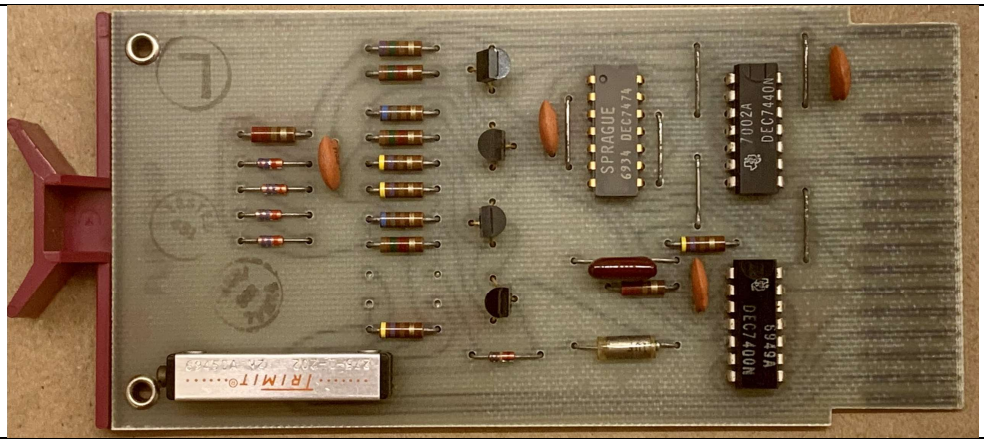
Test Data Sheet, M452, Variable Clock

Updated: 12-Sep-2022

Test File	M452_P2R.TST (1-Sep-2022)
Tester Notes	No parts of this test are automatic. All measurements are performed using a DMM and oscilloscope. The tester will always report that the test passes.
PCB Rev	A
Board Rev	?
PDP-8/L slot	C33
Photo	

Test Procedure:

1. Setup:
   a. With UUT power off, insert the board.
   b. Load the test file as follows: From the tester main menu enter “1” to read test file, enter the test file name, “M452_P2R.TST” and ENTER. Next, enter “4” and then “S” to run the scope loop test mode.
   c. Turn on the UUT power switch on the tester. From the tester main menu enter “4” to run the test.
2. Measure oscillator supply voltage:
   a. Use a DMM to measure the voltage at tester board pin AT2 with pin AC2 as the ground reference. The nominal voltage is +2.80 V. A typical range is about +2.70 V to +2.90V
3. Clock frequencies and output levels:
   a. Set the scope timebase to about 500 µs per division. Monitor tester board pin AJ2 (880 baud) with an oscilloscope. Use the scope’s frequency measurement function if it’s available. Adjust the R3 Trimpot so the frequency at AJ2 is as close to 880 Hz as possible.
   b. Confirm the following pins have proper TTL logic levels and toggle at the frequencies noted:

UUT Pin #	Frequency	Example Figure
AJ2	880 Hz	***Figure 1***
AH2	880 Hz	-
AM2	440 Hz	***Figure 2***
AN2	440 Hz	-
AK2	220 Hz	***Figure 3***
AL2	220 Hz	-

4. Edge detector operation:
   a. Connect scope CH1 to tester pin AR2 and CH2 to tester pin AP2. Set the scope timebase to about 50 ns per division. Trigger the scope on the falling edge of CH2. Observe a pulse on CH1 that rises about 25 ns after CH2 falls and has a pulse duration of about 125 to 150 ns. An example is shown in ***Figure 4***.

Example Waveforms:

