



**Operations Manual**

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## OPERATIONS MANUAL

## CORCOMP TRIPLE TECH CARD

### INTRODUCTION

The CorComp Triple Tech Card provides the user with three capabilities:

1. A connector for attaching the TI Speech Synthesizer \* board.
2. A 64K parallel Printer Buffer
3. A real time Clock/Calendar

This Operations Manual describes how to install the Triple Tech Card and how to utilize each of its three capabilities.

- NOTE:**
1. THE TRIPLE TECH CARD IS SUPPLIED WITHOUT A COVER. IT IS NOT REQUIRED FOR PROPER OPERATION WHEN INSTALLED IN THE P-BOX. HOWEVER, WHEN HANDLING THE CARD, TREAT IT WITH CARE AND BE CAREFUL NOT TO DAMAGE ANY OF THE COMPONENTS.
  2. THE TRIPLE TECH CARD IS SUPPLIED WITHOUT THE SPEECH SYNTHESIZER BOARD. THE TI SPEECH SYNTHESIZER UNIT, MODEL PHP1500, MUST BE PURCHASED SEPERATELY FROM A DEALER.

**WARNING:** TO AVOID DAMAGE TO ANY OF THE PARTS, WAIT AT LEAST TWO MINUTES AFTER TURNING POWER OFF BEFORE PLUGGING OR UNPLUGGING ANYTHING INTO THE COMPUTER SYSTEM.

### SPEECH SYNTHESIZER BOARD INSTALLATION

A TI Speech Synthesizer\* board need not be installed on the Triple Tech Card to achieve proper operation of the Clock Calander and/or the Printer Buffer. However, if the TI Speech Synthesizer\* capability is desired, then the following installation procedure should be used.

1. If the TI Speech Synthesizer\* is already connected to the computer, turn off the power to the entire computer system and disconnect the TI Speech Synthesizer\* module from the computer. Then reconnect the P-Box cable (and all peripherals) to the computer.
2. Remove the two screws from the bottom of the TI Speech Synthesizer\* case and remove the bottom portion of the case. Next, remove the two screws and nuts on the circuit board/metal shield assembly. Then carefully lift off one half of the metal shield covering the circuit board and remove the TI Speech Synthesizer\* circuit board. Install the TI Speech Synthesizer\* circuit board on the top edge

connector of the Triple Tech Card so that the components on both boards are on the same side.

#### IMPORTANT

KEEP THE TI SPEECH SYNTHESIZER HOUSING. IF YOUR SPEECH BOARD SHOULD PROVE FAULTY, IT MUST BE HOUSED IN ITS CASE TO BE RETURNED TO TI FOR SERVICE.

#### WARNING

CORCOMP IS NOT LIABLE FOR ANY DAMAGE DONE TO THE TI SPEECH SYNTHESIZER\* BOARD IN THE PROCESS OF REMOVING IT FROM ITS HOUSING OR AT ANY OTHER TIME.

#### TRIPLE TECH CARD INSTALLATION IN THE P-BOX

1. Turn off all power to the computer and P-Box system.
2. Remove the cover of the P-Box and install the Triple Tech Card into a vacant position in the P-Box.
3. Disconnect the printer cable that is normally connected to the PIO channel of the RS-232 card and connect it to the connector on the Triple Tech Card labeled PRINTER.
4. Connect the short cable supplied with the Triple Tech Card between the Triple Tech Card connector labeled PIO and the RS-232 connector labeled PIO channel. The cable should exit both cards toward the bottom of the P-Box.
5. Replace the P-Box cover.
6. Turn power on to all peripherals first including the P-Box.
7. Turn power on to the TI 99/4A console LAST.

NOTE: TO ENSURE PROPER ACCURACY OF THE CLOCK AVOID TURNING THE POWER TO THE P-BOX OFF AND THEN ON AGAIN WHILE THE 99/4A IS ON.

#### SPEECH SYNTHESIZER OPERATION

Operation of the TI Speech Synthesizer\* is exactly as described in the operations manual provided with the TI Speech Synthesizer\* module.

