

Reference

Tektronix



1230

Logic Analyzer

070-6880-02



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INTRODUCTION

This reference guide provides a summary of the 1230 menus. It assumes that you are already familiar with the instrument's general operating characteristics and capabilities. For detailed operating information, refer to the 1230 Logic Analyzer Operator's Manual.

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MENU OVERVIEW

The 1230 Logic Analyzer's operation is controlled by setup, data, and utility menu parameters. Setup menus let you control data acquisition and storage. Data menus let you specify how data is displayed. Utility menus let you store setups, adjust system settings such as screen intensity, and control any installed options.

Moving Between Menus

To call up a menu, press MENU to call the Main menu, then press the hexadecimal key corresponding to the menu you want. You can also use the cursor keys to choose the menu you want, then press ENTER to call up the menu.

On-line Information

The 1230 has on-line notes, viewports, and menu bars to help you use analyzer features quickly and easily. At the bottom of each analyzer menu, a bar lists the keys that control menu features. If the menu has more than one menu bar, press F (for Function) to cycle through the menu bars. Some menus also show a viewport in the lower part of the screen that gives information about the field the cursor currently highlights. If you want more in-depth information, press NOTES, and the analyzer calls up a screen of text describing the previously displayed menu.

Common Menu Characteristics

Error and prompt messages are displayed in a box that pops up in the center of the screen. You will be prompted to confirm any operation that affects parameters in other menus.

The field the cursor is currently on is shown in inverse video (dark characters on a light background). Use the cursor keys to move the cursor.

The top line of every menu displays the current date and time (you can set these values in the System Settings menu) and the name of the current acquisition setup. If there is an asterisk before the setup name, the menu was changed since it was last stored in the Storage menu.

Changing Menu Fields

Analyzer menus have select fields and fill-in fields. For select fields, cycle through the available selections to choose the parameter you want. For fill-in fields, you use an editor to enter the value you want from the keypad (for example, a channel group name or a binary condition word definition). When the cursor is on the field you want to change, the menu bar at the bottom of the screen tells you which keys to press to make your change.

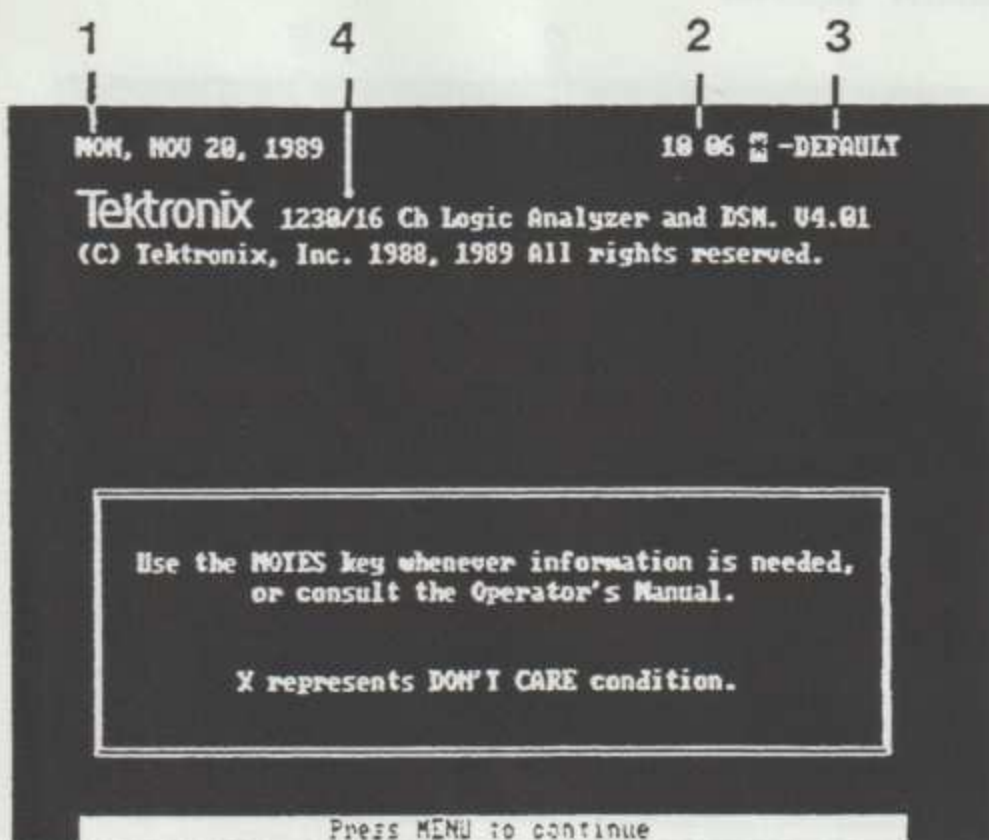
The way you edit fields depends on which menu you're working in. For example, in the Conditions menu, you can enter a condition word value as soon as you scroll the cursor to the condition word field. To change a channel group name in the Channel Grouping menu, press ENTER when the cursor highlights the name, then enter the value you want from the keypad, using cursor keys to scroll other symbols and characters into the name. To edit traces in the Timing menu, press E. In most cases, you can press ENTER to save your change and return to normal menu functions. In every case, the screen's menu bar tells you which keys to press to call up the editor, enter the new values, and exit the editor.

Restoring the Default Setup

When the 1230 is turned on, it has the same setup as when it was last turned off. Sometimes it's easier to make a new setup from the default setup instead of working from the old acquisition setup. To restore the default setup parameters, firmly press NOTES and ENTER at the same time (to reset the 1230), then press D (for default).

Power Up

INITIALIZATION MENU



The Initialization menu is the first menu displayed when the 1230 is powered up. It tells you how many channels your instrument is configured for and the version of firmware installed. Like all 1230 screens, it lists the current date, time, and setup at the top.

- 1 **Current date.** You can set this parameter in the System Settings menu.
- 2 **Current time.** You can set this value in the System Settings menu.
- 3 **Setup name.** The name of the currently loaded acquisition setup. If there is an asterisk before the name, the setup was changed since it was last stored in the Storage menu.
- 4 **Analyzer configuration.** Identifies the number of channels installed in the 1230, and also lists the version number for the installed firmware.

