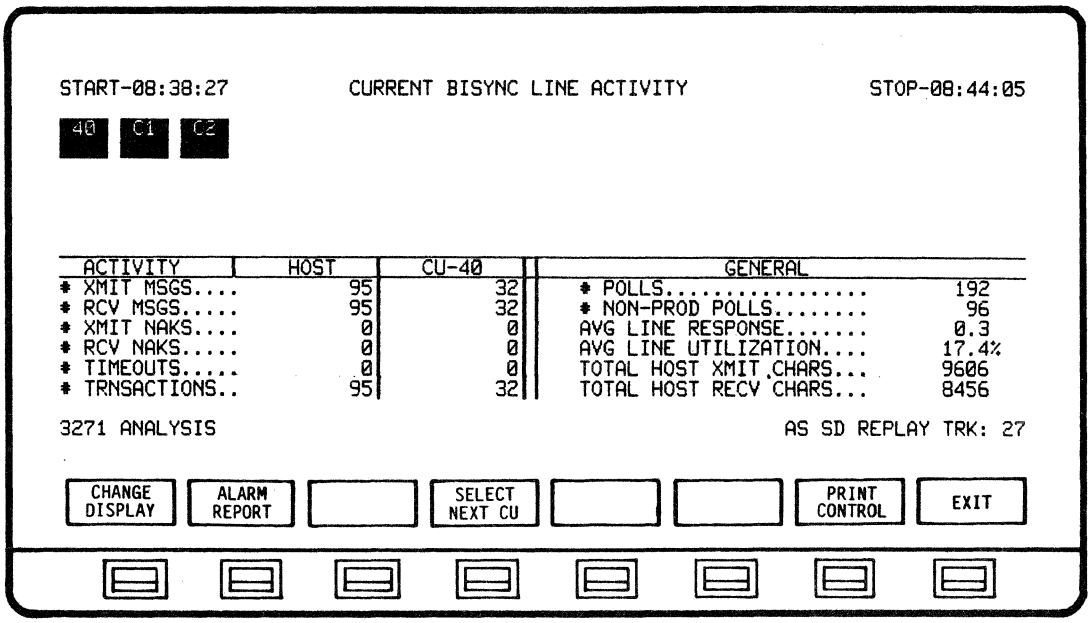
SOFTKEY/LABEL	FUNCTION
LINE ACTIVITY	Selects CURRENT BISYNC LINE ACTIVITY display for analysis.
CU ACTIVITY	Selects CURRENT BISYNC CU ACTIVITY display for analysis.
CU LINE UTILZATION	Selects LINE UTILIZATION BY CU display for analysis.
UTLZATION BY TIME	Selects LINE UTILIZATION BY TIME display for analysis.
HOST/CU TRAFFIC	Selects HOST/CU TRAFFIC SUMMMARY display for analysis.
LINE RESPONSE	Selects LINE RESPONSE TIME SUMMARY display for analysis.
NEXT LIST	Sets-up softkey/label display to select additional displays for analysis. (Ref 4.13.12 - NEXT LIST)
EXIT	Sets-up softkey/labels for selecting analysis functions of screen being displayed.

4.13.12 NEXT LIST Softkey/Label Display



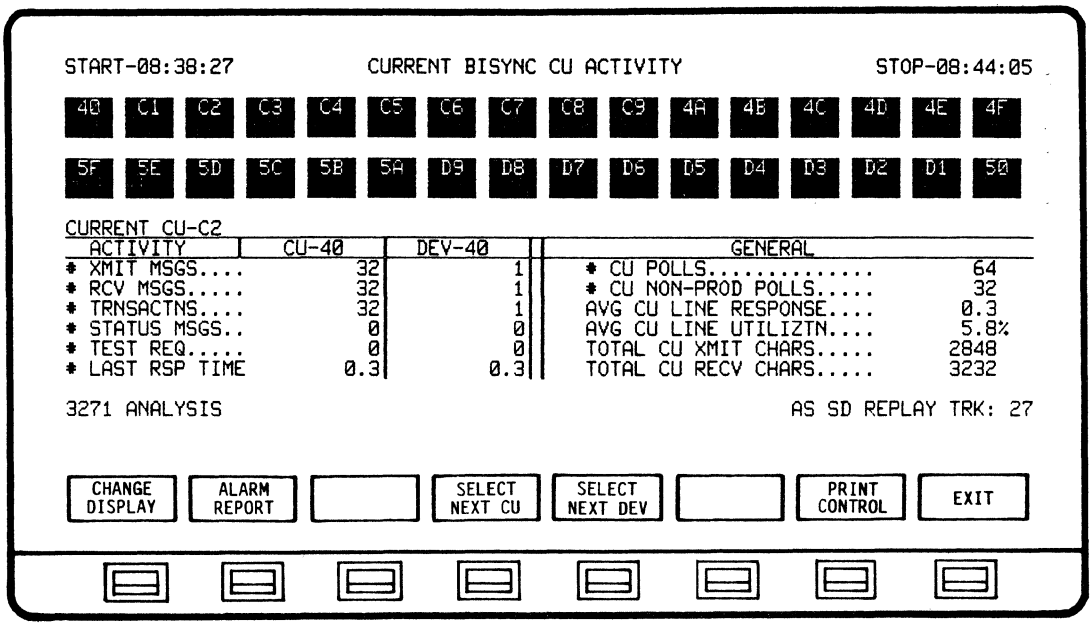
SOFTKEY/LABEL	FUNCTION
DEVICE RESPONSE	Selects DEVICE RESPONSE TIME SUMMARY display for analysis.
DEVICE TRANSACTN	Selects DEVICE TRANSACTION SUMMARY display for analysis.
LINE REPORT	Selects LINE REPORT display for analysis.
DEVICE ACTIVITY	Selects DEVICE ACTIVITY REPORT display for analysis.
UTLZATION TREE	Selects UTILIZATION TREE display for analysis.
	Not Used
NEXT LIST	Sets-up softkey/label display to select additional displays for analysis. (Ref 4.13.11 - CHANGE DISPLAY)
EXIT	Sets-up softkey/labels for selecting analysis functions of screen being displayed.

4.13.13 DISPLAY CONTROL Softkey/Label Display (CURRENT BISYNC LINE ACTIVITY)



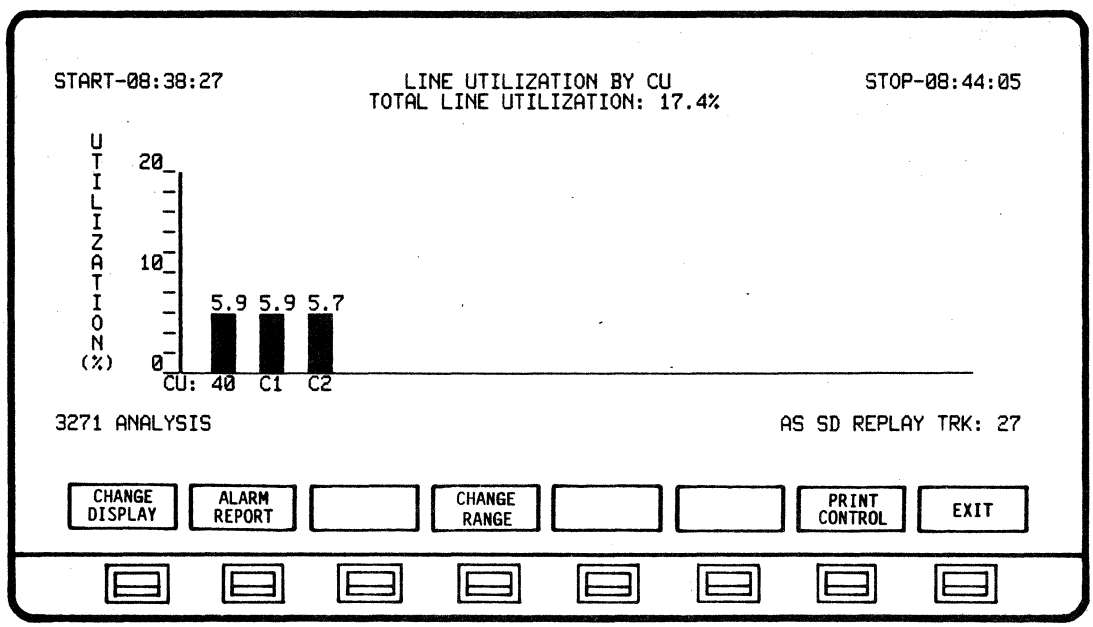
SOFTKEY/LABEL	FUNCTION
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
	Not Used
SELECT NEXT CU	Selects next Control Unit to display that CU's summary activity data.
	Not Used
	Not Used
PRINT CONTROL	Sets-up softkey/label display to set up and select print control functions. (Ref 4.13.27 - PRINT CONTROL) (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display. (DISPLAY CONTROL - Ref 4.13.1)

4.13.14 DISPLAY CONTROL Softkey/Label Display (CURRENT BISYNC CU ACTIVITY)



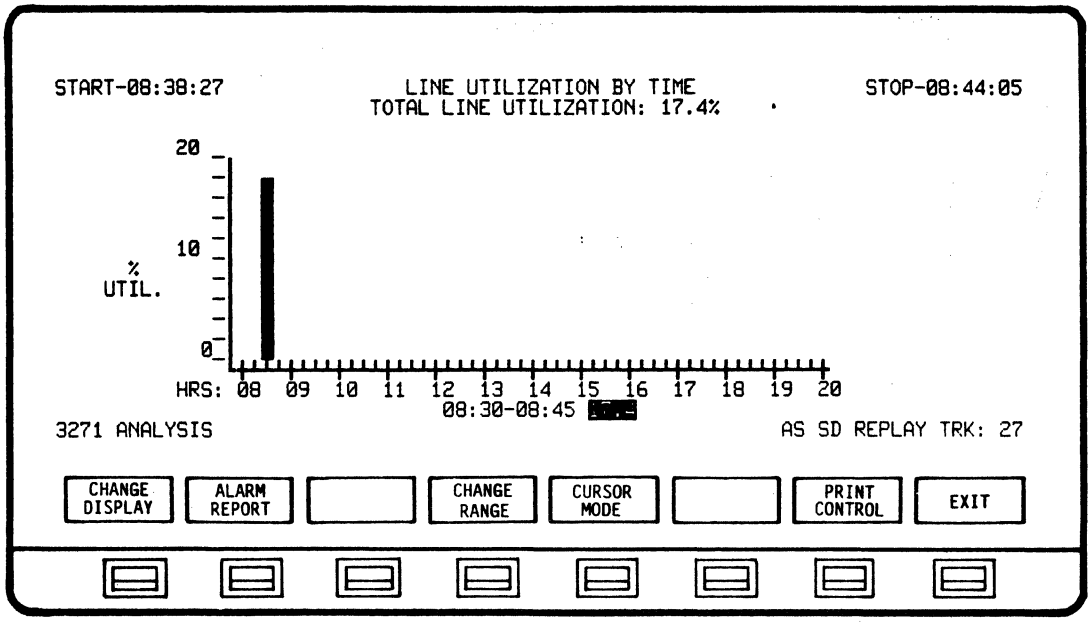
SOFTKEY/LABEL	FUNCTION
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
	Not Used
SELECT NEXT CU	Selects next Control Unit to display that CU's summary activity data.
SELECT NEXT DEV	Selects next Device Unit to display that unit's summary activity data. (DEVs will cycle sequentially when softkey is depressed)
	Not Used
PRINT CONTROL	Sets-up softkey/label display to set up and select print control functions. (Ref 4.13.27 - PRINT CONTROL) (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display. (DISPLAY CONTROL - Ref 4.13.1)

4.13.15 DISPLAY CONTROL Softkey/Label Display (LINE UTILIZATION BY CU)



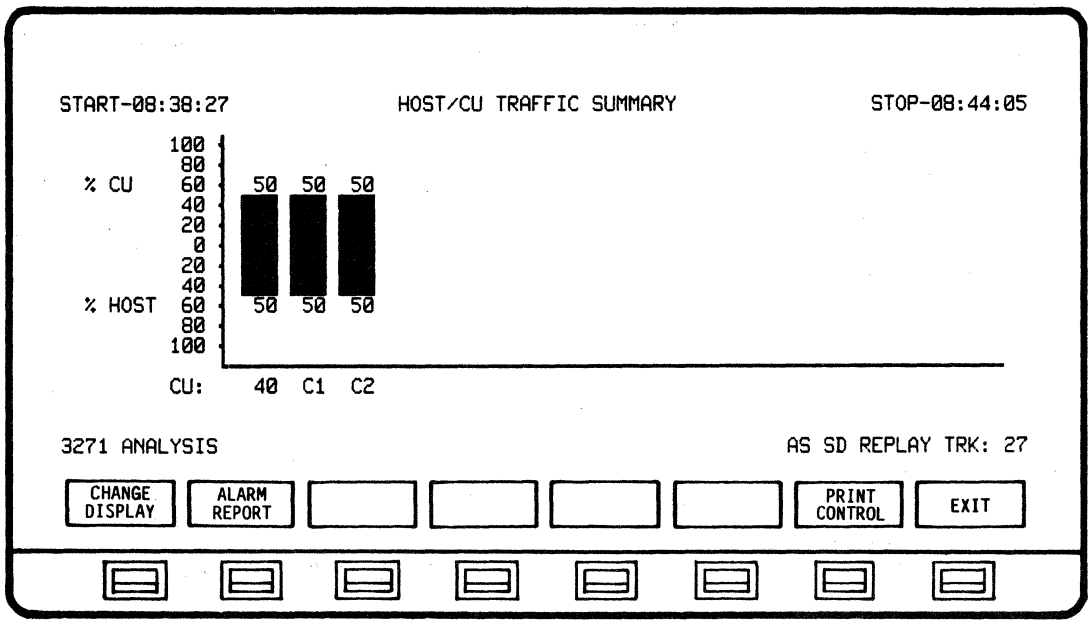
SOFTKEY/LABEL	FUNCTION
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
	Not Used
CHANGE RANGE	Enables user to select from seven (7) bar graph scales (Ref 4.13.23 - CHANGE RANGE).
	Not Used
	Not Used
PRINT CONTROL	Sets-up softkey/label display to set up and select print control functions. (Ref 4.13.27 - PRINT CONTROL) (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display. (DISPLAY CONTROL - Ref 4.13.1)

