

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE Engineering Specs for DK8-EA (M882) Real Time Clock (line)

1.2 Operation

Refer to DK8-EA block diagram and timing diagram. 6132 or initialize will clear the interrupt request flag. The interrupt request flag is set with IOT 6131. The interrupt request line will be asserted if the slave clock flag is set from the master clock flag and will remain asserted until it is cleared by 6132, initialize or 6133. The master clock flag is set. Every time the frequency source goes high 100 or 120 times a second.

The skip line is pulled to ground, asserted, if the slave clock flag has been set and the IOT 6133 is issued. The skip line stays at ground for the duration of the IOT 6133. At the end of this IOT the master clock flag will be cleared. TPI the start of any IOT will clear or set the slave flag depending upon the output state of the master flag. If the master flag has been cleared then the slave will be cleared. With both the master and slave cleared no skip can occur until the next clock pulse which will set the master flag and TPI will set the slave.

It takes two IOT's to sync to the frequency source the first to clear the master clock flag and the second to skip the moment the master clock flag goes high which will be when the frequency source clock pulse goes high.

Sample Program

```
6133
JMP.-1
6133
JMP.-1
```

SIZE	CODE	NUMBER	REV
A	SP	DK8-EA-1	

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE Engineering Specifications for DK8-EA (M882) Real Time Clock (line)

2. Operating Conditions

Temperature - 30°F - 120°F

Humidity - 10 - 90% non condensing

Power Requirements

+5 volts - 210 ma

14 VAC - 1.4 ma

Frequency stability - depended on line frequency

Line Frequency Specification

The usual maximum deviation from the standard 60 cycles is $\pm 3/100$ or .05% this maximum might be daytime or night time operation. Except on rare occasions when deviations of 1/10 cycle might occur. The usual normal deviations are about 1/40 of a cycle during both daytime and night time operation.

The center frequency average almost exactly 60 cycles.

For local line frequency specifications consult the local power company.

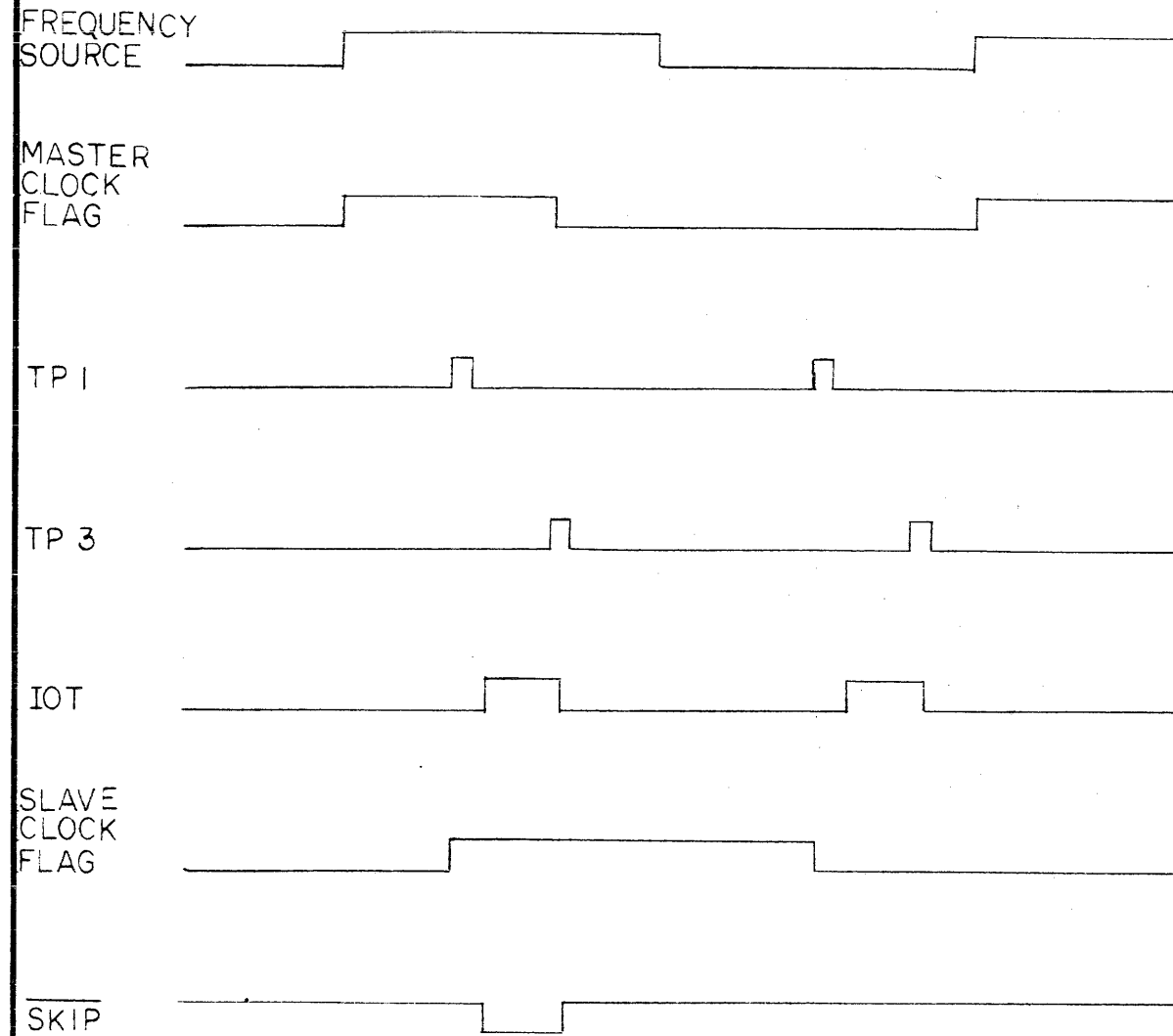
3. Software: MAINDEC-8E-D8AA-D-(D) Write Up
MAINDEC-8E-D8AA-PB Tape