Menu Access

MAIN MENU

1	2	3
SETUP	DATA	UTILITY
0 Timebase	6 Mem Select	B Storage
1 Channel Groups	7 State	C Sys Settings
2 Trigger Spec	8 Disassembly	D RS232C
3 Conditions	9 Timing	E Printer Port
4 Run Control		

Select Screen: Hex Key or \leftarrow \rightarrow for cursor, then ENTER

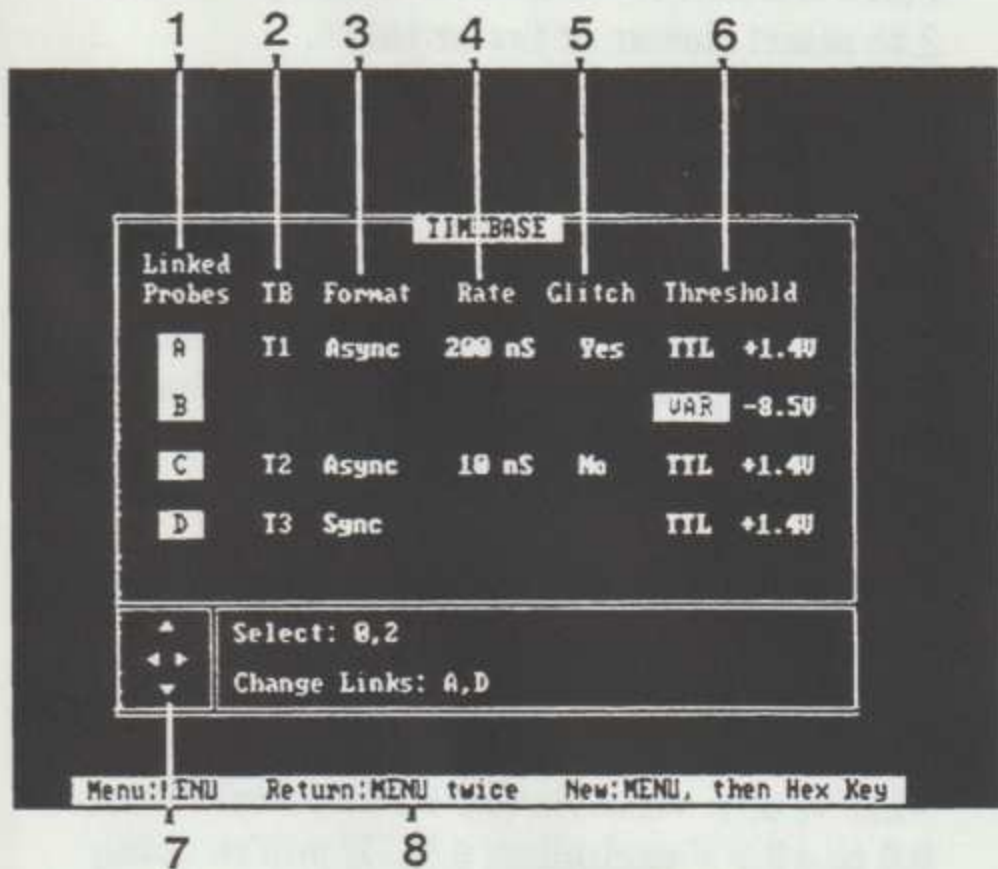
4

The Main menu (displayed when you press the MENU key or when you press D to load the default settings) gives you access to the other 1230 menus. The menus available depend on the options installed in your 1230. To call up any of the following menus, press the hexadecimal key associated with the menu or move the cursor to the menu name and press ENTER.

- 1 **Setup menus.** Control data acquisition and storage.
- 2 **Data menus.** Control how data is displayed.
- 3 **Utility menus.** Control installed options, adjust system settings (such as screen intensity), and store acquisition setups for later use.
- 4 **Menu bar.** Lists the keys to press to use menu features.

Setup

TIMEBASE MENU



The Timebase menu lets you specify the number and type of timebases used to control data acquisition. It also lets you enable glitch detection and set the acquisition probe's threshold voltage.

- 1 Probe links.** Highlighting shows how probes are linked together (linking probes puts them in the same timebase). Press A or D to cycle through available probe links.
- 2 Timebase.** This field lists the timebase for each group of probes you link together. In this example, probes A and B are linked in timebase T1, probe C is in timebase T2, and probe D is in timebase T3. This field automatically changes when you change the probe links. You cannot select this field.
- 3 Sampling clock format.** You can choose asynchronous (Async) and synchronous (Sync) sampling formats. Press 0 or 2 to select the format.

- 4 Sampling rate.** If you're acquiring data asynchronously, you can choose an acquisition rate between 10 ns and 40 ms. Place the cursor on this field and press 0 or 2 to select slower or faster rates.
- 5 Glitch capture.** The 1230 lets you capture glitches if the synchronous sampling rate is at or under 25 MHz (40 ns). When glitches are turned on, the analyzer acquires data only on the lower 8 bits of the probe: bits 0-7. To turn glitches on and off, place the cursor on the field and use the 0 key to toggle between Yes and No.
- 6 Threshold voltage.** If you're using a P6444 probe, you can set the voltage threshold at which the 1230 recognizes a data high: HCMOS +2.5 V, ECL -1.3 V, TTL +1.4 V, or a variable (VAR) threshold from -9.0 to +9.0 V excluding 0 V. If you're using a P6443 probe, the threshold is TTL +1.4 V.
- 7 Menu bar.** Tells you which keys to press to change Timebase menu parameters.

Setup

CHANNEL GROUPING MENU

1	3	4	5	6	7	2
MON	MAR 2	, 1988	Channel Grouping	12:23	-DEFAULT	
Group	Ra	lix	Pol	1B	Channel	Definitions
DAT	HEX	+	T1	AAAAAAAAAAAAAAAA	1111110000000000	5432109876543210
CPB	OCT	+	T1	BBBBBBBB	00000000	76543210
GPC	BIN	+	T1	CCCCCCCC	00000000	76543210
CPD	HEX	+	T1	DDDDDDDD	00000000	76543210
Probe	UNUSED CHANNELS					
A						
B	15	14	13	12	11	10 09 08
C	15	14	13	12	11	10 09 08
D	15	14	13	12	11	10 09 08
Cursor:	▲▼	←				Select:8,2

8 9

The Channel Grouping menu lets you arrange channels for triggering and data display in ways that make sense for your application.

- 1 Menu header.** Gives the menu name, the current date, time, and setup name.
- 2 Asterisk.** If you made changes to the setup since you last stored it in the Storage menu, the 1230 puts an asterisk before the setup name.
- 3 Group name.** The channel group name can be up to three characters long. Move the cursor to the name field and press ENTER to change the name. You can then enter keypad characters directly and use ▼ and ▲ to cycle through other characters and symbols. Press ENTER again when you have finished changing the name.