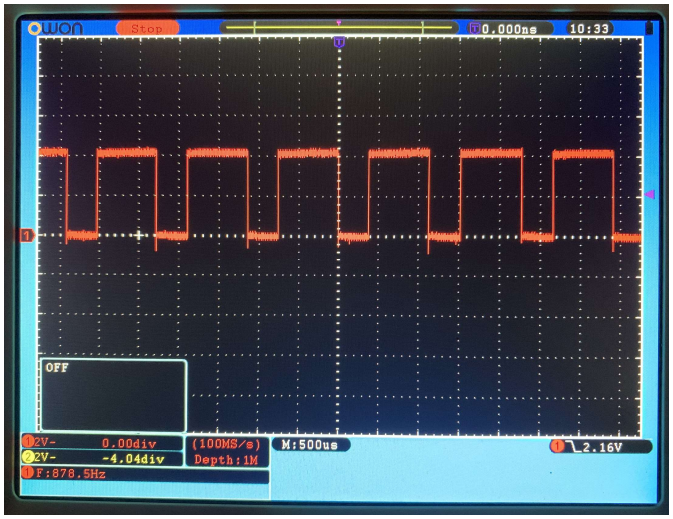


Figure 1, Pin AJ2, 880 Hz

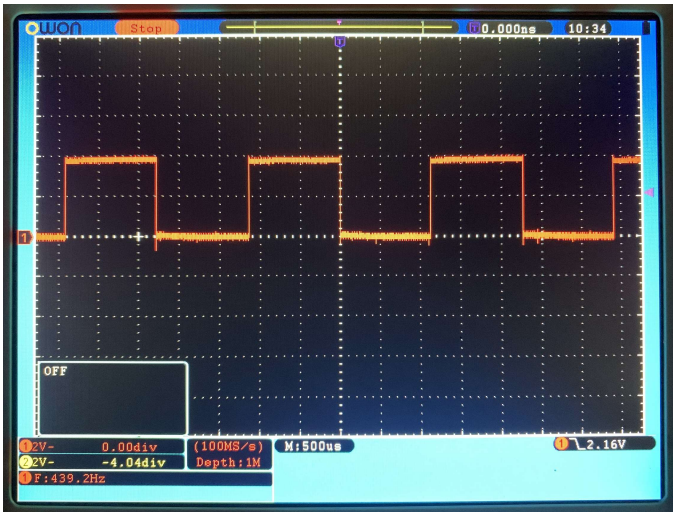


Figure 2, Pin AM2, 440 Hz

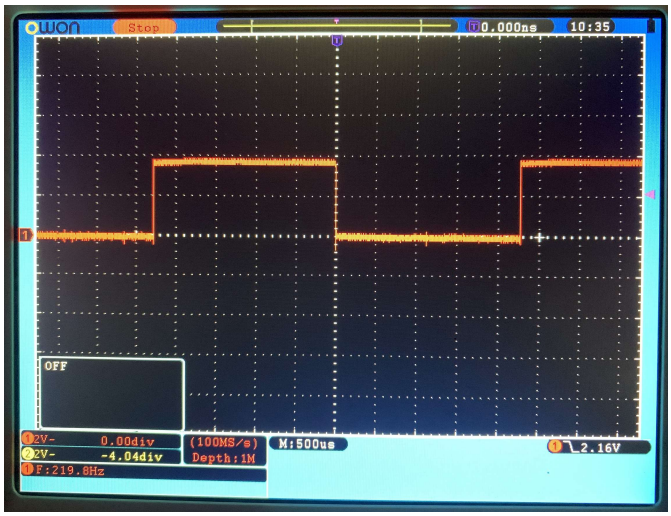


Figure 3, Pin AK2, 220 Hz

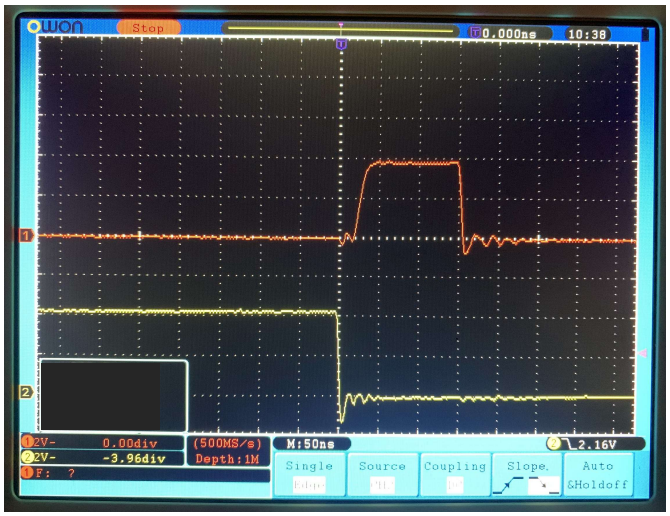


Figure 4, Pins AR2 (CH1), AP2 (CH2), trigger CH2↓

Test File:

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M452 REV A   PCB REV A   VARIABLE CLOCK
Updated: 1-Sep-2022

Test to observe clock pulses 880 BAUD and 220 BAUD
Also, a simple loop to measure the pulse output at pin R
Use an Oscilloscope to observe clock signals at pins H, J, M, N, L and K.
 880 Hz at H, J
 440 Hz at M, N
 220 Hz at K, L

PINS
 1 I AP2   P-INPUT

I
1
; initial state, just toggle high and low to observe the pulse on R
0
END
```