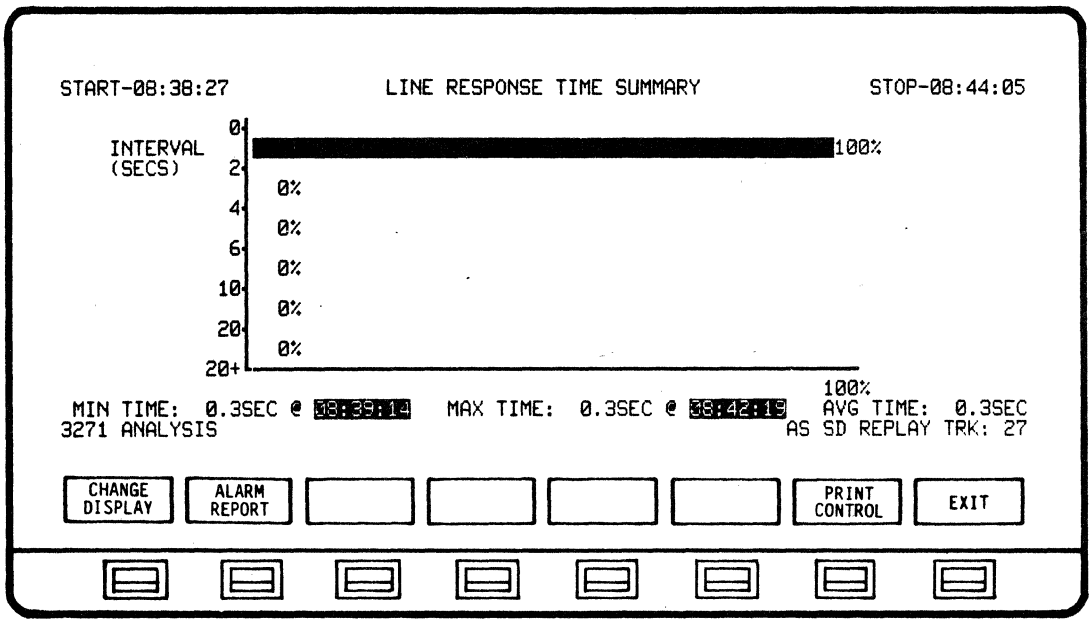
4.13.16 DISPLAY CONTROL Softkey/Label Display (LINE UTILIZATION BY TIME)

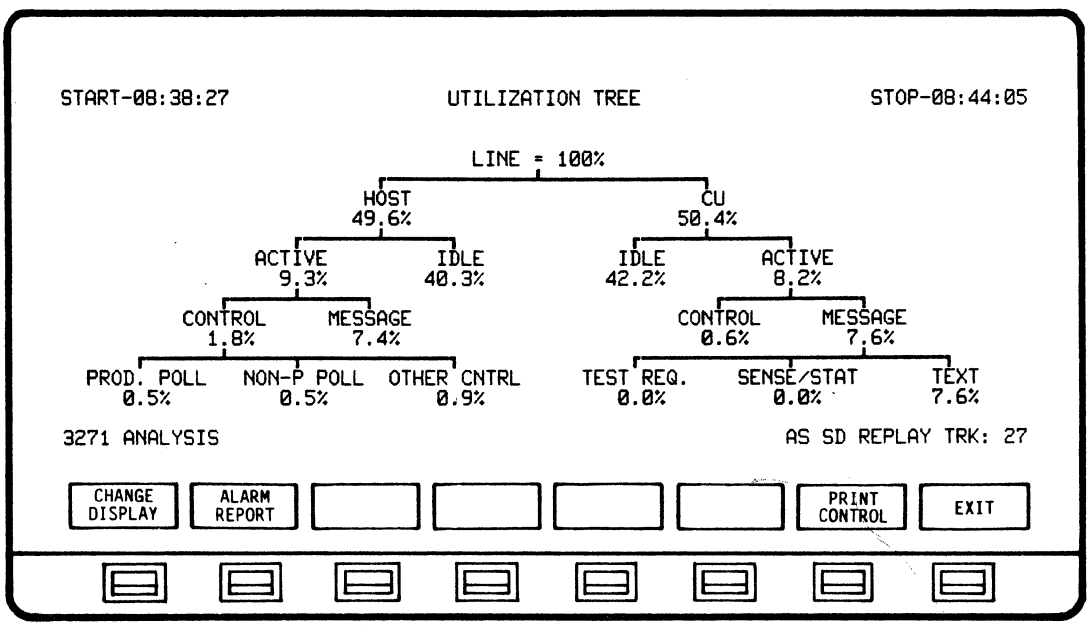


SOFTKEY/LABEL	FUNCTION
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
	Not Used
CHANGE RANGE	Enables user to select from seven (7) bar graph scales (Ref 4.13 24 - CHANGE RANGE).
CURSOR MODE	Arrow cursor appears at bottom of bar graph and enables user to scroll left or right, permitting display of any time interval for analysis. (Ref 4.13.22 - CURSOR MODE)
	Not Used
PRINT CONTROL	Sets-up softkey/label display to set up and select print control functions. (Ref 4.13.27 - PRINT CONTROL) (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display. (DISPLAY CONTROL - Ref 4.13.1)

4.13.17 DISPLAY CONTROL Softkey/Label Display (HOST/CU TRAFFIC SUMMARY, LINE RESPONSE TIME SUMMARY and UTILIZATION TREE)

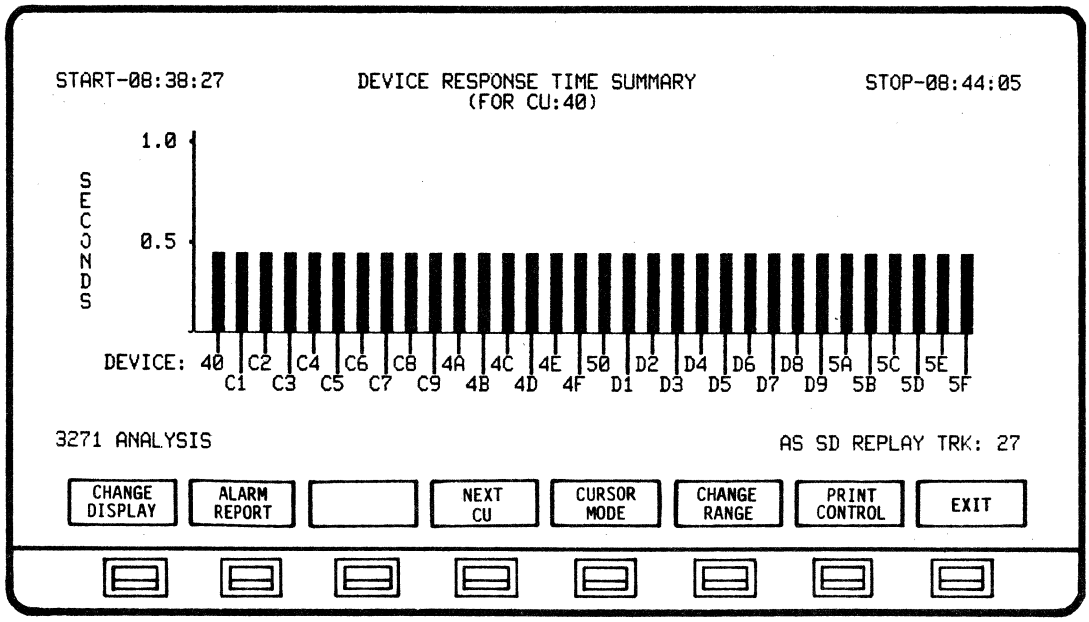


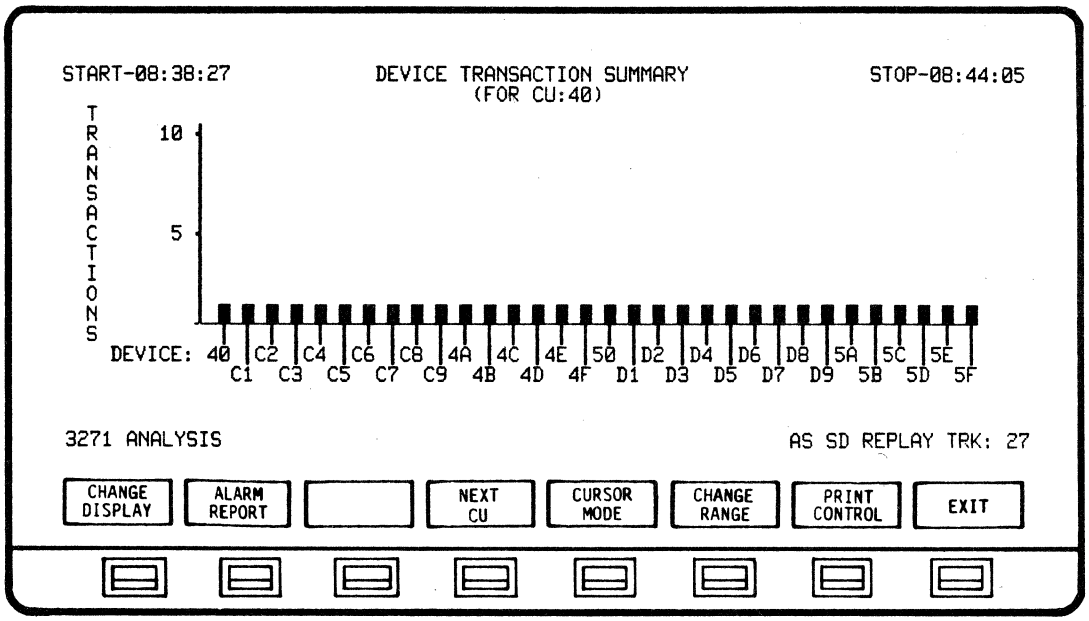




SOFTKEY/LABEL	FUNCTION
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
	Not Used
	Not Used
	Not Used
	Not Used
PRINT CONTROL	Sets-up softkey/label display to set up and select print control functions. (Ref 4.13.27 - PRINT CONTROL) (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display. (DISPLAY CONTROL - Ref 4.13.1)

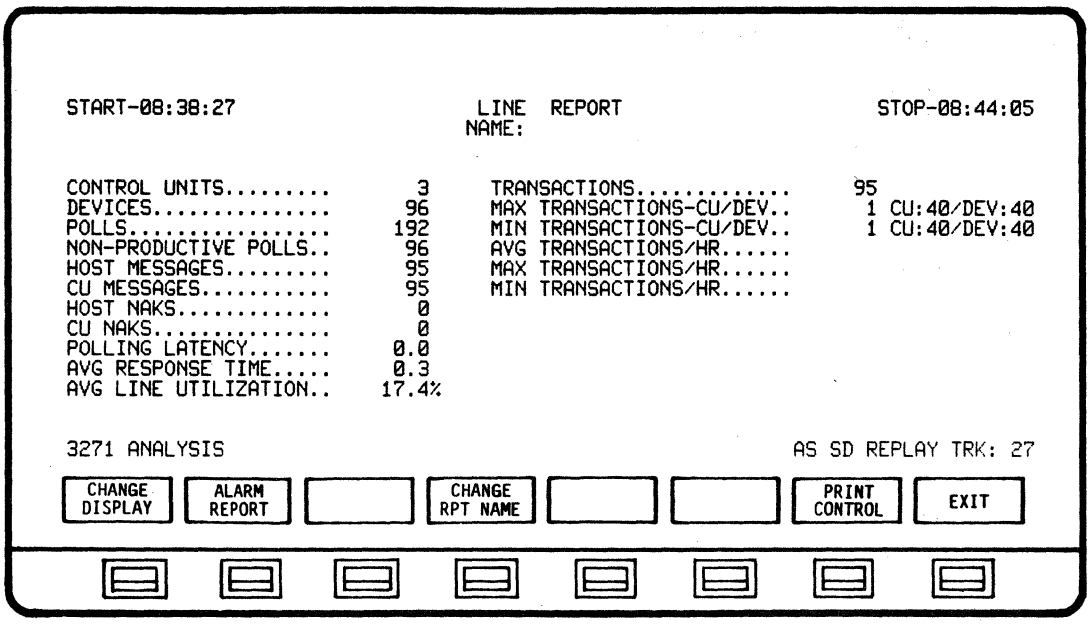
4.13.18 DISPLAY CONTROL Softkey/Label Display (DEVICE RESPONSE TIME SUMMARY and DEVICE TRANSACTION SUMMARY)