SIZE	CODE	NUMBER	REV
A	SP	DK8-EA-1	

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE DK8-EA TIMING DIAGRAM

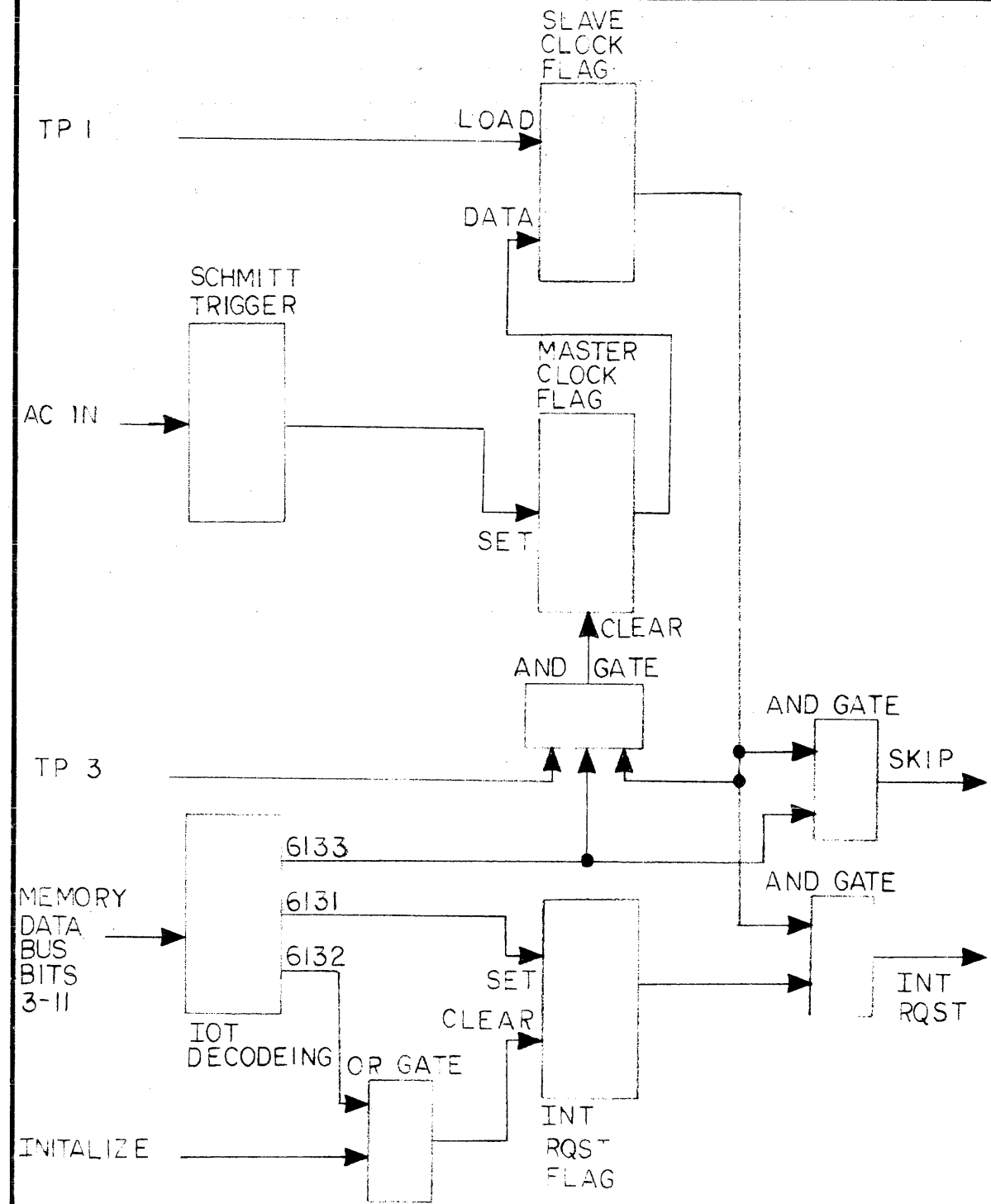


SIZE	CODE	NUMBER	REV
A	SP	DK-EA-1	

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE DK8-EA BLOCK DIAGRAM



SIZE	CODE	NUMBER	REV
A	SP	DK8-EA-1	

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS						
ENGINEERING SPECIFICATION					DATE 3/17/71	
TITLE DK8-EA, EC TEST PROCEDURE						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG	<i>Al De Luca</i>	APPD	<i>JT Puffer</i>	SIZE	CODE	NUMBER	REV
				A	SP	DK8-EA-2	

DEC FORM NO. DRA 107

ENGINEERING SPECIFICATION				CONTINUATION SHEET
TITLE DK8-EA, EC TEST PROCEDURE				
<p>1.0 <u>Equipment</u></p> <p>1.1 PDP8/e Standard</p> <p>1.2 Heat Box.</p> <p>1.3 453 Scope and Voltage Probes</p> <p>1.4 Teletype</p> <p>1.5 Option module and cable required: DK8-EA = M882 Module & 7007128 Cable DK8-EC = M883 Module</p> <p>2.0 <u>Test Station Set Up</u></p> <p>2.1 Check paperwork in the envelope, making sure it is complete as required by DEC Standard #101.</p> <p>2.1.1 Test and inspection record.</p> <p>2.1.2 Key sheet and ECO status sheet will contain both CS and etch revision.</p> <p>2.1.3 Quality Control inspection report.</p> <p>2.1.4 PDP8/e progress report (inserted at this time).</p> <p>2.2 Insert M882 or M883 module in the omnibus per Recommended Module Assignment List (ASP-PDP8/e-0-4).</p> <p>2.3 Connect the red wire from the 7007128 cable to the middle hole of the amp connector (J5, H724 power supply) and either white wire on each side of the red one. Insert the Mate-N-Lock end of the cable to the M882 module. The 7007128 cable can be daisy-chained.</p> <p>2.4 Turn on PDP8/e power.</p> <p>3.0 <u>High Speed Dump Operating Procedure</u></p> <p>3.1 Set test station "On Line" switch to "Off Line".