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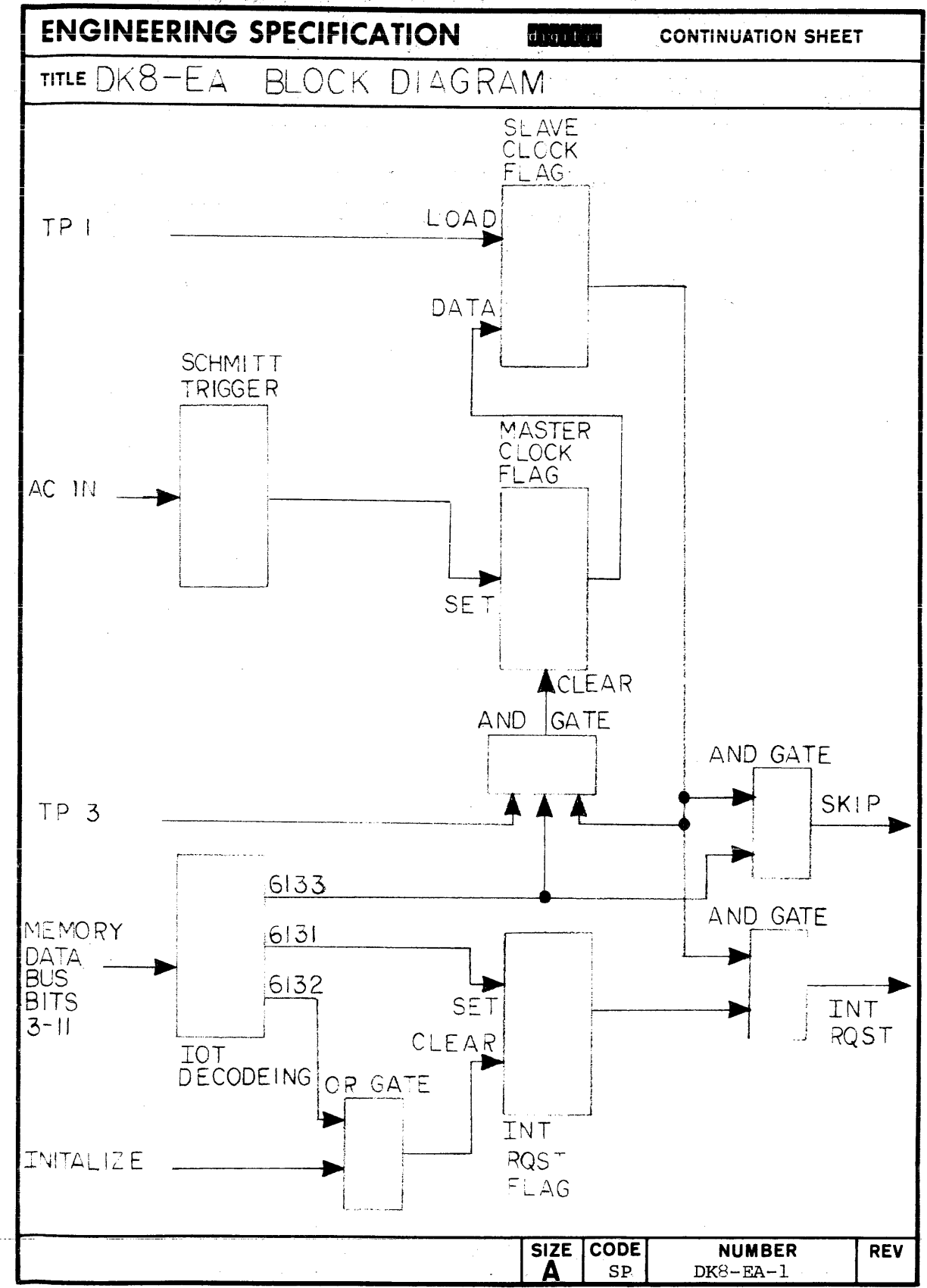
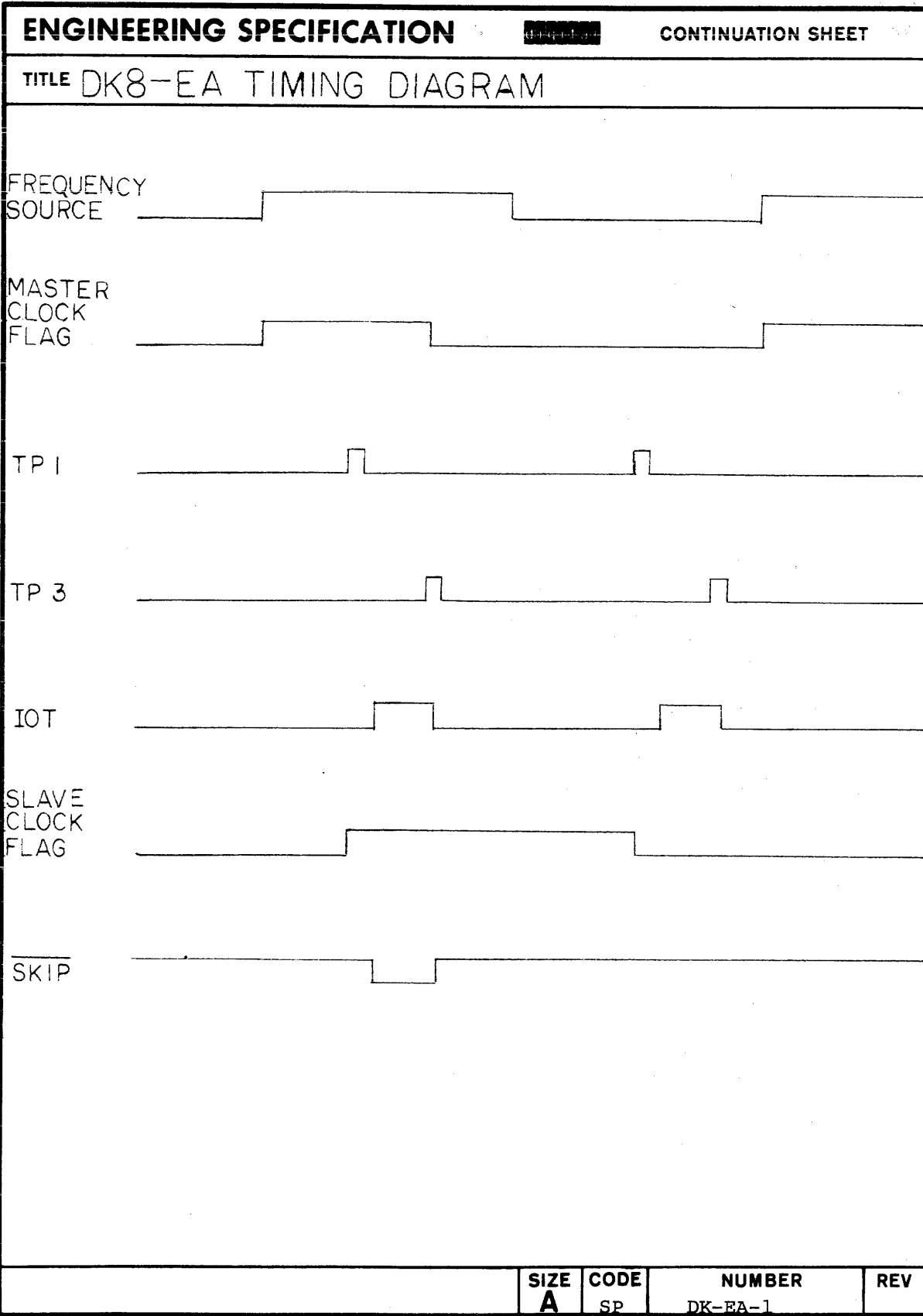
16