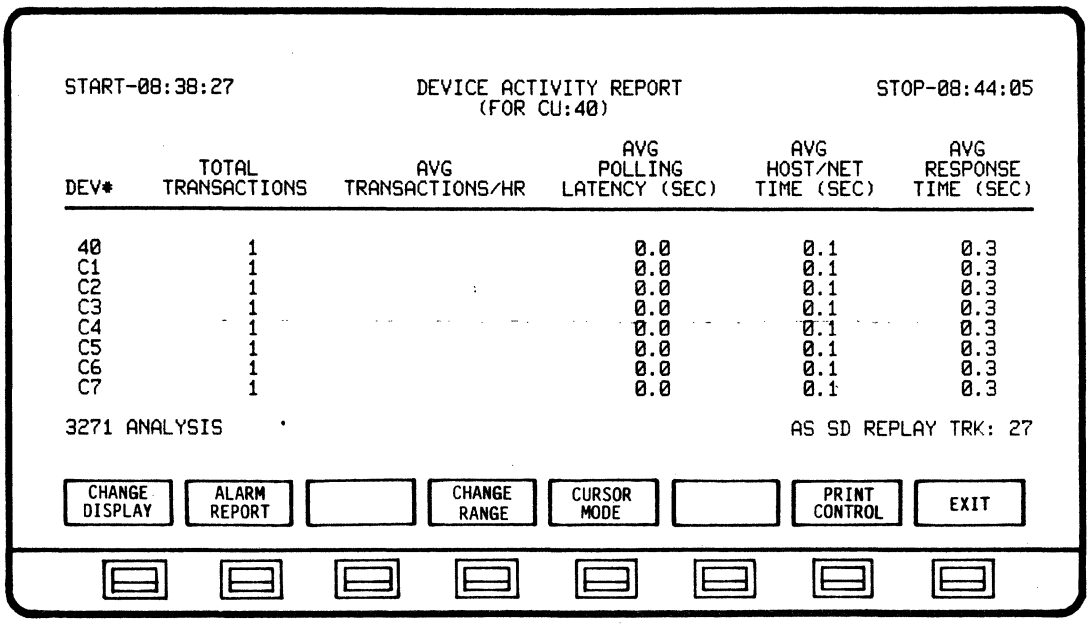
SOFTKEY/LABEL	FUNCTION
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
	Not Used
NEXT CU	Selects next Control Unit to display that CU's summary activity data.
CURSOR MODE	Arrow cursor appears at bottom of bar graph and enables user to scroll left or right, permitting display of any time interval for analysis. (Ref 4.13.22 - CURSOR MODE)
CHANGE RANGE	Enables user to select from seven (7) bar graph scales (Ref 4.13.25 - 4.13.26 - CHANGE RANGE).
PRINT CONTROL	Sets-up softkey/label display to set up and select print control functions. (Ref 4.13.27 - PRINT CONTROL) (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display. (DISPLAY CONTROL - Ref 4.13.1)

4.13.19 DISPLAY CONTROL Softkey/Label Display (LINE REPORT)



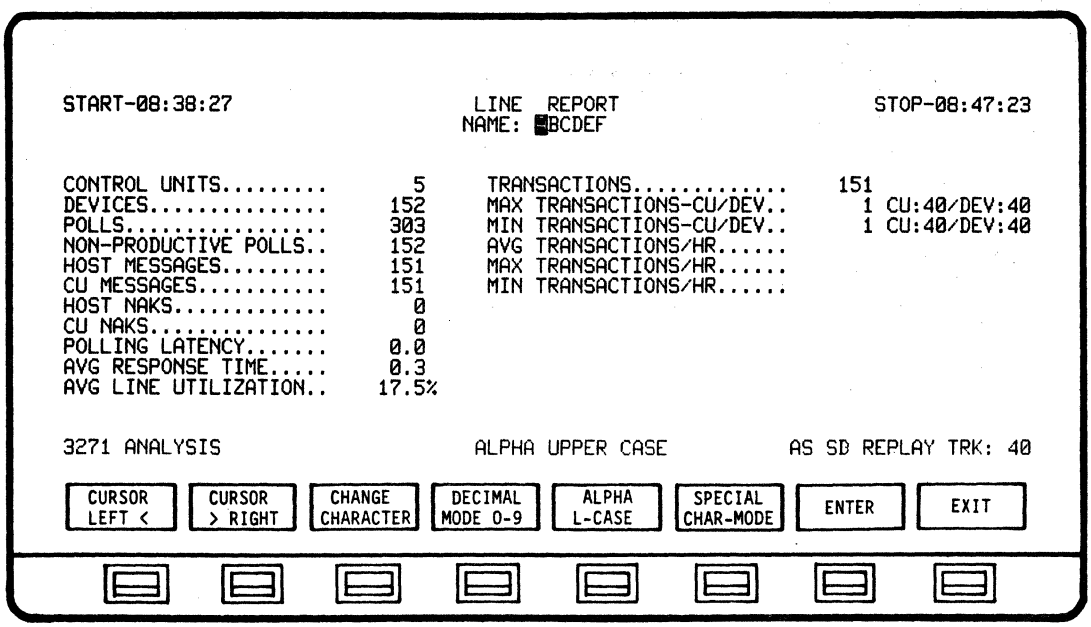
SOFTKEY/LABEL	FUNCTION
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
	Not Used
CHANGE RPT NAME	Sets-up softkey/label display to create or modify report name. (Ref 4.13.21 - CHANGE REPORT NAME)
	Not Used
	Not Used
PRINT CONTROL	Sets-up softkey/label display to set up and select print control functions. (Ref 4.13.27 - PRINT CONTROL) (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display. (DISPLAY CONTROL - Ref 4.13.1)

4.13.20 DISPLAY CONTROL Softkey/Label Display (DEVICE ACTIVITY REPORT)



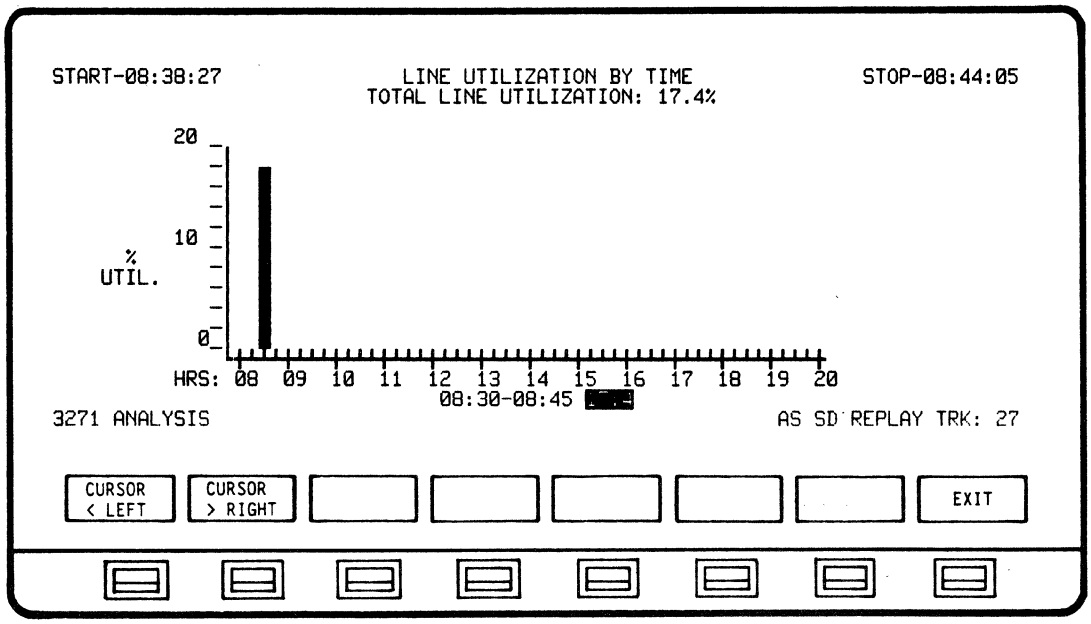
SOFTKEY/LABEL	FUNCTION
CHANGE DISPLAY	Sets-up softkey/label display to change analysis display screens. (Ref 4.13.11 - CHANGE DISPLAY)
ALARM REPORT	Sets-up display to review Alarm Report. (Ref 5.3.10 - ALARM REPORT)
	Not Used
CHANGE RANGE	Selects next Control Unit to display that CU's summary activity data.
CURSOR MODE	Selects next Device Unit to display that unit's summary activity data. (DEVs will cycle sequentially when softkey is depressed)
	Not Used
PRINT CONTROL	Sets-up softkey/label display to set up and select print control functions. (Ref 4.13.27 - PRINT CONTROL) (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display. (DISPLAY CONTROL - Ref 4.13.1)

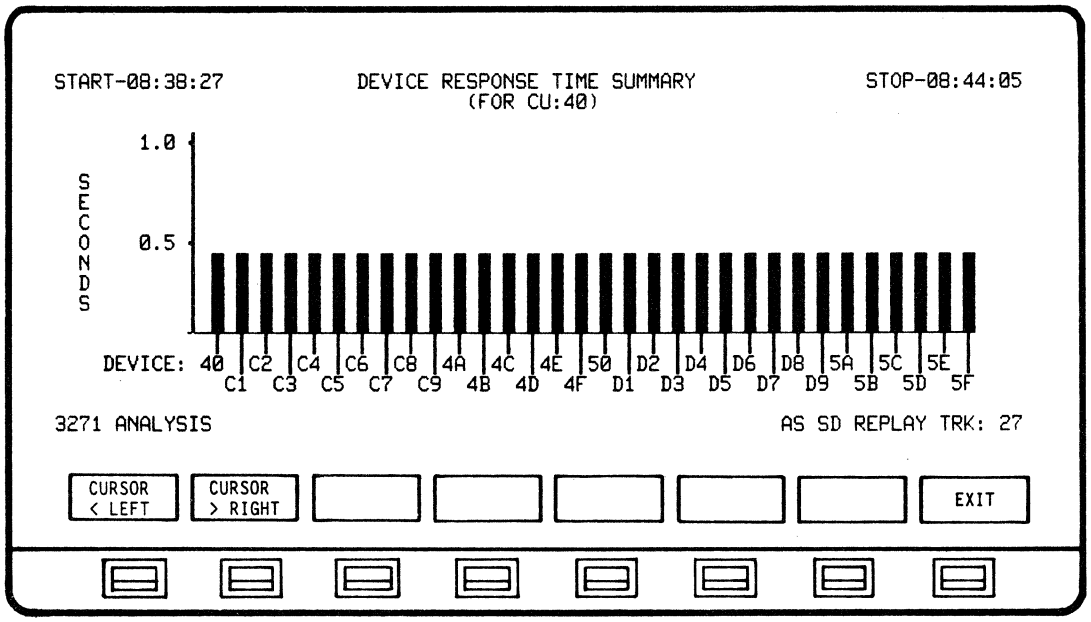
4.13.21 CHANGE REPORT NAME Softkey/Label Display

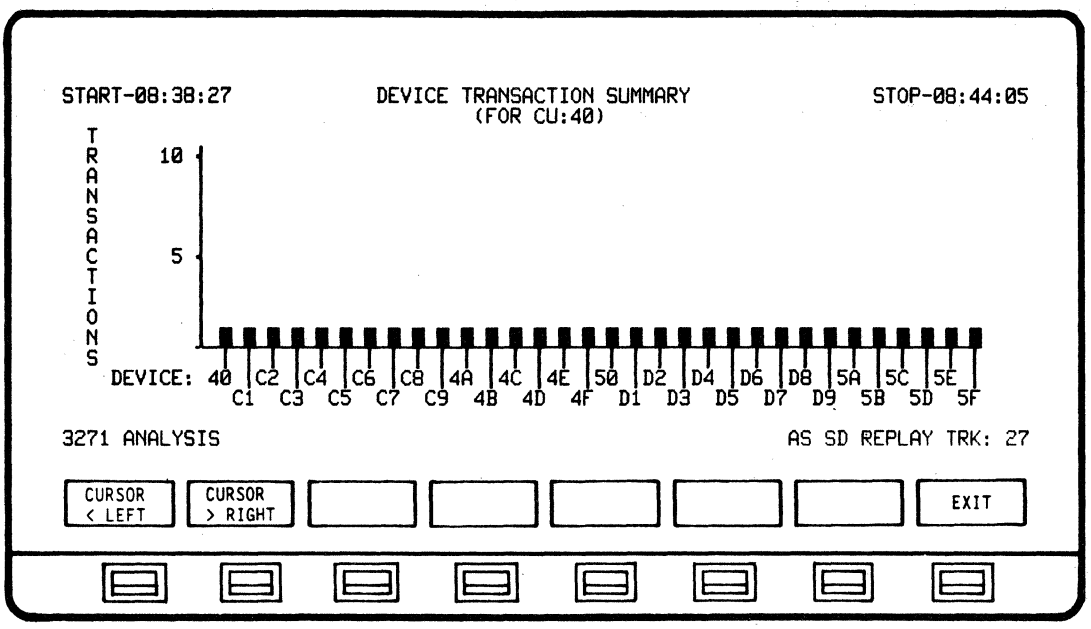


SOFTKEY/LABEL	FUNCTION
CURSOR LEFT <	Moves cursor one (1) character position left on Name line.
CURSOR > RIGHT	Moves cursor one (1) character position right on Name line.
CHANGE CHARACTER	Changes character in cursor location. Characters will cycle sequentitally when softkey is depressed.
DECIMAL MODE 0-9	Selects Decimal Mode (Numbers 0 - 9) for character change.
ALPHA L-CASE ALPHA U-CASE	Selects Lower case alphabetical characters (a-z) for name change. (CHANGE RPT NAME automatically defaults to Upper case characters. To return to Upper case, depress ALPHA L-CASE softkey again.)
SPECIAL CHAR-MODE	Selects Special character mode for change. Holding down softkey causes to cycle sequentially through characters. (Special characters and order of appearance are: SPC ! " # $ % & ' ( )* + , - . / : ; < = > ? @ [\ ] ^ _ ` { | } ~).
ENTER	Enters Name change. (Must be initiated to complete and store Name change.)
EXIT	Return to previous softkey/label display. (CHANGE RPT NAME - Ref 4.13.9) (CHANGE RPT NAME - Ref 4.13.19)