</p> <p>3.2 Toggle into 8/e memory.</p> <p>3.2.1 Load address 0001 through switch register.</p> <p>3.2.2 Deposit 0001/5001 0002/7777 0003/7777</p> <p>3.2.3 Load address 0001, hit clear and continue.</p> <p>3.2.4 This initializes the memory; the address lights will indicate 0001 and MD lights will indicate 5001.</p> <p>3.3 Set "Auto/Manual" switch to manual.</p> <p>3.3.1 High speed dump light will light on test panel.</p> <p>3.4 Set "On Line" switch to "On Line".</p> <p>3.4.1 On Line light will light.</p> <p>3.5 Set test station switch register to octal number of program desired.</p> <p>3.6 Depress and release initialized switch.</p> <p>3.6.1 Initialize light will come on and stay there until mother recognizes stations service request. then initialize light goes out.</p>				

		SIZE	CODE	NUMBER	REV
		A	SP	DK8-EA-2	

DEC FORM NO 16-1022
DRA 108

SHEET 2 OF 4

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE DK8-EA, EC TEST PROCEDURE

- 3.7 Program will be loaded and checked by mother computer; if load is completed, the 8/e will stop at location 0001, MA = 0002.
 - 3.7.1 Initialize light is out and the loaded light goes out
- 3.8 If an error, the following lights will/may be lit.
 - 3.8.1 Receive-Data receive by mother not complete, go back to 3.1 and load again.
 - 3.8.2 Transmit - data transmitted by mother not complete; go to 3.1.
 - 3.8.3 Load - checksum error go to 3.1.
 - 3.8.4 Illegal program - program non-existent; go to 3.1.
 - 3.8.5 Had load - if load is on, hit initialize key to clear; go back to 3.1.
 - 3.8.6 If any of the above error lights light, the program under test will have to be loaded 5 successive times to insure the 8/e is not causing the error.
- 3.9 Start a program.
 - 3.9.1 In order to start a program, consult diagnostic write up for starting address.