- 4 **Radix.** This field sets the input radix. You must use the radix selected in this menu to define conditions in the Conditions menu. You can specify hexadecimal (HEX), binary (BIN), or octal (OCT) radices. Press 0 or 2 to select the radices.
- 5 **Polarity.** You can select positive true (+) or negative true (-) polarity.
- 6 **Timebase.** This field shows the timebase for all channels in the group. When you put the first channel in a blank group, the analyzer automatically updates this field to reflect the channel's timebase. You can then add only channels also in that timebase. You cannot change this field.
- 7 **Channel definitions.** You can add, delete, and change the order of channels assigned to each group. The only constraint is that channels must be in the same timebase to be assigned to the same group.

To insert a channel, place the cursor on the field, press 1, then enter the complete channel number (for example, A07).

To delete a channel, place the cursor on it and press 0. Enter a channel number directly to overwrite an existing channel number. Press DON'T CARE to abort a change you're currently making.

Pressing F restores the default channel groups (all available channels from each probe in its own group).

- 8 **Unused channels list.** Channels you delete from channel groups are displayed here. If a channel is dimmed, it is unavailable because of the current sampling rate or glitch selection.
- 9 **Menu bar.** Tells you which keys to press to use menu features. This bar changes depending on the field the cursor highlights.

Setup

TRIGGER SPEC MENU

Level	Condition	Count	Action	Dest
1	IF [Trigin]*[0001]		THEN [NOP] & [CONTIN]	
2	IF [Clock]*[0512]		THEN [NOP] & [GOTO 3]	
	ELSE IF [B]		THEN [NOP] & [GOTO 4]	
3	IF [C]*[0001]		THEN [TRIG] & [FILL]	
	ELSE		[TRIG] & [FILL]	
4	IF [External]*[0001]		THEN [TRIG] & [FILL]	
	ELSE STORE ONLY	[D]		
5				

CONDITION:

Symbol	GPA
D	hex :XXXX

Func: F Cursor: ← → Select: 0.2 Instruction: ENTER

Use the Trigger Spec menu to specify the event or sequence of events causing the 1230 to trigger and store data. Press START to acquire data.

- 1 Menu header.** Lists the menu name, current date and time, and current setup name. If there is an asterisk before the setup name, the menu was changed since it was last stored in the Storage menu.
- 2 Level number.** This menu lets you define 14 levels of trigger instructions. Add an instruction to a blank level by moving the cursor to a blank level and pressing ENTER. Delete an instruction by moving the cursor there and pressing ENTER until it disappears. In basic triggering mode, you can use If-Then instructions. The advanced mode provides the types of instructions shown in the figure. In

advanced mode, press ENTER to cycle through available instructions. Press 1 to toggle between basic and advanced triggering modes.

- 3 **Condition.** Specifies the condition you want the analyzer to recognize. Press 0 or 2 to select available conditions. The available selections are any conditions defined in the Conditions menu, the logical NOT of those conditions, clock cycles (Clock), the edge-sensitive EXT probe inputs (External), and signals coming through the Trigger In port on the rear panel (Trigin). When you're on this field, the viewport displays the current condition's definition.
- 4 **Count.** Lists the number of times (0001 to 4096) the condition must go through the transition from False to True in order for the action to be taken. Press ENTER while on this field to change the count value, then enter the new number directly from the keypad. Press ENTER again to save your change.
- 5 **Action.** Tells the analyzer what to do when the condition is recognized. Press 0 or 2 to cycle through the actions. Available actions are trigger (TRIG), turn data storage on or off (STR ON or STROFF), do nothing (NOP), send a signal out the Trigger Out port (TRGOUT), or trigger and send a signal out the port (TRIG O). When you move the cursor to the action field, the viewport describes the currently selected action.

- 6 Destination.** Tells the analyzer which trigger level to execute next. Press 0 or 2 to select the destination. The available destinations are to fill memory (FILL), continue to the next trigger level (CONTIN), or go to a specific level (GOTO#). When you move the cursor to the destination field, the viewport describes the currently selected destination.
- 7 Viewport.** Briefly describes the field the cursor currently highlights. Press DON'T CARE to turn the viewport on or off.
- 8 Menu bar.** Identifies which keys to press to use menu features. Press F to cycle between the Trigger Spec menu's two menu bars.

CONDITIONS MENU

Symbol	ADR	DAT	INT	STB
	hex	hex	bin	bin
ADDR-1	: FC0X	XX	01XXXX	10
STROBE	: XXXX	XX	0XXX10	11
ERROR	: 00XX	XX	11XXX0	X0
PORT-7F	: XX7F	0X	0XXX10	1X
ADDR-2	: BC2X	XX	XXXXXX	XX
DSELHIGH	: XXXX	X1	0XXX10	1X
MEMWRITE	: XXXX	XX	01XX11	10

▲	Edit Symbol: ENTER
◀ ▶	Window Up : F
▼	Window Down: C

Menu:MENU Return:MENU twice New:MENU, then Hex Key

Conditions are combinations of logic high and low signals across channel groups (also called data words or events) that the 1230 can recognize. The conditions you define in the Conditions menu are used in the Trigger Spec menu as events for the 1230 to recognize as part of the trigger search.

Initially, the pop-up menu shows three conditions. Use F and C to expand or shrink the conditions window to show more or less conditions.

- 1 **Channel group names.** Displays the names of the groups you defined in the Channel Grouping menu.
- 2 **Radix.** Shows the radices you selected in the Channel Grouping menu.

- 3 Condition symbols.** Lists the 24 conditions you can define. The default symbols are A, B, C, and so on. You can rename a condition to any eight-character name you want. To edit a symbol, press ENTER while the cursor is on the symbol, then enter the new symbol using keypad and cursor keys. Press ENTER again when you finish to save the new symbol.
- 4 Condition words.** Shows the condition word value. The default word definitions are all don't cares (X). When the cursor is in a condition word definition, you can edit the definition directly from the keypad. You can also quickly load the condition values of the current acquisition (at the current cursor location) by positioning the cursor in a condition word definition and pressing ENTER.

