

DOCUMENT TITLE: KLA System Software V1.43

DOCUMENT NO. 2310-5002

DATE 7 December 1983

Overview of Enhancements and Operational Changes

KLA Engineering, Oct. 18, 1983

Introduction

KLA software V1.43 comes in two flavors:

V1.43A is the version for STAND ALONE KLAs

V1.43C is the version for combined logic analysis/ emulation systems (LASER and KDS/KSA)

The two versions are identical with respect to the functions offered to the user with a few exceptions described below. Internally they are considerably different however.

The following overview describes extensions and improvements of the KLA software revision V1.43 compared to software rev. V1.2x. Except for some bugs in Remote Control that have been removed in 1.43, versions 1.41 and 1.42 are identical to 1.43 in all respects.

We have attempted to remove all bugs that have been reported in SW versions V1.2x and X1.3x and do not list bug fixes in the release note. If you find bugs try SW 1.43 BEFORE reporting to engineering. Bug reports should only be reported on our HW/SW Discrepancy Report forms. They must include the revision number of the software used and complete information on the operating conditions. It is very helpful for us to have a hardcopy of the menus that show the error and of the setup (configuration, trigger word, trigger sequence, I/O-menu etc.).

Summary of enhancements:

* Time measurement

Time-measurement is a KLA-option that records times elapsed between adjacent samples. Times are measured with a resolution of 10 nsec independent of the clock selected in the configuration menu. The times between consecutive samples range from 40 nsec to more than 42 sec. Times may be displayed in data list as well as in a special, additional timing diagram.

A detailed description of time measurement is available as an addendum to the KLA operators manual.

* Hardcopy of timing diagram.

In addition to hardcopy of alphanumeric screen displays via serial interface B, the KLA now supports printout of all KLA menus including the timing diagram on a selection of MICRO-LINE dot matrix printers with a parallel interface.

* Remote control option:

Remote control is an optional KLA software module that will accept commands sent to the KLA over a serial link (RS 232-C) or the KLA IEEE-488 interface. The interface also allows the KLA to both send and receive specified segments of source, reference and time data, complete setups, status information and messages as well as the KLA screen image. The command macros are in the form of simple mnemonic strings.

* New disassemblers:

1802/4/5/6
6800, 6802, 6809
6502
8080, 8085, 8086, 8088

* Auto repeat function

The KLA may be programmed to repeat a measurement using the same setup and trigger conditions a specified number of times without user interaction. The measured data are displayed a user specified period of time after each measurement before the KLA is restarted automatically.

* Miscellaneous

The KLA now checks which DMBs are inserted and does not allow to enter parameters for boards that are not installed.

The KLA understands all special function codes sent by the new KONTRON ergoline keyboard (Instrumentation version!)

KLA MENUS

General remarks

When the KLA is used in remote control mode the bottom line of all menus is used to display remote control information. The message "REMCN IS ACTIVE" appears in the right hand corner of the line. The message blinks if the KLA front panel keyboard has been disabled by a remote control command. Remote control may also initialize automatic echoing of REMCN commands and display of acknowledgements on this line. Any menu may be overlaid by a message sent from the remote controller.

Configuration

At boot time the KLA software detects whether it runs in a KLA 64, KLA 48 or a KLA 32 environment. In the second line of the configuration menu probes that belong to the missing DMBs are turned off automatically. It is not possible to turn those probes on. It is therefore no longer possible to set parameters for probes that are not supported by the hardware configuration.

Trigger word

No changes

Trigger sequence

The first line now provides for activation of the new AUTO REPEAT feature. A new field offers the options SINGLE STEP or AUTO REPEAT recording mode. When auto repeat is selected two more fields appear. The first field the number of automatic repetitions is input numerically. The second field allows specification of the interval between consecutive measurements in increments of 1sec. In auto repeat mode a manual break (STOP) will stop automatic repetition. Note: The STOP key is not scanned by the software while the new display is being generated after each measurement.

Trigger monitor

No changes

Data list

When the time measurement option is installed an additional choice for GROUP is available that displays the data of the time measurement board. (see Time Measurement Option Manual for details)

Timing Diagram

A second version of the timing diagram tailored to the specific needs of time measurement is available when the time measurement option is installed. For details see time measurement manual.