4.13.22 CURSOR MODE Softkey/Label Display (LINE UTILIZATION BY TIME, DEVICE RESPONSE TIME SUMMARY and DEVICE TRANSACTION SUMMARY)

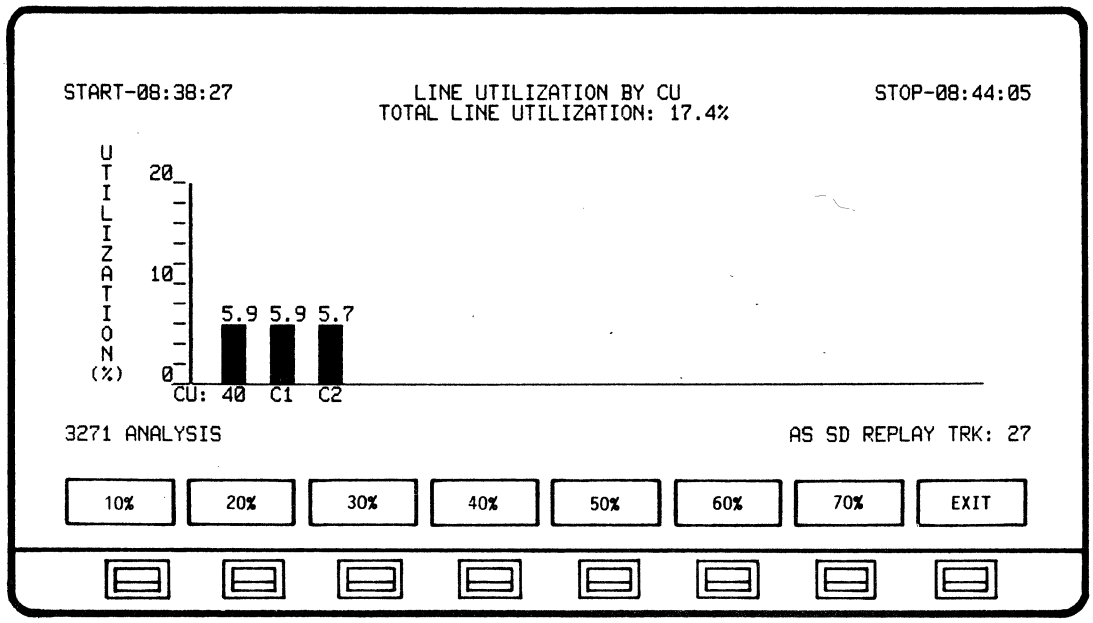






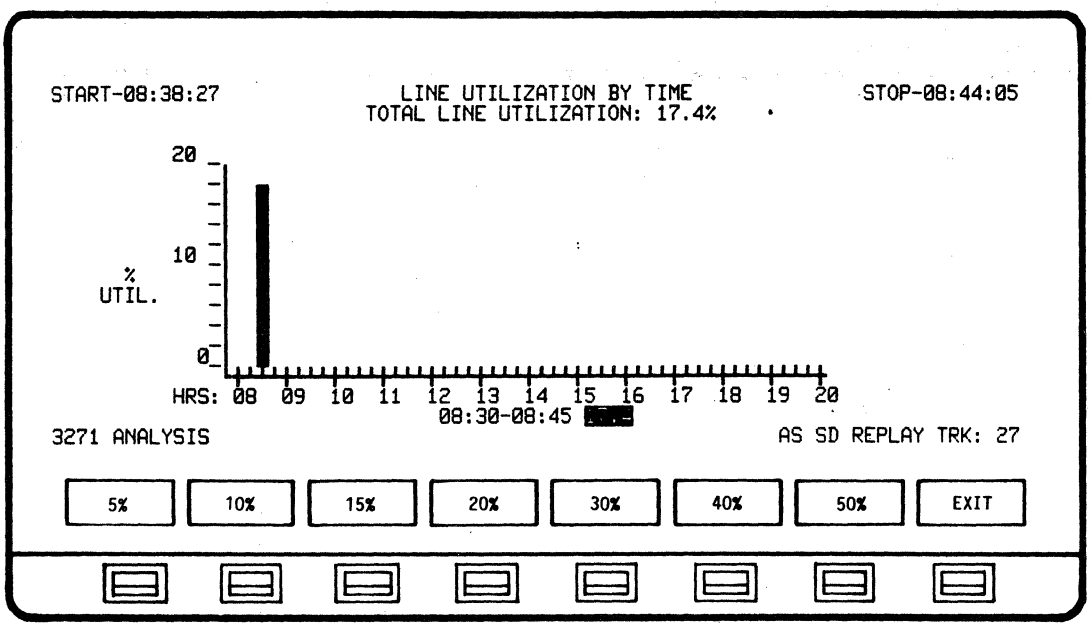
SOFTKEY/LABEL	FUNCTION
CURSOR < LEFT	Scrolls cursor left on bar graph.
CURSOR > RIGHT	Scrolls cursor right on bar graph.
	Not Used
	Not Used
	Not Used
	Not Used
	Not Used
EXIT	Return to previous softkey/label display. (CURSOR MODE - Ref 4.13.6) (CURSOR MODE - Ref 4.13.8) (CURSOR MODE - Ref 4.13.16) (CURSOR MODE - Ref 4.13.18)

4.13.23 CHANGE RANGE Softkey/Label Display (LINE UTILIZATION BY CU)



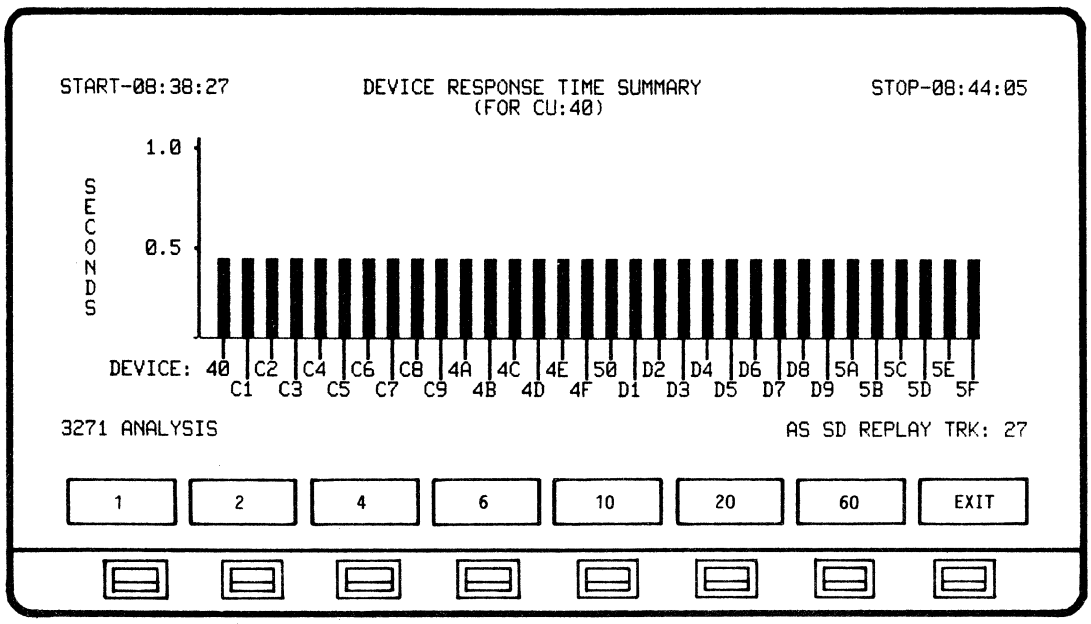
SOFTKEY/LABEL	FUNCTION
10%	Extends bar graph scale to 10%
20%	Extends bar graph scale to 20%
30%	Extends bar graph scale to 30%
40%	Extends bar graph scale to 40%
50%	Extends bar graph scale to 50%
60%	Extends bar graph scale to 60%
70%	Extends bar graph scale to 70%
EXIT	Return to previous softkey/label display. (CHANGE RANGE - Ref 4.13.5) (CHANGE RANGE - Ref 4.13.15)

4.13.24 CHANGE RANGE Softkey/Label Display (LINE UTILIZATION BY TIME)



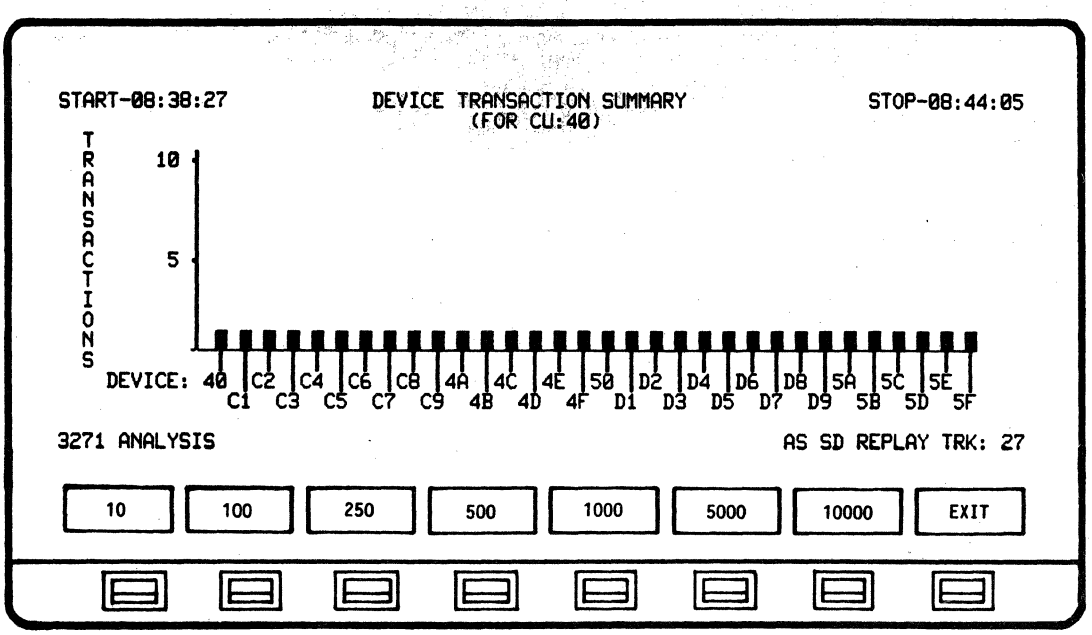
SOFTKEY/LABEL	FUNCTION
5%	Extends bar graph scale to 5%
10%	Extends bar graph scale to 10%
15%	Extends bar graph scale to 15%
20%	Extends bar graph scale to 20%
30%	Extends bar graph scale to 30%
40%	Extends bar graph scale to 40%
50%	Extends bar graph scale to 50%
EXIT	Return to previous softkey/label display. (CHANGE RANGE - Ref 4.13.6) (CHANGE RANGE - Ref 4.13.16)