RUN CONTROL MENU

1 MON, NOV 28, 1989 Run Control 09:56 * -DEFAULT

2 Update Memory : [1] 4 Display: [Timing] 7

3 Trigger Position: [0512] 9 0 [] 2K

8 Look for Trigger: [After Pre-Trigger Memory Full] 5 6

Compare : [AUTO] Auto Run Count: 1

Compare Memory 1 to Memory: [2]

When Memories Equal : [Display and Reacquire]

When Memories Unequal: [Display and Stop]

Compare Mem Locations: [0000] to [2047]

Use Channel Mask : [MASK]

Display Data at least: [5] seconds

Symbol	GPA	hex
MASK	: FFFF	

Cursor: ←→ Select: 0.2

14 13 12 11 10

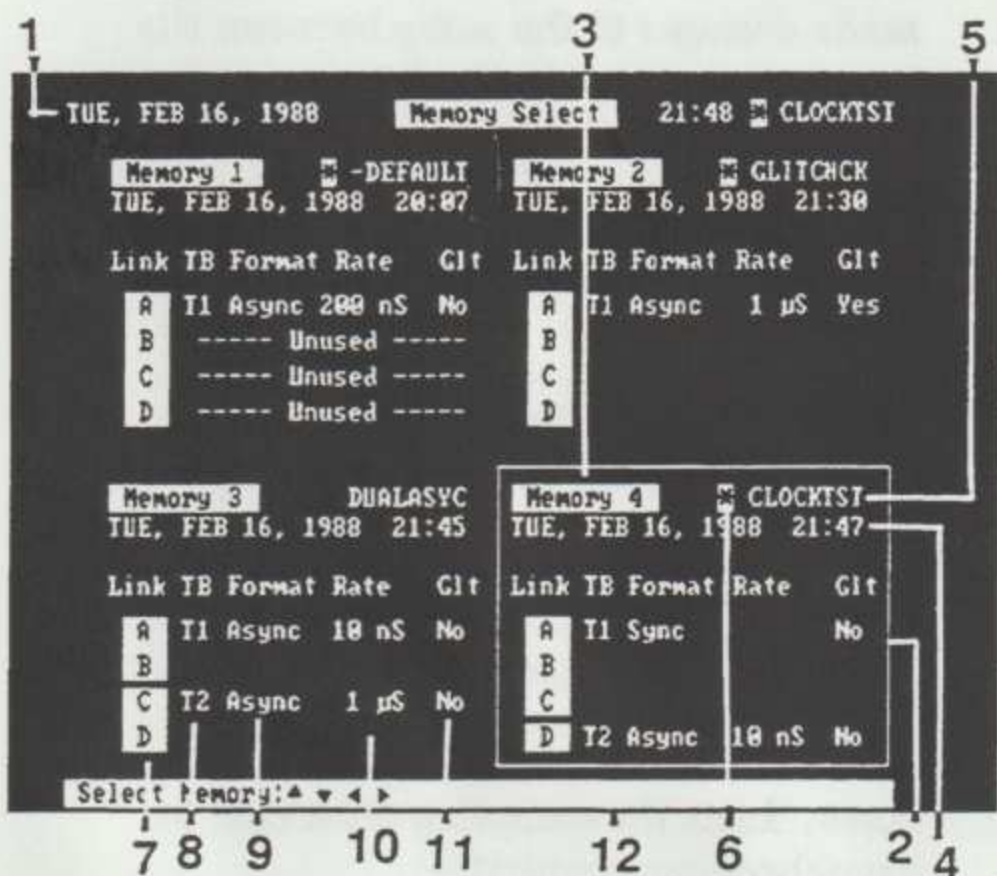
The Run Control menu is divided into two parts. The upper portion lets you control when the 1230 begins looking for the trigger conditions specified in the Trigger Spec menu. The lower portion of the menu lets you control memory comparisons.

- 1 **Menu header.** Lists the menu name, current date and time, and current setup name. If there is an asterisk before the setup name, you made changes to the setup since you last stored it in the Storage menu.
- 2 **Update memory.** Specifies the memory (1-4) you want updated (and overwritten) with acquired data the next time you press START. When the acquisition is complete or when you press STOP, the update memory specified here is automatically displayed. Press 0 or 2 to cycle through the selections.

- 3 Display.** Specifies the display format the 1230 uses when it stops and displays data. Press 0 or 2 to select Timing, State, Disassembly, or Scope.. You must have an optional disassembly probe connected to get a disassembly display. A scope display requires a 1230 DSM module.
- 4 Trigger position.** Specifies the trigger position in increments of 128 memory locations: 128, 256, 384, and so on, through 1920. Press 0 or 2 to cycle through the selections. The trigger position indicator (the box) to the right shows graphically where the trigger is in memory.
- 5 Trigger position indicator.** Shows graphically where the trigger is located in memory.
- 6 Look for trigger.** Tells the analyzer when to begin searching through acquired data for the trigger condition. Press 0 or 2 to cycle through the selections. You can look for the trigger Immediately, Continuously, or After Pre-Trigger Memory Full.
- 7 Memory compare.** Specifies a Manual or automatic (Auto) comparison of the update memory to the specified reference memory. Press 0 or 2 to change the selection. If you choose manual comparison, this menu sets parameters for memory comparisons you can do in the State menu. If you choose automatic comparison, the analyzer automatically compares memories after each acquisition and performs actions (which you select) based on whether memories are equal or unequal.
- 8 Auto Run Count.** In Auto mode, shows how many acquisitions the 1230 has performed since you pressed START.

- 9 Memory compare specification.** Specifies the reference memory (1-4) you want to compare the update memory to. The update memory is selected in the upper portion of this menu. Press 0 or 2 to cycle through the memories.
- 10 Memory compare actions.** If you do an automatic data comparison, you can use these fields to tell the 1230 to take actions depending on whether memories are equal or unequal. You can specify these actions: Display and Reacquire, Display and Stop, or Discard and Reacquire. Press 0 or 2 to cycle through the selections for each field.
- 11 Compare memory locations.** Specifies a range of memory (within 0000-2047) for comparisons. For example, if you specify the range 0815 to 0910, the state table will show compare differences only for the range 0815 to 0910. To edit this field, place the cursor on the field, press ENTER, enter the range from the keypad, then press ENTER again to save your change.
- 12 Channel mask.** Lets you control which channels are compared and which are not (masked). The default is all channels compared (no mask). The symbol X means mask (DON'T CARE); any other symbol means compare.
- 13 Data display update.** This field applies when you set the Look-for-trigger field to Continuously or when you select Auto in the compare field. This field lets you specify the amount of time the 1230 will display data before acquiring data again. Display times range from 0 to 9 seconds.
- 14 Mask viewport.** Shows the comparison mask you're currently using (from the Conditions menu).

