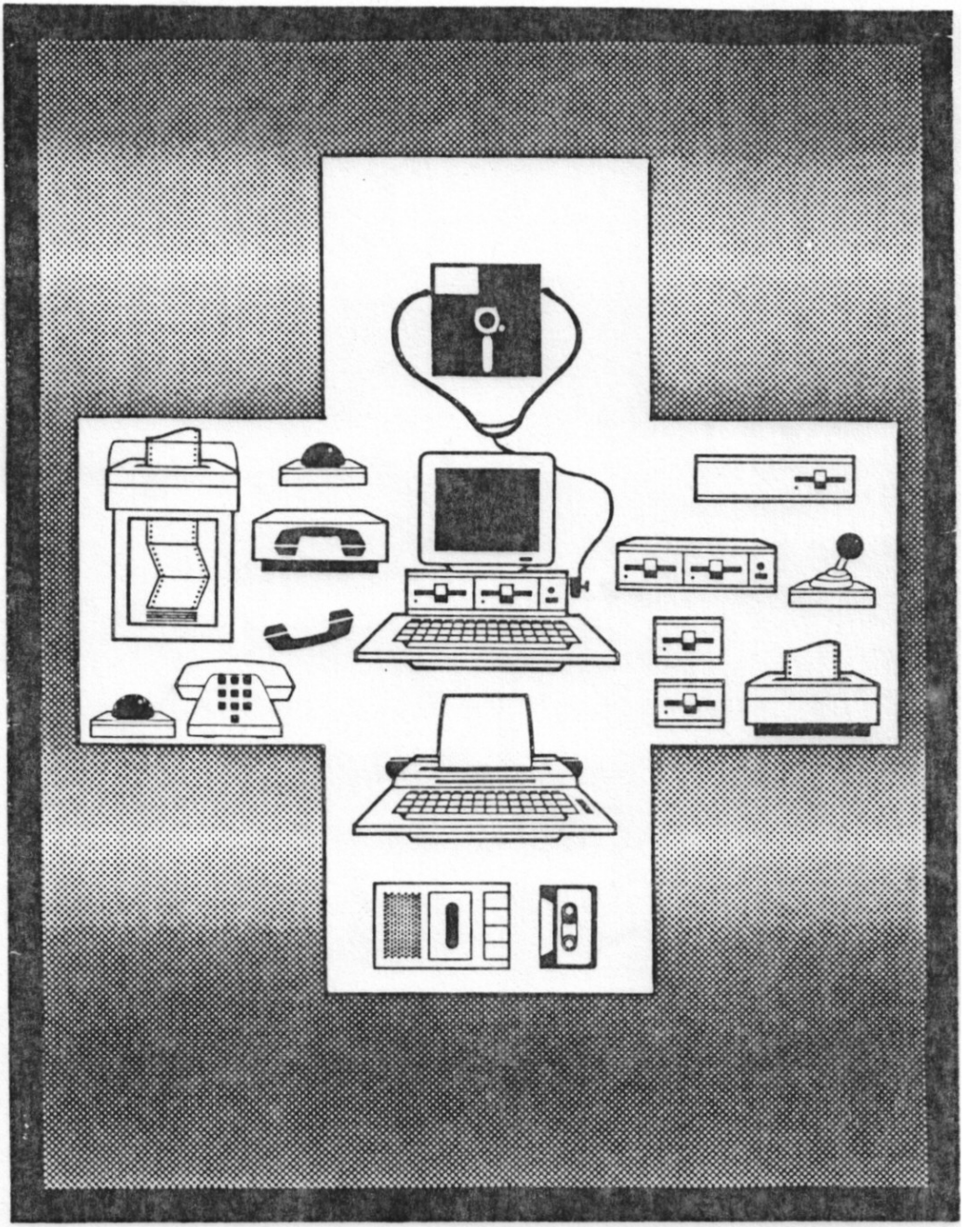
COCO CHECKER..!



CoCo Checker Version 1.0

by

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Spectrum Projects

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 The CoCo Checker      Version 1.0
 Written & (C)1984 by: Jeff Francis
 Written for:     Spectrum Projects
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INTRODUCTION:

The CoCo Checker is a complete diagnostics program for the TRS-80 Color Computer and compatables. It is the only program that you will ever need of this sort. It is easy to use, and has some sophisticated features not found in any other diagnostics program on the market.

GETTING STARTED:

To get started, turn on the computer and all of its associated peripherals. Then, if you have a disk system, put the CoCo Checker disk in Drive 0, type LOADM"COCOCHEK" and press <ENTER>. In any case, when the program has loaded in, type EXEC and press <ENTER> to start the program.

THE MAIN MENU:

The main menu is where you select the option that you want to test and is where you exit the program back to BASIC. To select the test option, simply press the up & down arrow keys (using the <SHIFT> keys for auto-repeat arrows), then when you are pointing at the option that you want, press the <ENTER> key. If you want to exit to BASIC from the main menu, press the <BREAK> key.