4.13.25 CHANGE RANGE Softkey/Label Display (DEVICE RESPONSE TIME SUMMARY)



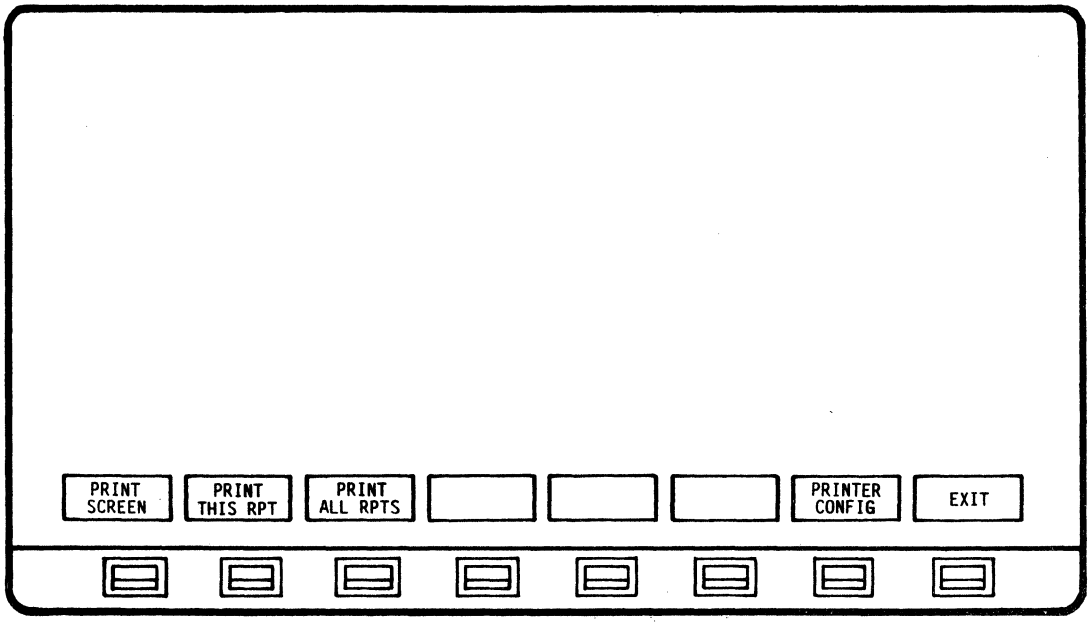
SOFTKEY/LABEL	FUNCTION
1	Extends bar graph scale to 1 second.
2	Extends bar graph scale to 2 seconds.
4	Extends bar graph scale to 4 seconds.
6	Extends bar graph scale to 6 seconds.
10	Extends bar graph scale to 10 seconds.
20	Extends bar graph scale to 20 seconds.
60	Extends bar graph scale to 60 seconds.
EXIT	Return to previous softkey/label display. (CHANGE RANGE - Ref 4.13.8) (CHANGE RANGE - Ref 4.13.18)

4.13.26 CHANGE RANGE Softkey/Label Display (DEVICE TRANSACTION SUMMARY)



SOFTKEY/LABEL	FUNCTION
10	**Extends bar graph scale to 10 transactions.**
100	Extends bar graph scale to 100 transactions.
250	Extends bar graph scale to 250 transactions.
500	Extends bar graph scale to 500 transactions.
1000	Extends bar graph scale to 1000 transactions.
5000	Extends bar graph scale to 5000 transactions.
10000	Extends bar graph scale to 10000 transactions.
EXIT	Return to previous softkey/label display. (CHANGE RANGE - Ref 4.13.8) (CHANGE RANGE - Ref 4.13.18)

4.13.27 PRINT CONTROL Softkey/Label Display



SOFTKEY/LABEL	FUNCTION
PRINT SCREEN	Initiates print-out of data displayed on screen only.
PRINT THIS RPT	Initiates print-out of this complete report only.
PRINT ALL RPTS	Initiates print-out of all reports.
	Not Used
	Not Used
	Not Used
PRINTER CONFIG	Initiates softkey/label display to modify printer configuration. (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display.

5.0 AUTO-SENTRY

5.1 General Description

AUTO-SENTRY is an integral Bisync Analysis function which provides automatic detection of errors or "Alarm" states. An audible Alarm is triggered whenever a pre-determined condition is detected, and Alarm data is stored and accumulated for review (Alarm Report).

AUTO-SENTRY is capable of alarming for:

1). Protocol Errors - (general Alarm) When Analysis is run, protocol error detection is automatic. The user does not have to set-up Alarms for protocol errors.

2). Specific Conditions - The user may set-up, change, and disarm Alarms for available specific conditions. Thresholds for triggering these Alarms may also be selected, changed, and disarmed.

- Receive NAK's (specific Alarm)
- Send Nak's (specific Alarm)
- Line Timeouts (specific Alarm)
- BCC Errors (general Alarm)
- Test Requests (specific Alarm)
- Immediate Response (general Alarm)
- Line Response (general Alarm)
- Line Utilization (general Alarm)

3). Sense and Status Messages - (general Alarm) The user may set-up, change, and disarm for Sense and Status message Alarms.

- Device Busy
- Unit Specify
- Device End
- Transmission Check
- Command Reject
- Intervention Req
- Equipment Check
- Data Check
- Control Check
- Operation Check

4). Leadstate Conditions - (general Alarm) Parameters for triggering these Alarms may be set-up, changed and disarmed.

- HIGH
- LOW
- DON'T CARE

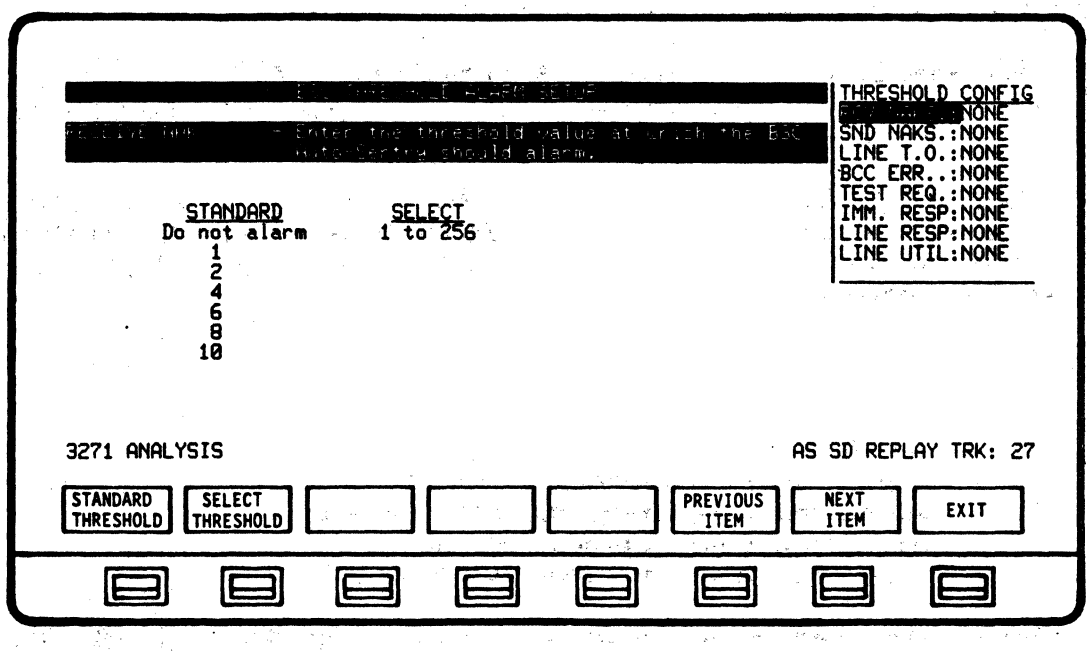
NOTE

A "specific" Alarm is associated with an individual Control Unit. A "general" Alarm is detected for Host and all Control Units (entire line).

5.2 Setting-Up Alarms (Alarm Configuration)

Depressing the SET UP ANALYSIS and then the ALARM CONFIGURATION softkeys initiates a softkey display for setting-up either Threshold Configuration or Sense/Status message Alarms.

5.2.1 Threshold Configuration



A triggering threshold must be established to set-up any of the available specific condition Alarms. Depressing the CONFIG THRESHOLD softkey initiates screen and softkey displays for selecting thresholds.

If the user leaves the ANALYSIS mode in order to review data under on of the other Operating modes (MONITOR or DECODE), the Alarm configuration will be automatically reset to NONE and will have to be reset upon returning to ANALYSIS.

5.2.1.1 Setting-Up Receive and Send Nak Alarms

Receive and Send Nak Alarms are specific Alarms (detected and recorded according to specific Control Units). The user may choose from a set of standard thresholds or select any threshold from 1 to 256. An AUTO-SENTRY Alarm is sounded and recorded on the Alarm Report whenever the selected threshold is exceeded. The threshold is reset and the Alarming process continues until Analysis is stopped.

5.2.1.2 Setting-Up Line Timeout Alarms

Timeout Alarms are specific Alarms (detected and recorded according to specific Control Units). The user may choose from a set of standard thresholds or select any threshold from 1 to 256. An AUTO-SENTRY Alarm is sounded and recorded on the Alarm Report whenever the selected threshold is exceeded. The threshold is reset and the Alarming process continues until Analysis is stopped.

5.2.1.3 Setting-Up BCC Error Alarms

BCC Error Alarms are general Alarms (detected and recorded for entire line). The user may choose from a set of standard thresholds or select any threshold from 1 to 256. An AUTO-SENTRY Alarm is sounded and recorded on the Alarm Report whenever the selected threshold is exceeded. The threshold is reset and the Alarming process continues until Analysis is stopped.

Note

CRC-16 must be entered in the line configuration for BCC Errors to be detected.

5.2.1.4 Setting-Up Test Request Alarms

Test Request Alarms are specific Alarms (detected and recorded according to specific Control Units). The user may choose from a set of standard thresholds or select any threshold from 1 to 256. An AUTO-SENTRY Alarm is sounded and recorded on the Alarm Report whenever the selected threshold is exceeded. The threshold is reset and the Alarming process continues until Analysis is stopped.

5.2.1.5 Setting-Up Line Response Alarms

A Line Response Time Alarm may be set up with a time threshold (from 1 to 240 seconds).

Line Response Alarms are based on fifteen-minute time intervals which begin when RUN ANALYSIS is initiated. The Line Response Times over the entire line are averaged for each 15 minute interval. When the average exceeds the pre-set threshold, an Alarm is sounded and recorded on the Alarm Report (as a general Alarm).

NOTE

Whenever the real-time clock in the AUTOSCOPE reaches a quarter-hour mark (00:00, 00:15, 00:30, or 00:45), a new Alarm calculation period begins.Due to the time base of the Response Time Alarms, the user should be aware that results of the first and last time-intervals of Analysis might not have been based on a full 15 minute time interval.

5.2.1.6 Setting-Up Immediate Response Alarms

An Immediate Response Time Alarm may be set up with a time threshold (from 1 to 240 seconds).

Immediate Response Alarms are based on each or any one transaction which begin when RUN ANALYSIS is initiated. When the designated time exceeds the pre-set threshold, an Alarm is sounded and recorded on the Alarm Report (as a general Alarm).

5.2.1.7 Setting-Up Line Utilization Alarms

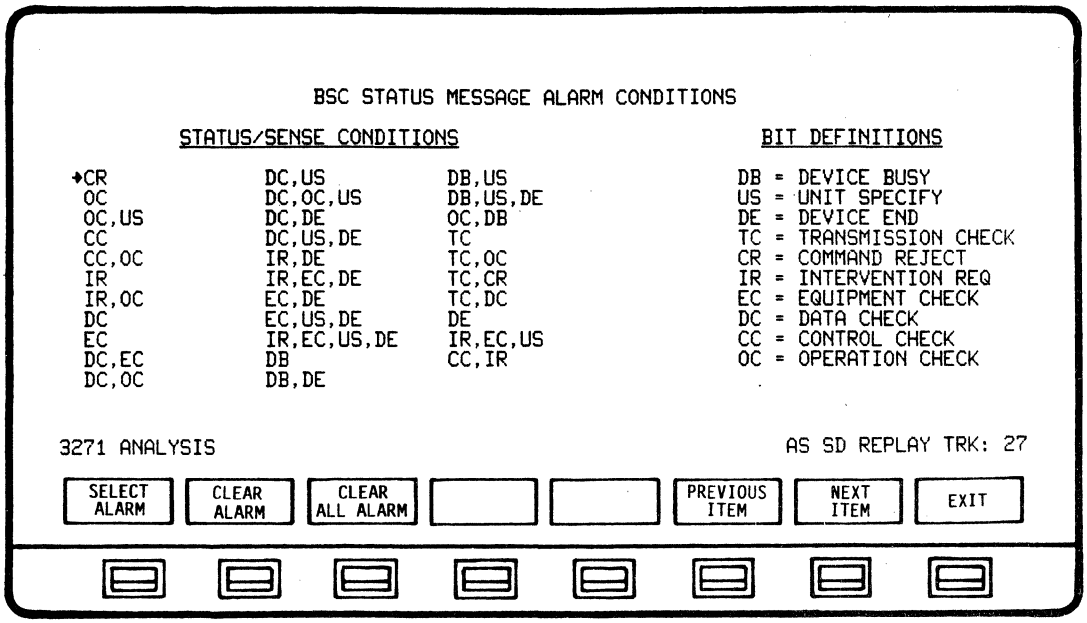
A Line Utilization Alarm may be set up with a percentage threshold (from 5% to 50%).

Line Utilization Alarms are based on fifteen-minute time intervals which begin when RUN ANALYSIS is initiated. The percentage of line utilization over the entire line is averaged for each 15 minute interval. When the average exceeds the pre-set threshold, an Alarm is sounded and recorded on the Alarm Report (as a general Alarm).