MEMORY SELECT MENU

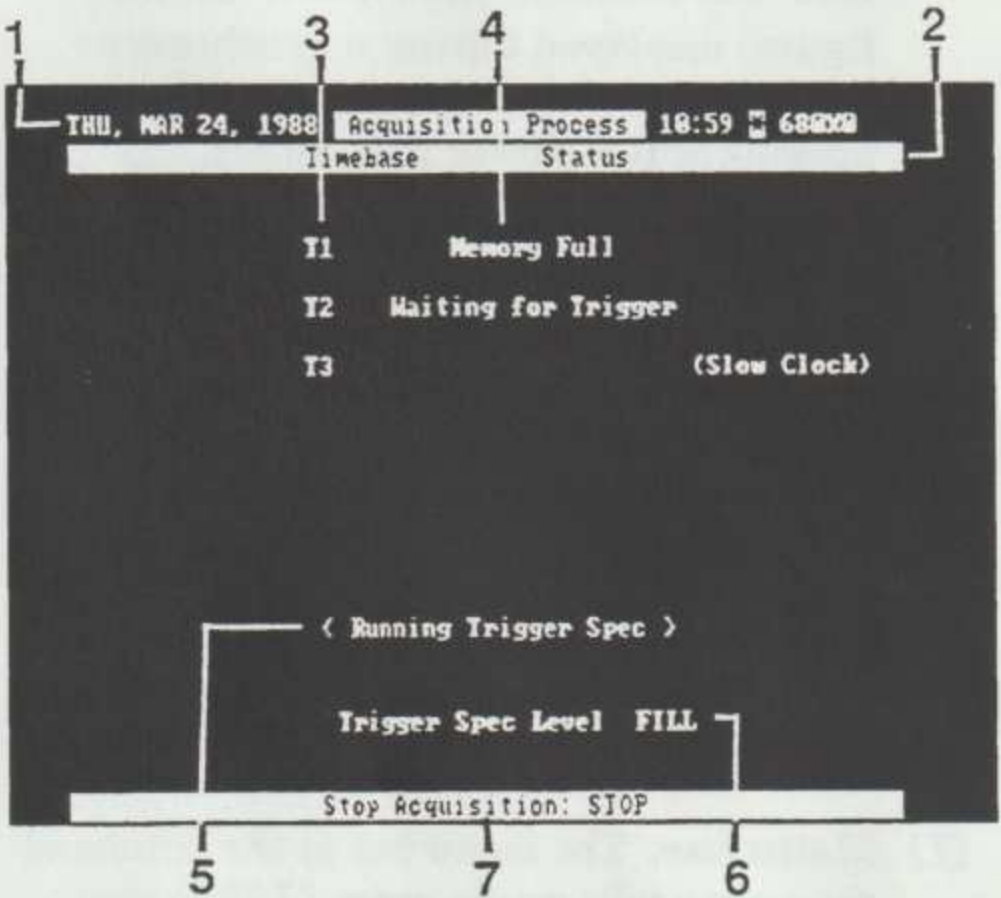


The Memory Select menu displays the setup parameters used to acquire data that has been stored in each of the analyzer's four 2K-deep memories. Use the cursor keys to select the memory you want to display.

- 1 **Menu header.** Lists the menu name, current date and time, and current setup name. If an asterisk is shown before the setup name, you changed the setup since you last stored it in the Storage menu.
- 2 **Box.** Encloses the memory currently selected for display. Use the cursor keys to select a different memory.
- 3 **Memory number.** Identifies each of the four memories.
- 4 **Date and time.** Lists the date and time at which you acquired the data stored in this memory.

- 5 **Setup name.** Identifies the setup with which you acquired the stored data.
- 6 **Asterisk.** If the 1230 displays an asterisk before the setup name in a memory, you made changes to the setup between the time it was stored in the Storage menu and when the acquisition was made.
- 7 **Probe links.** This field shows how probes were linked when the acquisition was made.
- 8 **Timebase.** This field identifies the timebase for each probe used to acquire the stored data.
- 9 **Format.** This field shows whether the stored data was acquired synchronously or asynchronously.
- 10 **Rate.** Lists the sampling clock rate for asynchronous acquisitions.
- 11 **Glitch.** Tells whether or not glitch detection was enabled when the acquisition was made.

ACQUISITION PROCESS SCREEN



After you press START, the Acquisition Process screen displays information on the status of the acquisition. This information is updated until the acquisition is complete.

- 1** **Menu header.** Lists the menu name, current date and time, and current setup name. If there is an asterisk before the setup name, you changed the setup since it was last stored it in the Storage menu.
- 2** **Column headings.** The first column lists the defined timebases while the second lists the acquisition status for that timebase.
- 3** **Defined timebases.** Lists the timebases specified in the Timebase menu.

- 4 Timebase status.** Tells you what the analyzer is doing in each timebase: acquiring data, filling memory, or memory full. The message "Slow Clock" (in the figure) displayed during a synchronous acquisition means either the clock is missing or it is slower than 10 ms.
- 5 Acquisition status.** Displays the status of the acquisition. The brackets flash on and off to tell you if the acquisition is still going on. Status messages are as follows: Waiting for Trigger, Comparing Memory, Triggered, Acquisition Aborted, and Acquisition Complete.
- 6 Trigger level.** Identifies the trigger level in the Trigger Spec menu that is currently being executed.
- 7 Menu bar.** The menu bar at the bottom of the screen tells you to press STOP to stop the current acquisition. During acquisition, the analyzer ignores all other keystrokes. The menu bar also displays the auto-run count number for an auto-run acquisition.

STATE MENU

1	5	State: Memory 1				3	2
ED, MAR 09, 1988 11:49 D-SELTST							
Loc	ADR	DAI	CIL	SIB			
	hex	oct	bin	bin			
1142	04B0	077160	0010100001	000100			
1143	0470	177161	1100000001	110111			
1144	0440	067530	0011000011	110000			
1145	0470	167160	1100000001	100100			
1146	04F0	167167	0011111011	011111			
1147	0430	177161	0011111101	011111			
1148	04B0	177160	0010100001	000100			
1149	04B0	167161	1100000001	110111			
1150	0440	167530	0011000011	110000			
1151	0470	067160	0000000001	000100			
1152	04F0	177165	1111111011	101100			
1153	0430	177163	1101101011	111100			
1154	04B0	167160	0010100001	000100			
1155	04B0	067161	0000000001	010111			
1156	0440	167530	1101000011	101110			
1157	0470	177160	0000000001	000100			
1158	04F0	177165	1111111011	101100			
1159	04F0	167163	1101101011	111100			
1160	04B0	167160	0011100001	011111			
1161	04B0	167161	0000000001	010111			
Func:F Scroll:↔ Cursor:← Jump:ENTER Radix:E							
6		7		4			

Each column in the state table represents a channel group, and each row represents the data acquired across all channels at one sample point. The Loc column indicates the memory location where the sample point data is stored.

To search for a specific event, press 0 or 2 to cycle through available search events until you choose the event you want. One of the menu bars displays the current search event. Press 1 to search for the event.

Press C to compare memories in the state table. Press X to toggle the data display between the reference and the update memories.

- 1 **Menu header.** Lists the menu name, the memory currently being displayed, the current date and time, and the current setup name. If an asterisk appears before the setup name, you made changes to the setup since it was last stored in the Storage menu.

- 2 Group Names.** Displays the group names you defined in the Channel Grouping menu. Only groups associated with the same timebase are displayed together. Press 9 to display a different timebase.