Store Recall

No changes

I/O Menu

Several additions to this menu have been made with respect to graphic hardcopy and remote control.

Remote control:

The field CONTROL provides the following options:

LOCAL KEYBOARD: KLA user inputs are only accepted from KLA front panel keypad and the new Kontron ergoline keyboard. Rev. 1.2 of the keyboard firmware is required.

LOCAL & EXTERNAL: Inputs accepted from KLA front panel and a serial input device on serial channel A. The KLA does not echo or acknowledge inputs. Parameters for serial communication may be set in a different set of input fields.

REMOTE SERIAL A: The KLA can be controlled by inputs on the serial interface A. Control is effected using the macros documented in the preliminary remote control manual (July 8, 83).

The KLA front panel keypad is active unless it is deactivated using a remote control command (SET LOCAL LOCK). Parameters for the serial interface (baudrate, data bits, parity, stop bits) can be selected in a set of input fields. Hardware or software handshake may be chosen. When SW handshake is active the XON and XOFF characters may be defined. A TEST field is provided to test proper operation of the interface. A roll field allows to define whether the controller behaves like a terminal or a computer with respect to the use of the control lines. Both half duplex and full duplex are supported.

REMOTE GPIB:

This selection activates the KLA IEEE Interface to accept REMCON commands and to send or receive files. When GPIB-REMCN is selected an additional field allows to define the GPIB bus address of the KLA. Another field is used to select the character(s) that the KLA interprets as an END SEQUENCE of command strings sent by the host.

The Remote Control Option is described in a preliminary manual (July 8, 1983).

The field PRINTER provides the following options:

SERIAL:

Any serial printer may be connected for KLA screen hardcopy. All KLA menus EXCEPT the TIMING DIAGRAM may be hardcopied.

PARALLEL:

A selection of printers with parallel interface can be connected for hardcopy of all menus INCLUDING the TIMING DIAGRAM. A special roll field allows selection of the printer to be connected. Presently the following OKI MICROLINE printers are supported: M84 (both with old and new firmware. Select M840 or M84N respectively.), M92 and M93.

Note: The roll field for selection of the type of graphic printer is not deleted when SERIAL printer is selected. In the serial mode these graphic printers are NOT supported however.

Compare Menu

No changes

Disassembler

The following new disassemblers are supported by software V1.43: Only one disassembler at a time may be included on a given KLA system diskette.

RCA CDP 180x

has been designed to support:

1802ACE, 1802A, 1802AC, 1802BC
1804AC
1805C, 1805AC
1806C, 1806AC

It has been developed and tested on the 1802ACE and successfully used on a 1805C.

Motorola 6800, 6802, 6809

Different hard and software needed for each of these processors. The 6809 presently does NOT support the 6809e. A disassembler that does both 6809 and 6809e on same configurator (but different from present one) will follow soon.

Rockwell 6502

INTEL 8080, 8085

Different Configurator and software needed.

INTEL 8086, 8088

Active configurator supports both types both in max and in

min mode. The hardware is jumper selectable, the software detects the type of processor automatically. This disassembler needs a separate 5V power supply. (It is VERY active.) It does NOT use the Clip 40 cable but needs a special 40 signal twisted pair cable.

When a TMB is installed the Z80 disassembler can optionally display a column containing the time measurement data. Two modes of time display may be selected.

RELATIVE: The time displayed is the execution time for the current instruction.

ABSOLUTE: Time displayed is relative to another instruction that may be selected numerically in the field INSTRUCTION HOME.

Known problem: Versions V1.01 of the disassemblers for MC6800 and MC6802 may not disassemble a RESET correctly if the reset vector is not recorded. This problem has been solved in the meantime in V1.02 of disassemblers.

V1.02 of MC6802-disassembler also supports MC6808.

This version of the disassemblers will be included in future shipments of KLA V1.43.

COMBO - Software for LASER and KDS/KSA - Systems

Most of the features listed above are also supported by the Combo - version of the KLA software. In addition the same COMBO-KLA system diskette will run on both a KLA (or LASER) and KDS and do correct video initialization.

The following features are NOT included:

- * Remote control
- * Special version of timing diagram for TMB data

The graphic printer driver is loaded as an overlay when hardcopy of the timing diagram is required.

Disassemblers for the following only are supported in combo systems:

Z80, 8080, 8085, 6809