----------THE DIFFERENT TESTS----------

CASSETTE PORT:

This option will test all of the functions of the cassette port. First, it will turn on and off the cassette relay, make sure that it turns on and off the cassette motor. The second function of the cassette port test is to write out some data, read in, and compare it to what was written out. First, put a blank cassette that is advanced past the leader in your cassette player, press PLAY and RECORD on the player, then press <ENTER> as instructed. The computer will then write a header and 3 data blocks out to the cassette player. After it is done, rewind the tape, press PLAY on the player, and press <ENTER>. The computer will then read in the data and compare it for accuracy. If the computer fails this test, then try adjusting the volume level of the cassette player until your results improve.

DISK CONTROLLER:

This option will test the Western Digital 1793 floppy disk controller/formatter chip inside the disk interface. This test puts the 1793 chip through various conditions and checks the track

the switch.

PRINTER PORT:
This test will ask you for the baud rate of your printer, then print out a test pattern of different characters. After selecting the baud rate, the printer should be printing the same pattern that appears on the screen.

RAM CHIPS:
This test has three options, a fast, slow and slowest RAM test. The slower the speed of the test, the more involved the test. If you have any bad RAM, there are eight chips involved (one for each bit) and you must replace them one by one until you get error-free RAM testing.

ROM CHIPS:
This test will check the BASIC, EXTENDED, and DISK ROMs for their CRC's and compare them to what they should be. Of course, it cannot read just any of the versions of ROMs that will ever come out, but it does have the correct checksums for COLOR BASIC 1.0 thru 1.2, EXTENDED 1.0 thru 1.1, and DISK 1.0 thru 1.1 If it doesn't recognize the version of BASIC that you have, then it will print out the 16-bit checksum of all of the data in that 8K ROM. In the RARE occurence that you should have a bad checksum, then you should get a new ROM.

SOUND CHANNEL:
This test sends sound effects through the D/A converter. Two techniques are used: cassette I/O and joystick sampling, and the single bit sound method. If either of these sounds are not audible, then your de-multiplexer (CD4529) chip may be bad.

TIMING ACCURACY:
This option will test the microprocessor speed using the 16.667 uS and the 63.5 Hs interrupt lines as a time base. If either of these tests come out bad, then possibly your disk controller (if you have one) or the 6809E has a faulty HALT line.

VIDEO (VDG) MODES:
This test will display all of the possible characters that can be displayed by the video generator (VDG). After that, it will go through all of the documented graphic modes with a test pattern on the screen. If the display ever "garbages up" then your VDG may be having some problems, although the VDG chip is one of the most reliable chips in the whole computer.

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and sector registers to insure that the controller chip is working properly. After checking the registers, it checks the NMI line from the disk controller to the microprocessor via the forced interrupt command in the 1793. If this test fails, then, with the power off, check that the disk controller is plugged in correctly. If it is seated properly, then either the 6809E or the 1793 chips are bad.

DISK DRIVE(S):

This procedure will test the drive speed and data reliability. For both of these tests, there must be a formatted disk in the drive that you are testing. If you are using the data reliability test, then the disk in the test drive cannot be write-protected, for it will be written all over and over.

The drive speed test is simple, either it is within tolerance or not. The ideal speed for an 5 1/4" disk drive is 300 RPMS. If this test fails with a "NO INDEX PULSE INDICATION" error, then make sure that there is a disk in the drive that you are testing and that the drive door is closed. If you still get the error, then the index hole detector in the disk drive is bad.

The data reliability test simply writes out a test pattern to all of the sectors on the disk, reads it back in, and compares it. While it is doing all of this, it draws a little map on the screen indicating CRC errors, I/O errors, and verify errors. If you do encounter any of these errors, then you should exit the program, DSKINI the disk, they try it again. If this still fails, then try another disk. If this too fails, then you have either a dirty or bad drive head.

JOYSTICKS:

This test displays the relative position of the joystick on the screen for both the left and right joystick. If you press the button on one of the joysticks, then the '-' sign next to the word LEFT or RIGHT (depending on which button you push) will be inverted. To exit this test, press the <BREAK> key.

KEYBOARD:

This test simply draws out the keyboard on the screen and whenever a key is pressed down, the corresponding key on the screen keyboard should flash. The F1 thru F4 at the bottom are for HJL-37 Professional Keyboard and similar add on keyboards that have the 4 function keys on them. If you don't have the function keys, then disregard the F1 thru F4 at the bottom of the screen keyboard. To exit this test, press the <SHIFT> and <BREAK> keys simultaneously.

MULTI-PAK:

This test is for Radio Shack Multi-Pak Interface owners only! It will test the software and hardware select logic inside of the multi-pak. First, it will test the software select register, then it will ask you to press the <RESET> button on the back of the computer. After pressing RESET, move the select switch on the front of the multi-pak back and forth between 1 and 4 while making sure that the number on the screen corresponds with the number on

COCO CHECKER..!

Something possibly wrong with your COCO ???
COCO CHECKER is the answer... Will test your ROMS, Disk Drives & Controller, Printer, Keyboard, Cassette, Joysticks, Sound, PIAs, VDG, Internal Clock Speed, and more....The COCO CHECKER ia a complete diagnostics program for the TRS-80 Color Computer and compatables. It is easy to use, and has some sophisticated features not found in any other diagnostics program on the market.

Requires 16 K Tape/Disk.

DISTRIBUTED BY

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