If there isn't enough room on the screen to show all groups, the 1230 puts a > in the last column of the radix line to show that there is more channel group information. To see these groups, change the display radices to radices that use fewer characters such as hexadecimal.

- 3 Radix.** Identifies the radix for each channel group. Press E to change radices, then press 0 to cycle through the groups and 2 to cycle through the radix options: hexadecimal (hex), binary (bin), octal (oct), ASCII (asc), or off. If you change the radix here, it won't affect the Channel Grouping or Conditions menus.

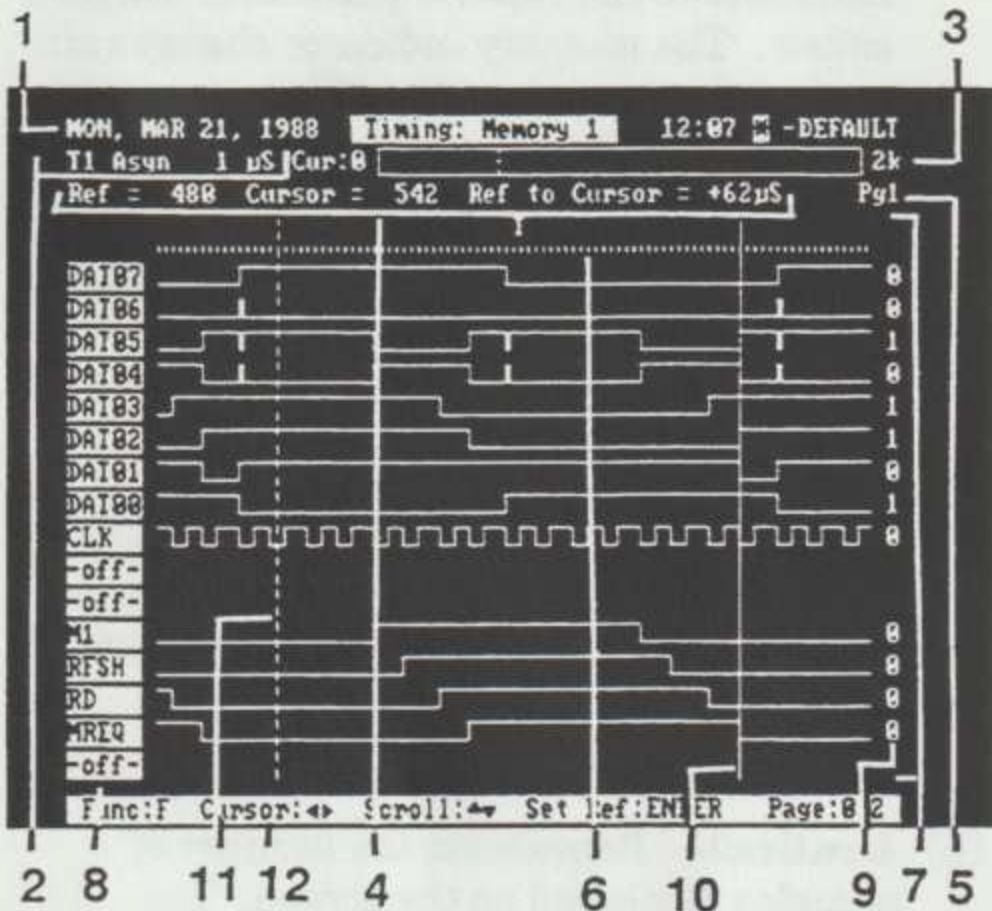
- 4 Data.** The analyzer can display up to 20 lines of state table data on the screen at one time. Use ▼ and ▲ to scroll up or down data one line at a time. Use ◀ and ▶ to scroll through data in increments determined by the menu bar's scroll rate field. Press 7 or 8 to change this rate.

- 5 Memory location.** Lists the location of the data in the analyzer's memory.

- 6 Trigger location.** If the trigger condition occurs more than once, each subsequent occurrence is marked with inverse video in the location column.

- 7 Menu bar.** Lists the keys to press for menu features. Press F to cycle through the state table's menu bars.

TIMING MENU



The Timing menu displays data from each channel as a digital waveform. The solid line is the cursor and the dotted line is the cursor reference location. The 1230 can display up to 16 traces on the screen at once. Press 0 or 2 to display the next page of traces. If glitches were acquired, they are displayed as small, bright vertical lines rising or falling from the trace.

- 1 **Menu header.** Lists the menu name, the memory currently being displayed, the current date and time, and the current setup name. If there is an asterisk before the setup name, you changed to the setup since it was last stored it in the Storage menu.
- 2 **Timebase.** Identifies the timebase and clock format with which you acquired the currently displayed data.

- 3 **Memory indicator.** Represents the 1230's 2K of memory. The T shows the relative location of the trigger word. A vertical tic mark shows the relative position of the data cursor. The memory indicator changes size to show how much of the 2K memory you are seeing on the screen.
- 4 **Ref, Cursor, and Ref to cursor.** Identify the reference location, the cursor position, and the time between the two. The reference location is the dotted line; the cursor is the solid line.
- 5 **Page.** Tells you which page of channels is currently displayed. Press 0 or 2 to display the next page of traces. Depending on the number of probes you're using, you can display one of four pages of channels.
- 6 **Graticule.** Represents the number of samples displayed on the screen. The trigger location is marked by a T. Subsequent trigger events and locations where storage was turned on are marked with an M.

Resolution is one of the fields available in the menu bar. To change the resolution, press 4 or 5. If you set resolution to 2048, the graticule is a solid line and you can see the entire memory on the screen at once.

- 7 **Timing traces.** Each trace is a digitized waveform representing the logic state of each data channel at each sample point.

The order in which traces are displayed may be changed by pressing E to edit traces, followed by D to reorder them. The menu bar at the bottom of the screen tells you which keys to press. Press the arrow keys to select the position in which you want to place a different trace. Press 0 or 2 to cycle through the available traces.

Pressing 1 adds the next trace below the selected one. Pressing 3 turns the trace off or on.

- 8 Trace names.** Identify the trace for each displayed channel. To rename a trace, press E. Then, use the ▼ and ▲ keys to select the trace you want to rename. Press E again and use the keypad or the ▲ and ▼ keys to change the name. The menu bar tells which keys to press.
- 9 Trace value.** Gives you the logic level of each displayed trace at the cursor location.
- 10 Data cursor.** Identifies the data cursor (solid line). If you move to the State or Disassembly menus, the cursor position will be the same as it was in the Timing menu.
- 11 Reference cursor.** The dotted line is a reference cursor allowing you to measure the time between data samples. To set the reference cursor position, move the data cursor to the desired location and press ENTER.
- 12 Menu bar.** Tells you which keys to press for the menu functions. Press F to cycle different fields through the menu bar.