4.0 DK8 Checkout

- 4.1 For jumper configurations of different frequencies (DK8-EC) along with switch register settings required, consult diagnostic write up.
- 4.2 The DK8-EC comes supplied with a machine inserted jumper selecting the 50 Hz frequency. The diagnostic should be run with this configuration for 5 minutes. The split lugs on the M883 module should be scoped and their correct frequency of 500 Hz., 5000 Hz., and verified.
- 4.3 Execution times are as follows:

Option	Minutes/Pass	Run Time	Program Octal No.
DK8-EA	2.5	5 minutes	36
DK8-EC	2.5	5 minutes	36

5.0 Heat Test

- 5.1 Heat test is to be run after successful completion of all previously indicated tests.
- 5.2 Run the DK8-E clocks diagnostic for 5 minutes with the heat box down, ports closed and heat off. Load per loading procedure step 3.0
- 5.3 Raise the heat switch on the test station panel and once the indicator light goes off, run the DK8-E clocks diagnostic for 10 minutes.
- 5.4 Turn the heat switch off and open the two ports on the left side of the heat box.
- 5.5 Allow 15 minutes for the machine to cool before removing the heat box.

SIZE	CODE	NUMBER	REV
A	SP	DK8-EA-2	

ENGINEERING SPECIFICATION

CONTINUATION SHEET

TITLE DK8-EA, EC TEST PROCEDURE

- 5.6 Terminate the test once the machine has run for 5 minutes at room temperature.
- 6.0 Final Operation and Inspection
 - 6.1 If shipping the DK8-EA or DK8-EC as an add-on, disconnect the M882 or M883 module from the 8/e and the cable from J5 (H724 power supply) if M882 module is used.
 - 6.2 Check that the following paperwork has been completed:
 - Envelope
 - ECO Status Sheet
 - QC Sheet
 - 8/e Progress Report

SIZE	CODE	NUMBER	REV
A	SP	DK8-EA-2	

This drawing and specifications, herein, are the property of Digital Equipment Corporation and shall not be reproduced or copied or used in whole or in part as the basis for the manufacture or sale of items without written permission.

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS						
ENGINEERING SPECIFICATION					DATE 4/1/71	
TITLE DK8-EA ACCEPTANCE PROCEDURE						
REVISIONS						
REV	DESCRIPTION	CHG NO	ORIG	DATE	APPD BY	DATE

ENG <i>R. Dunbar</i>	APPD <i>Dave Chittow</i>	SIZE A	CODE SP	NUMBER 7665126-0-0	REV
----------------------	--------------------------	---------------	----------------	--------------------	-----

DEC FORM NO. DRA 107

SHEET 1 of 2

ENGINEERING SPECIFICATION				000000	CONTINUATION SHEET
TITLE DK8-EA ACCEPTANCE PROCEDURE					
1.0 <u>SET UP</u>					
1.1 Inspect M882 (DK8-EA) module to insure conformance to "Final Inspection Procedure for Flip-Chip Modules" (A-SP-7665039-0-0) and "Module Rework Standard" (A-SP-7605845-0-0).					
1.2 Check the M882 (DK8-EA) module for a legible three character numerical date code.					
1.3 Check the M882 module to insure the circuit and etch revisions are up to current ECO levels.					
1.4 Make sure the power to the PDP8-E is turned off.					
1.5 <u>Insert</u> the M882 (DK8-EA) module into the omnibus. Be sure you adhere to the "Recommended Omnibus Assignment List" (A-SP-PDP8-E-0-4).					
1.6 Take the free end of the cable coming off of the M882 module and plug it into J5 on the power supply of the PDP8-E. If the PDP8-E also has a KP8-E (M848) module, then the DK8-EA (M882) cable may be daisy chained from the KP8-E (M848) module.					
2.0 <u>ELECTRICAL TEST</u>					
2.1 Turn on power to the PDP8-E.					
2.2 Follow the loading procedure for the DK8-EA diagnostic (MAINDEC-8E-D8AA).					
2.3 Run the DK8-EA diagnostic following the instructions in the program write-up, this test must run error free for a minimum of 15 minutes.					
3.0 <u>FAILURE CLASSIFICATION</u>					
3.1 Mechanical failure.					
3.1.1 Any M882 (DK8-EA) module that does not meet the criterion outlined in 1.1, 1.2, and 1.3 will be classified as a failure.					
3.1.2 The acceptance supervisor has the option of either waivering the failure (using DEC waiver form 12-1026) or returning the M882 module to production for repair.					
3.2 Electrical failure.					
3.2.1 Any M882 which while performing 2.3 halts, generates error printouts, garble, or runs other than continuous and as specified in the diagnostic write-up will be classified defective and returned to production for repair.					

SIZE A	CODE SP	NUMBER 7665126-0-0	REV
---------------	----------------	--------------------	-----

DEC FORM NO 16-1022
DRA 108

SHEET 2 OF 2