		CONTINUATION SHEET																
TITLE	Engineering Specifications for DK8-EA (M882) Real Time Clock 'line																	
DK8-EA Real Time Clock (line frequency) 1. General Description 1.1 The DK8-EA M882) counts intervals of time at 100 or 120 times a second. The frequency is determined by the power line 50 or 60 Hz whichever the case may be. The DK8-EA receives this information from the 28 VCT winding of the H724 or H724A power supply and operates at twice the line frequency. The DK8-EA plugs into the OMNIBUS of the PDP8-R processor. The line frequency is received through an 8 pin Mate-n-lock connector at the edge of the board. A cable (DEC part number D-1A-7007128-0-0) is the means by which the DK8-EA connects to the 28 VCT winding of the H724 or H724A power supply. Each of the AC inputs from the H724 or H724A power supply is wired, by means of etch on the M882, to an adjacent pin so as not to dead-end the 28 VCT winding. This permits another option requiring this power to also make use of it. 1.1.1 All the logic for the DK8-EA is contained on one 8½ inch quad module. All three IOT's for the DK8-EA are decode on this module and are listed below: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;">MNEMONIC</th> <th style="width: 20%;">CODE</th> <th style="width: 50%;">OPERATION</th> </tr> </thead> <tbody> <tr> <td>CLEI</td> <td>6131</td> <td>Set Interrupt</td> </tr> <tr> <td>CLDI</td> <td>6132</td> <td>Clear Interrupt</td> </tr> <tr> <td>CLSK</td> <td>6133</td> <td>Skip on clock</td> </tr> <tr> <td></td> <td></td> <td>Flag and clear flag</td> </tr> </tbody> </table>				MNEMONIC	CODE	OPERATION	CLEI	6131	Set Interrupt	CLDI	6132	Clear Interrupt	CLSK	6133	Skip on clock			Flag and clear flag
MNEMONIC	CODE	OPERATION																
CLEI	6131	Set Interrupt																
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		SIZE A CODE SP NUMBER DK8-EA-1 REV																

SHEET 2 OF 6

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. TPl 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 TPl 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	



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 <u>DK8 Checkout</u> 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: <table><tr><td>Option</td><td>Minutes/Pass</td><td>Run Time</td><td>Program Octal No.</td></tr><tr><td>DK8-EA</td><td>2.5</td><td>5 minutes</td><td>36</td></tr><tr><td>DK8-EC</td><td>2.5</td><td>5 minutes</td><td>36</td></tr></table> 5.0 <u>Heat Test</u> 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.				Option	Minutes/Pass	Run Time	Program Octal No.	DK8-EA	2.5	5 minutes	36	DK8-EC	2.5	5 minutes	36
Option	Minutes/Pass	Run Time	Program Octal No.												
DK8-EA	2.5	5 minutes	36												
DK8-EC	2.5	5 minutes	36												
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 <u>Final Operation and Inspection</u> 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	