STORAGE MENU

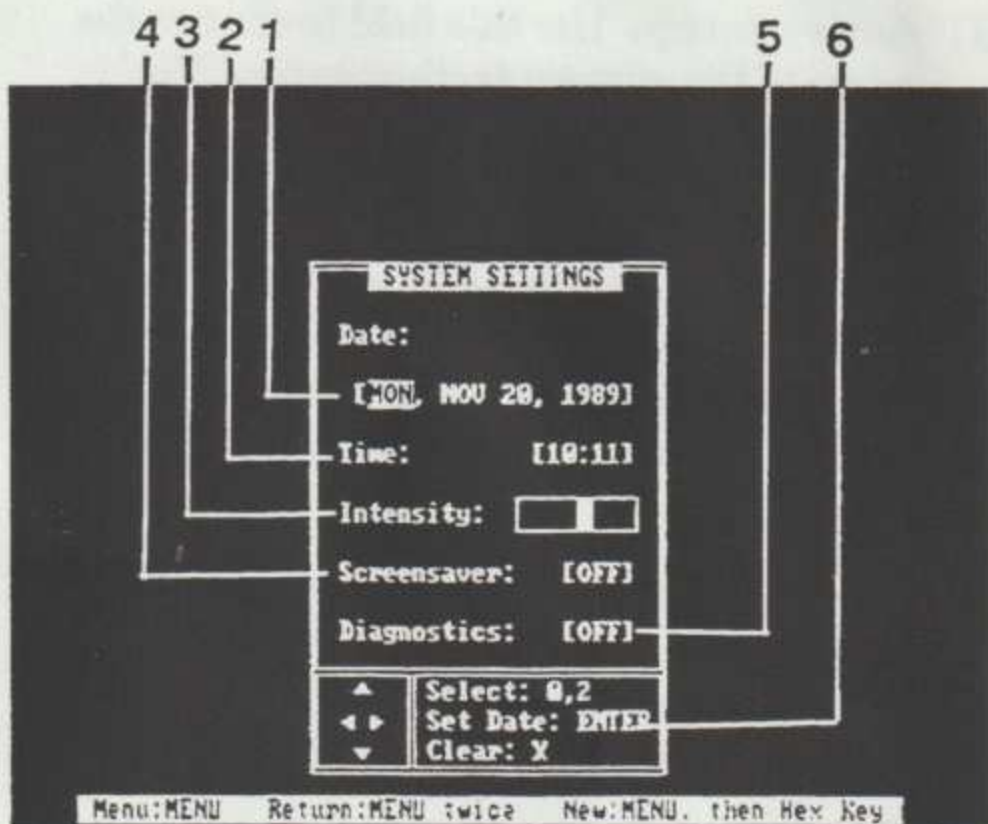
1	MON, MAR 21, 1988 Storage 12 38 KEVABOM					2
	Setup	Date	Time	Prot	Links	
1	MAINCHK	WED, MAR 09, 1988	12:25	No	A B C	
2	SET TWO	TUE, JAN 03, 1988	05:49	Yes	A	
3	TARA!	MON, MAR 21, 1988	12:34	No	A B C D	
4	KEVABOM	MON, MAR 21, 1988	12:36	No	A B C D	
5	DUALTB	FRI, FEB 12, 1988	08:15	No	A B C D	
6	E12	MON, FEB 22, 1988	12:32	Yes	A B C D	
7	GLICHTST	MON, FEB 15, 1988	18:16	Yes	A B C D	
8	SANDYS	FRI, JAN 13, 1988	06:03	Yes	A	
	Active Setup: [KEVABOM]		Protection: [No]			
3	4	5	7	6		
	Select Setup:▲▼	Load:0	Save:2			

The Storage menu lets you store setups for use later.

- 1 **Menu header.** Lists the menu name, current date and time, and current setup name. An asterisk before the setup name means the setup has been changed since you stored it last.
- 2 **Column headings.** Identifies menu columns.
- 3 **Setup description.** Lists the name of the stored setup, the date and time it was stored, whether or not it is protected from being overwritten, and the probe links used in the stored setup.

- 4 Selection indicator.** Indicates the setup you want to load or save. Use the arrow keys to move it up and down the list of stored setups.
- 5 Active setup.** Use this field to change the name of the current (active) setup. To change the name, move the > symbol to this field with the ▼ cursor key and press ENTER. Then, use the and keys and the keypad to change the name. Press ENTER or move the cursor to a different field when you have finished entering the new name. The menu bar will remind you which keys to press.
- 6 Setup protection.** You can protect a setup from being accidentally overwritten. Press 0 or 2 to toggle the protection for the active setup on (Yes) or off (No).
- 7 Menu bar.** Lists the keys to press to load, save, edit, and protect setups.