NOTE

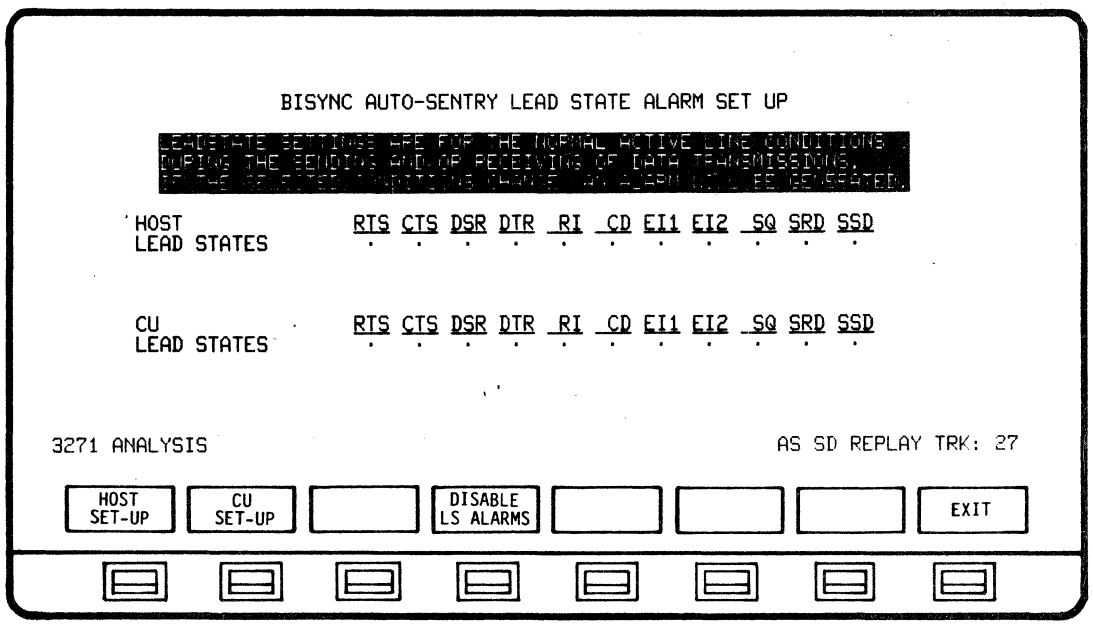
Whenever the real-time clock in the AUTOSCOPE reaches a quarter-hour mark (00:00, 00:15, 00:30, or 00:45), a new Alarm calculation period begins.Due to the time base of the Line Utilization Time Alarms, the user should be aware that results of the first and last time-intervals of Analysis might not have been based on a full 15 minute time interval.

5.2.2 Sense and Status Message Alarm Set-Up



Alarms for any Bisync sense or status messages may be set-up prior to running Analysis. Depressing the CONFIG S/S BYTE softkey initiates a screen and softkey display for selecting any combination of sense and status message Alarms. When Analysis is run, an Alarm is sounded and recorded in the Alarm Report (as a general Alarm) whenever a pre-selected message is detected.

5.2.3 Leadstate Alarm Set-Up



Alarm parameters for Leadstate conditions are selected by the user prior to running Analysis. Parameters for the Alarm conditions are HIGH, LOW or DON'T CARE and can be set for both Send and Receive messages. Depressing the CONFIG LEADSTATE softkey on the ALARM CONFIGURATION display initiates a softkey/label display to select the Alarm parameters. When a Leadstate parameter error occures, an audible Alarm is sounded and recorded in the Alarm Report (as a General Alarm).

NOTE

Leadstate Alarm conditions will be based on the parameters designated by the user - not by message/transaction error.

5.2.4 Running Alarms

When the AUTOSCOPE Application Program (System Disk) is loaded, the system automatically defaults to an ALARM ON condition. Whenever a protocol error or other pre-selected Alarm condition occures, an audible Alarm is sounded, the Alarm Report is updated, and a special message appears:

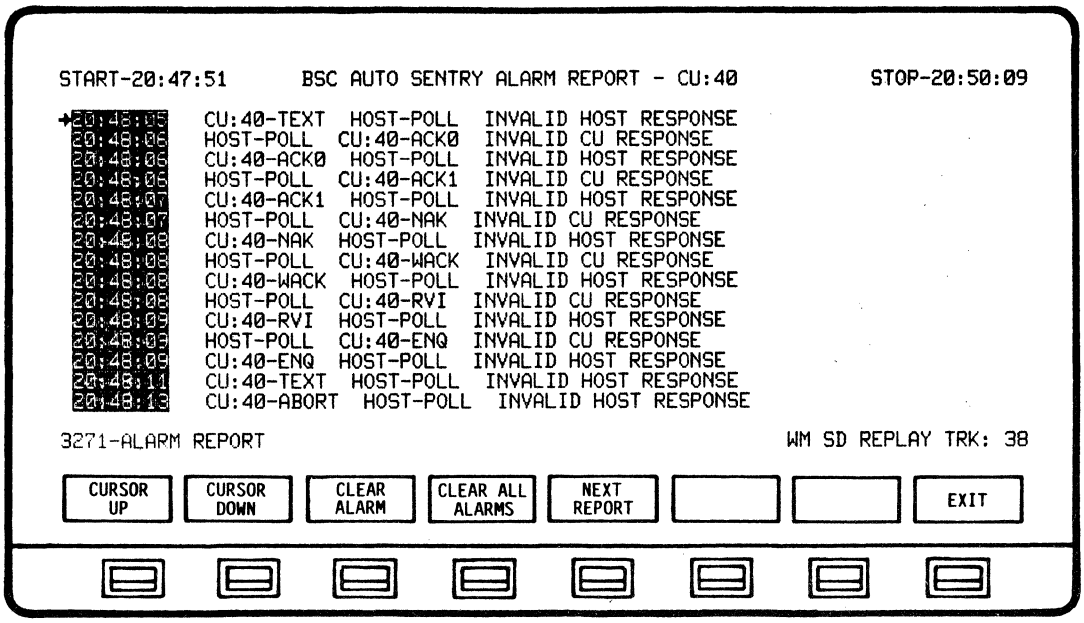
AUTO-SENTRY ALARM DETECTED

NOTE

The user may disarm the audible Alarm tone by depressing the SYSTEM PARAMETERS and then ALARM OFF Configuration Control softkeys.

Pre-selected Alarms are automatically detected when RUN ANALYSIS is initiated. Protocol errors are detected, Alarmed, and recorded automatically during Analysis. After each Alarm is sounded and recorded, the threshold for that particular Alarm is reset and Alarming continues. Alarms may be disarmed or thresholds may be re-configured while in the STOP ANALYSIS mode.

5.2.5 Alarm Report



The Alarm Report may be accessed by depressing the ALARM REPORT softkey while in the RUN ANALYSIS or STOP ANALYSIS modes. Softkeys are displayed which provide cursor control and the ability to CLEAR ALARMS. If no Alarms have been detected, a special message appears:

NO ALARMS DETECTED

The Alarm Report displays the time detected, Alarm condition description, and threshold setting for all Alarms detected. General Alarms are presented first on the Alarm Report. The NEXT REPORT softkey initiates the display of Control Unit specific Alarms according to individual Control Units.

A maximum of 15 Alarms per Control Unit can be stored on the Alarm Report. A maximum of 102 Alarms for the entire line (Alarm buffer limit) can be stored on the Alarm Report, and are allocated dynamically as they are detected. Alarm detection will stop if the Alarm buffer limit is reached. The user can prevent cessation of Alarming by accessing the Alarm Report while in the RUN ANALYSIS mode and clearing Alarms from the Alarm Report as they are recorded and reviewed.

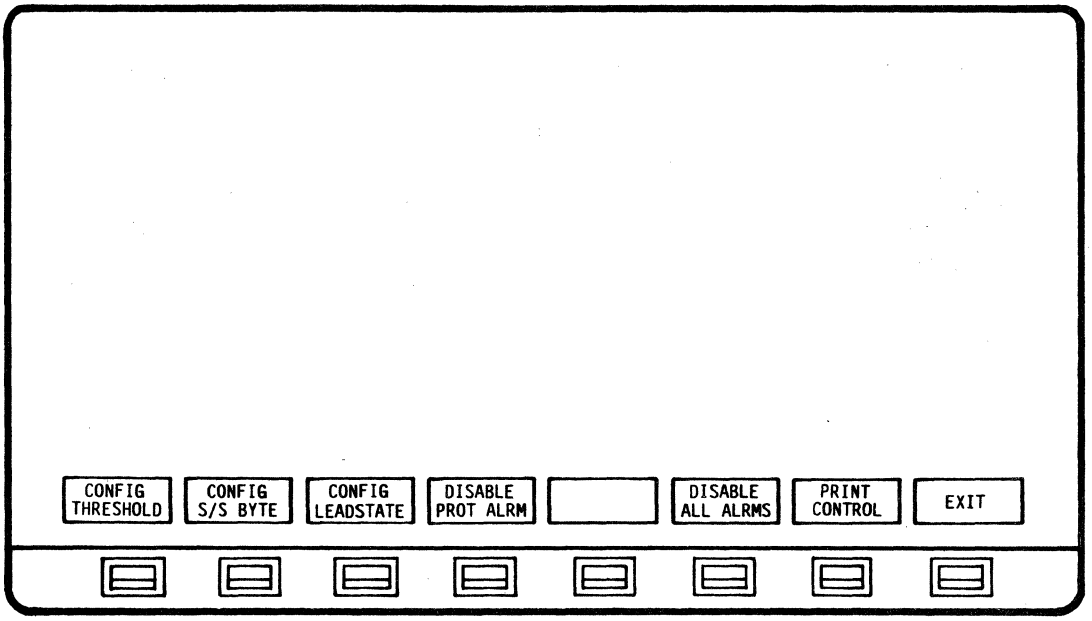
When RUN ANALYSIS is initiated, the Alarm Report is cleared and accumulates anew.

NOTE

If the user leaves the ANALYSIS mode in order to review data under one of the other Operating modes (MONITOR or DECODE), the Alarm configuration will be automatically reset to NONE and will have to be reset upon returning to ANALYSIS. However, the previously-recorded Alarm Report will remain until RUN ANALYSIS is initiated.

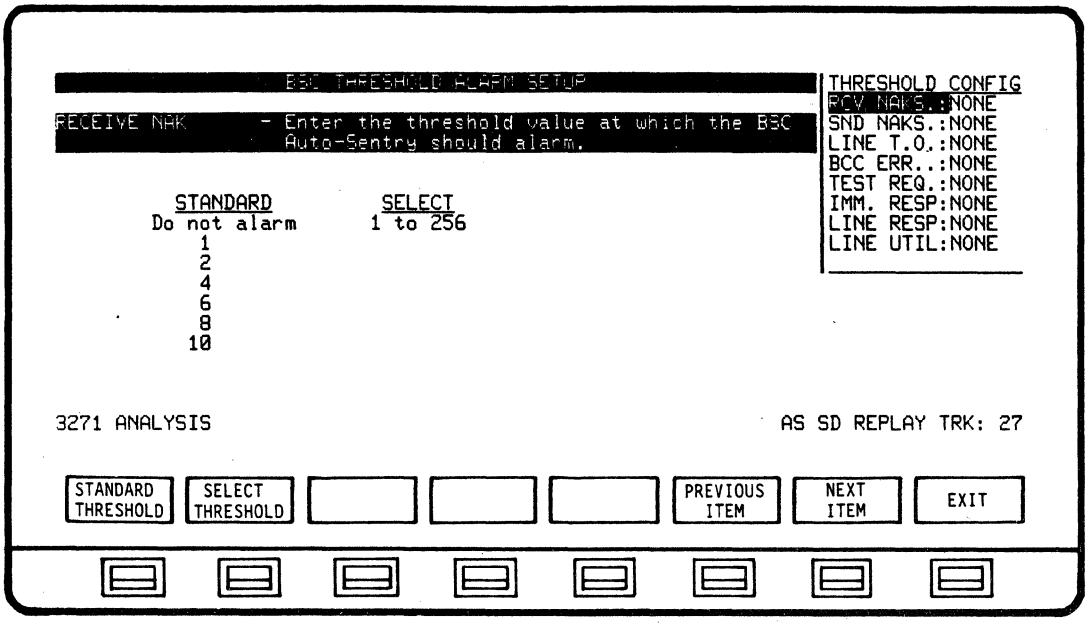
5.3 Bisync Auto Sentry Softkey/Label Descriptions

