

PDP-4 PROGRAM LIBRARY

NUMBER: Digital - 4 - 14 - M 7-51-M
NAME: Clock-Interrupt Test Program
AUTHOR: Gordon Bell - DEC
DATE: November 6, 1962
SPECS: FIO-DEC / Funny Format
NEEDED: Requires Real Time Option, a paper tape reader, and can use punch and teleprinter.
ABSTRACT: Tests operation of clock, interrupt, reader, punch and teleprinter in the interrupt mode. Checks the iors instruction, and the operation of flags, and IO skip instructions.

Operation:

The program starts at register "gorats" and the AC holds the length of time the test has been running. AC bits 12-17 indicate seconds, and AC 0-11 indicate minutes. At pre-determined intervals various events occur:

- 1) Reader - Register "rdst" contains the period, in seconds, (30 seconds) between reading a sequence on paper tape. The sequence expected on the paper tape is 0,1,2,...376,377,0,... Extra zeros are ignored on the tape, but must occur to start the sequence. The sequence is started periodically. If the reader is turned off, no tape will be read.
- 2) Punch - Each 30 seconds a sequence is punched on paper tape. The sequence is 0,1,2,...376,377. Register "punst" contains the period, in seconds, between punch messages. The punch may be off.
- 3) Teleprinter - Each 60 seconds, a sequence is printed. The sequence of codes is 0,1,2,...37, yielding a garbled message. The message is, however, repetitive and can be visually checked. The printer may be off.

- 4) Keyboard - If the keyboard is struck during the test, the action is the same as adding a "second" in time.

AC Switches:

Bit 0 - Do not read from paper tape even though the reader is on.
Bit 1 - Do not punch.
Bit 2 - Do not print.

Error halts:

"reastor - 2" - A program interrupt other than clock, reader, punch, teleprinter, or keyboard has occurred. The status bits appear in the AC.

"rdserr+1" - Reader flag should be on, according to the lora, but is off according to rsf.

"rdserr+7" - Reading error. An out-of-sequence character occurred.

"rdserr+3" - raa doesn't clear flag.

"punserr+1" - Punch flag isn't correct.

"punserr+5" - pcf doesn't clear the flag.

"punserr+15" - pla doesn't clear the flag.

"telser+2" - teleprinter flag is incorrect.

"telser+5" - tcf doesn't clear the flag.

"telser+15" - tfs doesn't clear the flag.

"keyser+1" - Keyboard flag wired incorrectly.

"keyser+5" - Keyboard flag should be cleared with KRB.

"CLKSER+1" - Clock flag skip isn't correct.

"CLKSER+7" - Clock flag incorrect.

gorats+30,33,36,43,47,53 - errors all refer to checking the program interrupt status, the clock flag, and the clock status.