SYSTEM SETTINGS MENU

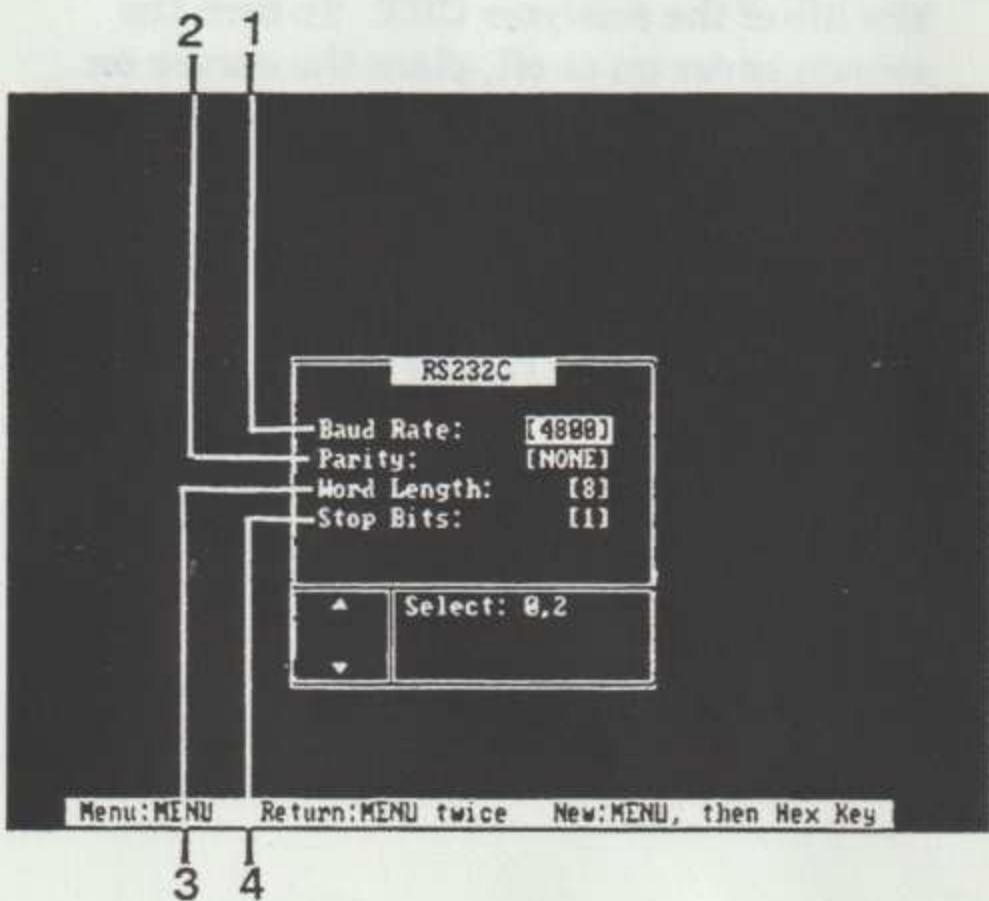


The System Settings menu lets you reset the current time and date, adjust the screen intensity, turn the screen saver on and off, and turn the power-up diagnostics on and off.

- 1 **Date.** Controls the analyzer's calendar. To change the date, place the cursor on the field and press 0 or 2 to cycle days, months, and years through the field. Press ENTER to save your changes.
- 2 **Time.** Controls the analyzer's clock. To change the time, place the cursor on the field and press 0 or 2 to cycle times through the field. Press ENTER to save your changes.
- 3 **Intensity.** Controls the screen brightness. Move the cursor to this field and press 0 or 2 to change the intensity.

- 4 **Screensaver.** When the screen saver is on, the analyzer screen goes dark when no keys are pressed for about 18 minutes. This helps prevent screen burn-in and prolongs the life of the analyzer CRT. To turn the screen saver on or off, place the cursor on this field and press 0 or 2.
- 5 **Diagnostics.** Controls whether the 1230 runs internal diagnostics at power up. To turn the power-on diagnostics on or off, place the cursor on this field and press 0 or 2.
- 6 **Menu bar.** Tells you which keys to press to change the selections in each field.

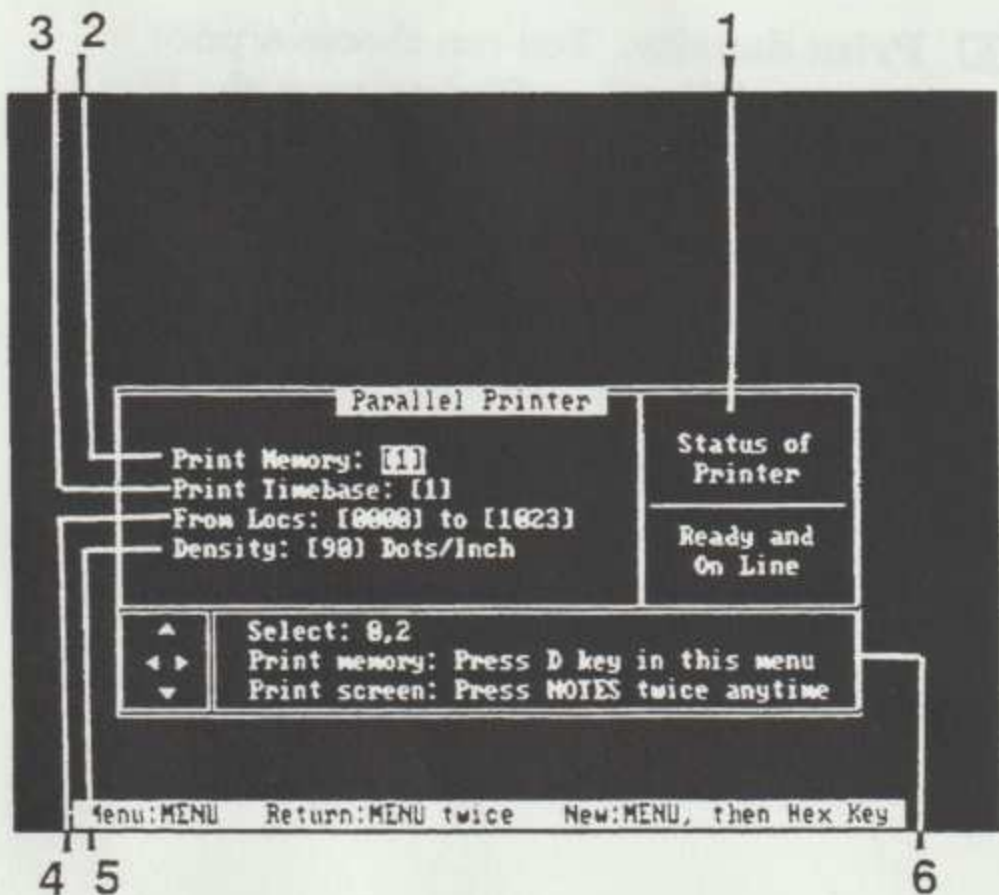
RS-232C MENU



The RS-232C menu allows you to set parameters required for transmitting data through the optional RS-232C port.

- 1 **Baud rate.** Identifies the number of bits per second transmitted through the RS-232C port. Select from 9600 to 110 bits per second.
- 2 **Parity.** Specifies the parity (odd, even, or none) used to check the accuracy of transmitted data.
- 3 **Word length.** Specifies the length of the data word (7 or 8 bits) being transmitted.
- 4 **Stop bits.** Specifies the number (1 or 2) of stop bits used to signal the end of a data word.

PARALLEL PRINTER MENU



The Parallel Printer menu tells you the printer's status, lets you select print density, and lets you print the contents of memory.

- 1 **Printer status.** Tells you if the printer is connected and ready to print.
- 2 **Print memory.** Identifies which of the four memories you want to print the contents of. The 1230 prints memory dumps only in state table format.
- 3 **Print Timebase.** If data acquired on more than one timebase is stored in a given memory, use this field to select which timebase's data you want to print out.

- 4 **Memory locations.** Specifies a range of memory locations to be printed. To edit this field, press ENTER, then enter the range from the keypad.
- 5 **Print density.** You can choose a print density of 60, 80, or 90 dots per inch. Press 0 or 2 to cycle through the selections. A density of 90 gives the smallest printout with the best resolution; 60 gives the largest printout with the poorest resolution.
- 6 **Menu bar.** Tells you which keys to press for menu features.