5.3.1 ALARM CONFIGURATION Softkey/Label Display



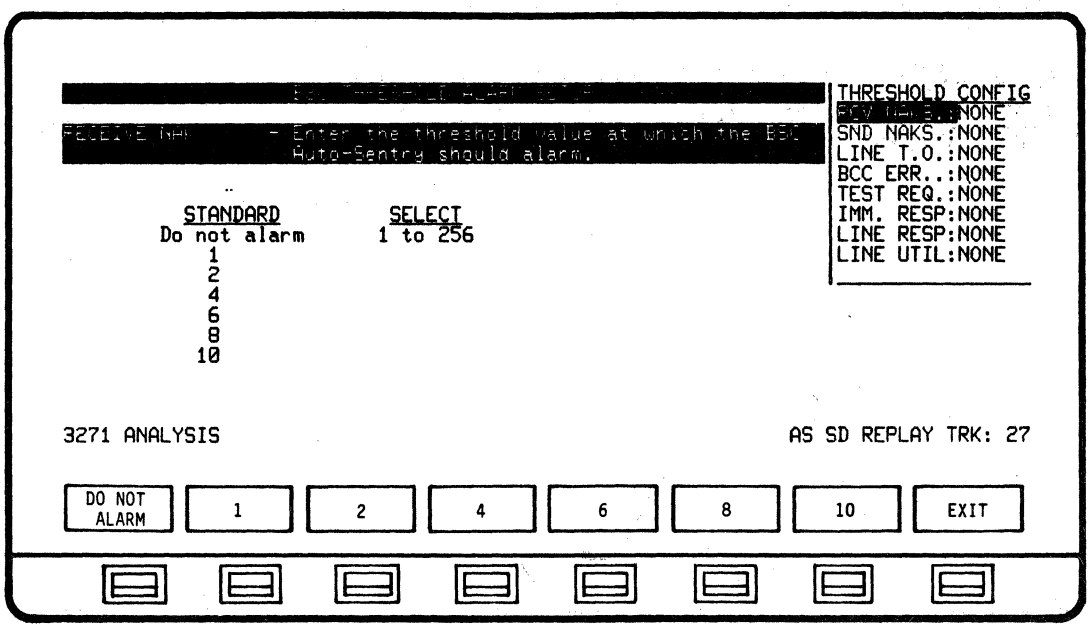
SOFTKEY/LABEL	FUNCTION
CONFIG THRESHOLD	Sets-up softkey/label display to configure Alarm thresholds (Configuration Threshold Table). (Ref 5.3.2 - CONFIG THRESHOLD)
CONFIG S/S BYTE	Sets-up softkey/label display to configure Sense and Status Message Alarms. (Ref 5.3.7 - CONFIG S/S BYTE)
CONFIG LEADSTATE	Sets-up softkey/label display to configure Leadstates. (Ref 5.3.8 - CONFIG LEADSTATE)
DISABLE PROT ALRM / ENABLE PROT ALRM	Selects Disable or Enable of Protocol Alarms. (Flip-flop type action.)
	Not Used
DISABLE ALL ALRMS / ENABLE ALL ALRMS	Selects Disable or Enable of all Alarms. (Flip-flop type action.)
PRINT CONTROL	Sets-up softkey/label display to print-out Alarm data. (Ref 5.3.11 - PRINT CONTROL) (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display. (ALARM CONFIG - Ref 4.13.2)

5.3.2 CONFIG THRESHOLD Softkey/Label Display



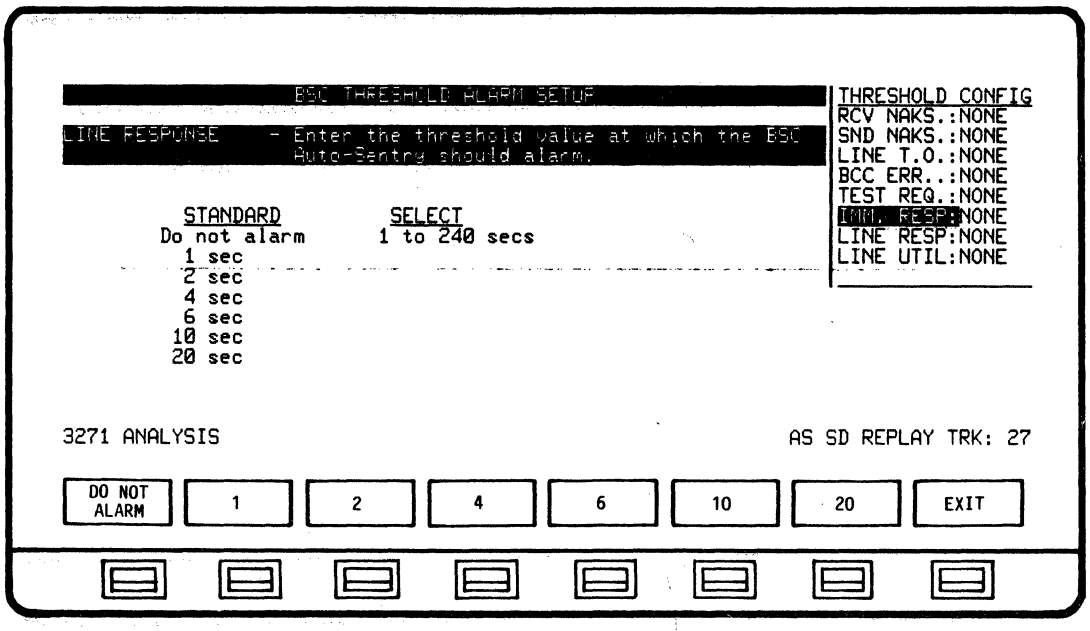
SOFTKEY/LABEL	FUNCTION
STANDARD THRESHOLD	Sets-up softkey/label display to select from standard alarm thresholds.
SELECT THRESHOLD	Sets-up softkey/label display to select desired alarm thresholds.
	Not Used
	Not Used
	Not Used
PREVIOUS ITEM	Moves cursor to select previous item in configuration table.
NEXT ITEM	Moves cursor to select next item in configuration table.
EXIT	Return to previous softkey/label display. (CONFIG THRESHOLD - Ref 5.3.1)

5.3.3 STANDARD THRESHOLD Softkey/Label Display (RECEIVE NAK, SEND NAK, CU TIMEOUT, BCC ERROR and TEST REQUEST)



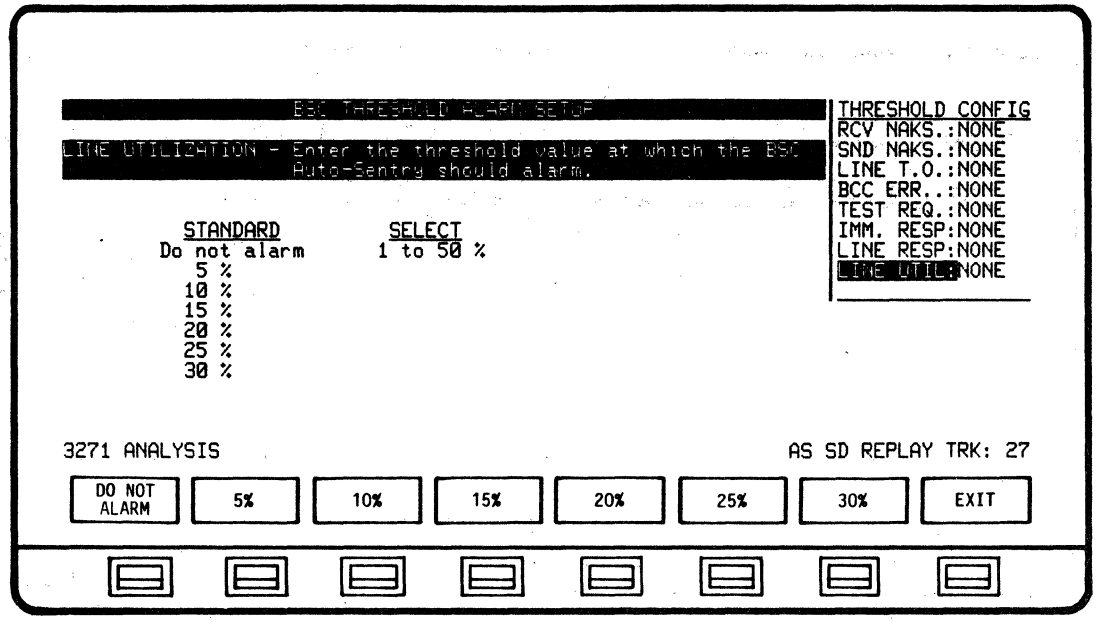
SOFTKEY/LABEL	FUNCTION
DO NOT ALARM	No Alarm for selected condition.
1	Sets-up threshold of 1 occurence of condition.
2	Sets-up threshold of 2 occurences of condition.
4	Sets-up threshold of 4 occurences of condition.
6	Sets-up threshold of 6 occurences of condition.
8	Sets-up threshold of 8 occurences of condition.
10	Sets-up threshold of 10 occurences of condition.
EXIT	Return to previous softkey/label display. (STANDARD THRESHOLD - Ref 5.3.2)

5.3.4 STANDARD THRESHOLD Softkey/Label Display (LINE RESPONSE, IMMEDIATE RESPONSE)



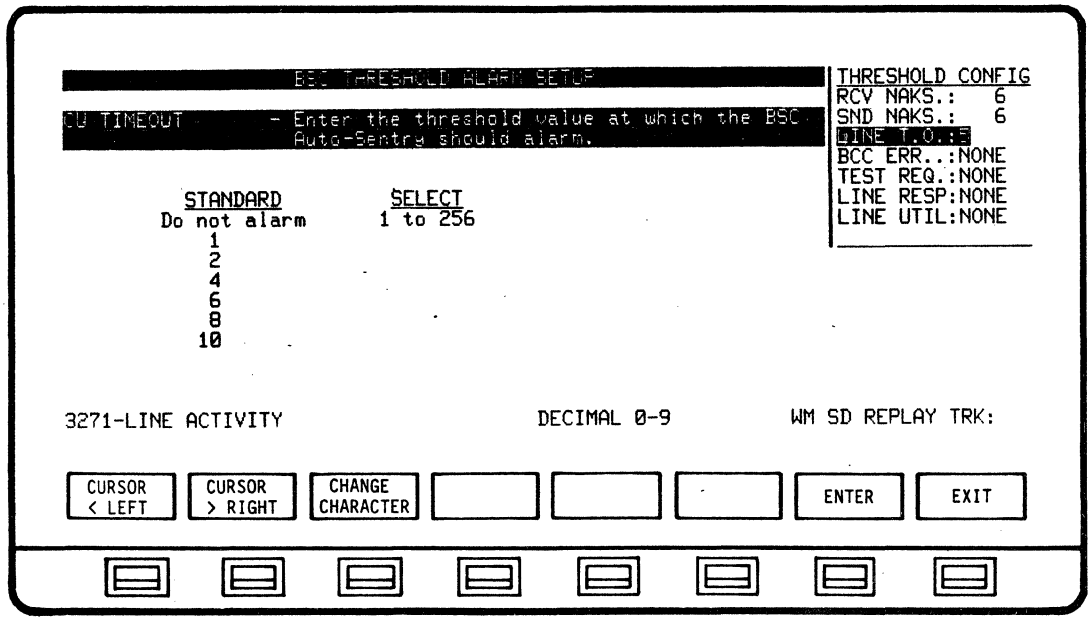
SOFTKEY/LABEL	FUNCTION
DO NOT ALARM	No Alarm for selected condition.
1	Sets-up threshold of 1 second line response.
2	Sets-up threshold of 2 seconds line response.
4	Sets-up threshold of 4 seconds line response.
6	Sets-up threshold of 6 seconds line response.
10	Sets-up threshold of 10 seconds line response.
20	Sets-up threshold of 20 seconds line response.
EXIT	Return to previous softkey/label display. (STANDARD THRESHOLD - Ref 5.3.2)

5.3.5 STANDARD THRESHOLD Softkey/Label Display (LINE UTILIZATION)



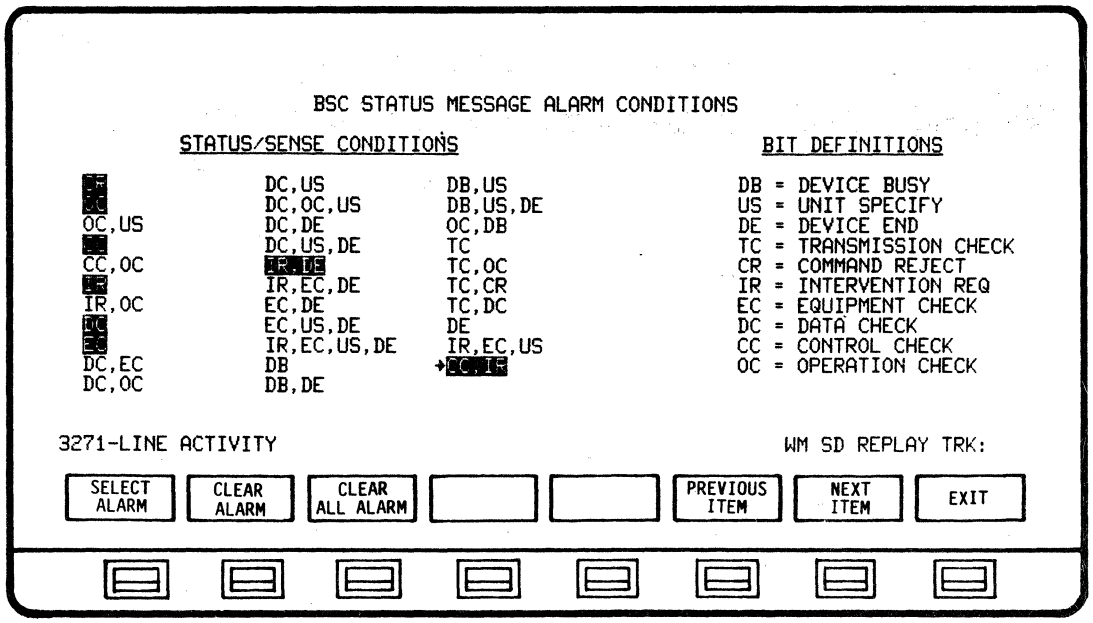
SOFTKEY/LABEL	FUNCTION
DO NOT ALARM	No Alarm for selected condition.
5%	Sets-up threshold of 5% line utilization.
10%	Sets-up threshold of 10% line utilization.
15%	Sets-up threshold of 15% line utilization.
20%	Sets-up threshold of 20% line utilization.
25%	Sets-up threshold of 25% line utilization.
30%	Sets-up threshold of 30% line utilization.
EXIT	Return to previous softkey/label display. (STANDARD THRESHOLD - Ref 5.3.2)

5.3.6 SELECT THRESHOLD Softkey/Label Display



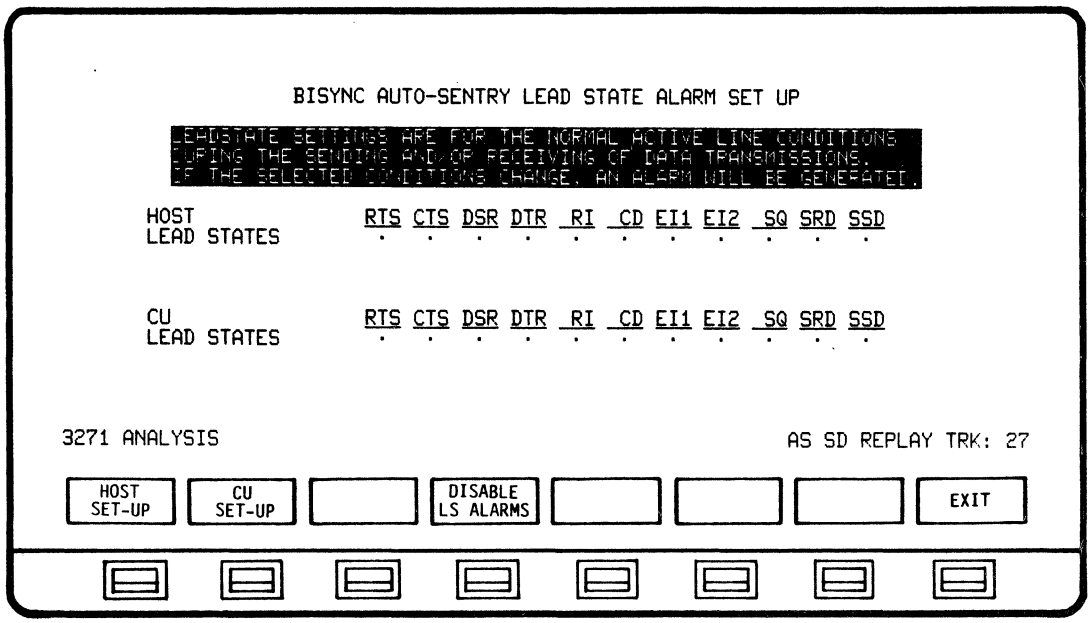
SOFTKEY/LABEL	FUNCTION
CURSOR < LEFT	Moves cursor left one character position.
CURSOR > RIGHT	Moves cursor right one character position.
CHANGE CHARACTER	Cycles sequentially through decimal characters.
	Not Used
	Not Used
	Not Used
ENTER	Enters selected threshold configuration. This softkey must be depressed for selection to be executed.
EXIT	Return to previous softkey/label display. (SELECT THRESHOLD - Ref 5.3.3)

5.3.7 CONFIG S/S BYTE Softkey/Label Display (STATUS/SENSE CONDITION Alarm set-up)



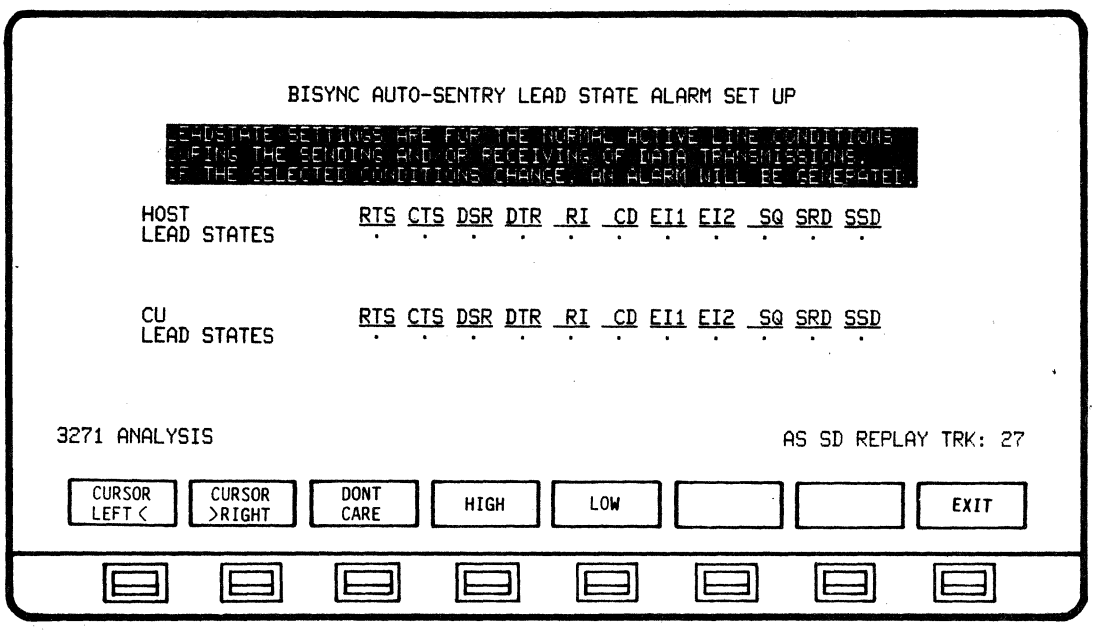
SOFTKEY/LABEL	FUNCTION
SELECT ALARM	Initiates Alarm for first occurence of selected message.
CLEAR ALARM	Removes Alarm for selected message.
CLEAR ALL ALARM	Removes Alarms from all messages.
	Not Used
	Not Used
PREVIOUS ITEM	Moves cursor (arrow) up one position on Status/Sense Condition display.
NEXT ITEM	Moves cursor (arrow) down one position on Status/Sense Condition display.
EXIT	Return to previous softkey/label display. (CONFIG S/S BYTE - Ref 5.3.1)

5.3.8 CONFIG LEADSTATE Softkey/Label Display



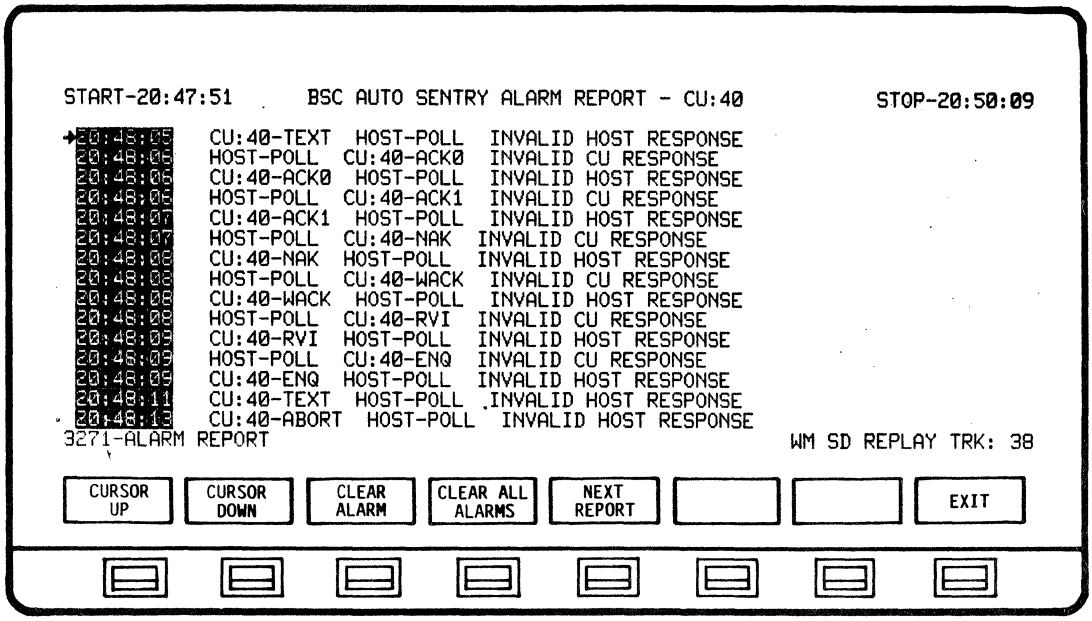
SOFTKEY/LABEL	FUNCTION
HOST SET-UP	Sets-up softkey/label display to select Host Leadstate alarm parameters. (Ref 5.3.9 - HOST SET-UP)
CU SET-UP	Sets-up softkey/label display to select CU Leadstate alarm parameters. (Ref 5.3.9 - CU SET-UP)
	Not Used
DISABLE LS ALARMS / ENABLE LS ALARMS	Enables or disables leadstate alarms. (Flip-flop type action)
	Not Used
	Not Used
	Not Used
EXIT	Return to previous softkey/label display. (CONFIG LEADSTATE - Ref 5.3.1)

5.3.9 HOST/CU SET-UP Leadstate Softkey/Label Display



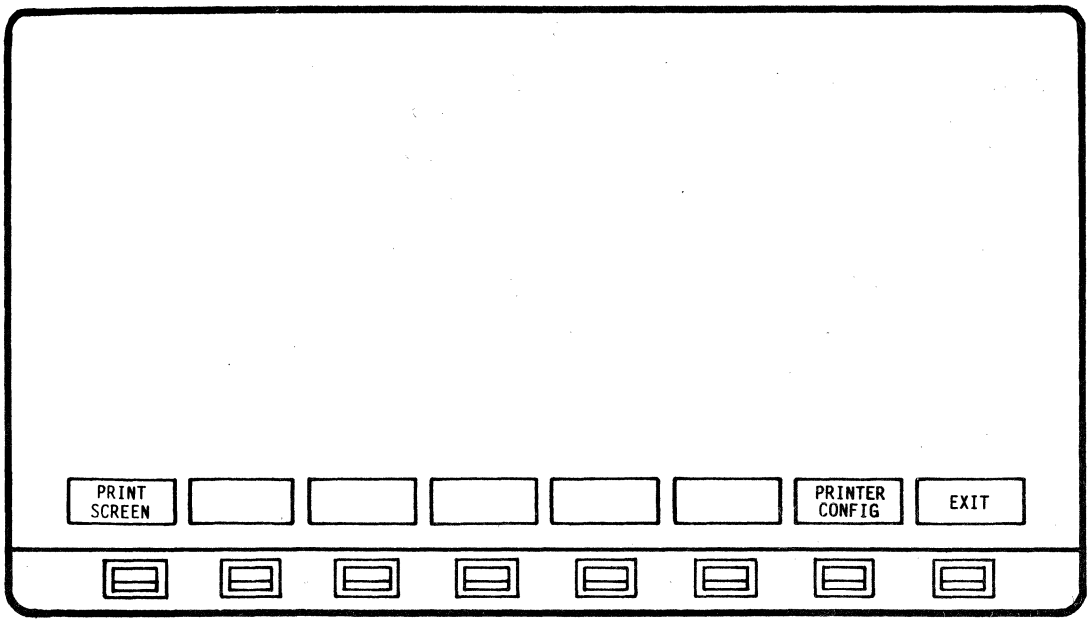
SOFTKEY/LABEL	FUNCTION
CURSOR LEFT <	Moves highlighted cursor one position left on leadstate settings.
CURSOR >RIGHT	Moves highlighted cursor one position right on leadstate settings.
DONT CARE	Selects DONT CARE as the alarm parameter for the designated leadstate.
HIGH	Selects the signal HIGH as the alarm parameter for the designated leadstate.
LOW	Selects the signal LOW as the alarm parameter for the designated leadstate.
	Not Used
	Not Used
EXIT	Return to previous softkey/label display. (HOST SET-UP - Ref 5.3.8) (CU SET-UP - Ref 5.3.8)

5.3.10 ALARM REPORT Softkey/Label Display



SOFTKEY/LABEL	FUNCTION
CURSOR UP	Moves cursor (arrow) up one position on ALARM REPORT display.
CURSOR DOWN	Moves cursor (arrow) down one position on ALARM REPORT display.
CLEAR ALARM	Clears Alarm on display indicated by cursor.
CLEAR ALL ALARMS	Clears all Alarms displayed.
NEXT REPORT	Pages to additional Alarm Reports (if available).
	Not Used
	Not Used
EXIT	Return to previous softkey/label display.

5.3.11 PRINT CONTROL Softkey/Label Display



SOFTKEY/LABEL	FUNCTION
PRINT SCREEN	Initiates print-out of data displayed on screen only.
	Not Used
	Not Used
	Not Used
	Not Used
	Not Used
PRINTER CONFIG	Initiates display to change printer configuration. (Ref 3.10 - Printer Configuration - User Manual)
EXIT	Return to previous softkey/label display. (PRINT CONTROL - Ref 5.3.1)