#### IF THERE ARE PROBLEMS

If problems are incurred while using the TI speech synthesizer:

1. Remove the TI Speech Synthesizer\* board from the TRIPLE TECH card and plug the speech synthesizer board directly into the console.
2. With the speech synthesizer board plugged in to the console, access the speech program.
3. If the speech synthesizer operates properly, then the problem maybe in the TRIPLE TECH card. The TRIPLE TECH card should then be returned for service by CorComp under the CorComp warranty and service policy. Please refer to the warranty in this manual.
4. If the TI Speech Synthesizer does not operate properly when connected directly to the TI console, then the problem is in the TI Speech Synthesizer board. Any warranty repair or exchange must be handled by an authorized TI Service Center.

#### IMPORTANT

BEFORE TAKING THE SPEECH SYNTHESIZER TO THE TI SERVICE CENTER, PLACE IT BACK INTO ITS ORIGINAL TI HOUSING AND CAREFULLY REASSEMBLE THE UNIT.

#### PRINTER BUFFER OPERATION

The Printer Buffer allows for the storage and printing of files up to 64K bytes in length. During the printing operation, the computer is free to perform other tasks.

The Printer Buffer is very easy to use. No special software is required. When ready to print, simply specify "PIO" when the listing device is requested. Since the Triple Tech Card Printer Buffer is connected to the PIO channel of the RS-232 card, the data will be processed through the Printer Buffer memory and then to the Printer.

The Triple Tech Card has two buttons located near the upper rear corner of the card which can be accessed from the rear of the P-Box. The top button is the COPY button and the lower button is the CLEAR button.

The COPY button will duplicate a printed copy of the data stored in the Printer Buffer memory. This action will print everything that has been loaded into the buffer since the last use of the copy button. The COPY button should be pressed only when the printer has completed a previous

printing operation.

The CLEAR button clears the Printer Buffer memory of all data, and resets the memory to its beginning point. This button can be used to stop the printer from printing. However, remember that all data is cleared from the memory.

#### PRINTER BUFFER SELF-TEST

Upon power-up or after the CLEAR button has been pressed, pressing of the COPY button will cause the Printer Buffer to go through a diagnostic test to verify that the entire 64K of memory and the Printer Buffer circuitry is functioning properly. If the Printer Buffer passes the diagnostic test, the printer will print the message "TRIPLE TECH BUFFER DIAGNOSTIC TEST PASS". The printer must be in the ON-LINE condition for this test to operate properly.

If the diagnostic test fails, either the printer will print a failure message or there will be no message at all. In the event that no message is printed, verify that all cables have been connected properly and that the printer is ON-LINE. Keep in mind that this diagnostic will test only the Printer Buffer and the associated connection to the printer. It does not test the connection to the RS-232 card.

#### CLOCK CALENDAR INTRODUCTION

The Clock Calendar allows the user to set and read the:

- Day of the week
- Month
- Day
- Year
- Hour
- Minute
- Second

Time is based on the 24 hour clock and leap year is handled automatically without user intervention.

The Clock Calendar can be accessed through either TI Basic or TI Extended Basic. It utilizes the following four commands: OPEN, PRINT, INPUT and CLOSE.

#### VERIFYING CLOCK CALENDAR OPERATION

Once the Triple Tech Card is properly installed and power is turned on, enter TI Basic or TI Extended Basic. Since the time generation circuitry is powered by a battery at all times, the present time contained in the unit can be determined by entering the following program commands:

```
10 OPEN #1:"CLOCK"  
20 INPUT #1:A$,B$,C$  
30 PRINT A$,B$,C$
```

This program will read the three variables; day of the week, date and time from the Clock Calendar and display them on the screen.

#### DESCRIPTION OF THE CLOCK CALENDAR BASIC COMMANDS

Following is a description of the four basic commands:

##### 1. OPEN STATEMENT

OPEN #file-number:"CLOCK"

The file number can be any number between 1 and 255 or a numeric expression. This statement must always precede a PRINT or INPUT statement.

##### 2. PRINT STATEMENT

PRINT #file-number:"d,mm/DD/yy,hh:MM:SS"

Where; File-number = As specified in the OPEN statement.

0 6  
d = Day of week (1 through 7).  
mm = Month  
DD = Day  
yy = Year  
hh = Hour (Based on a 24 clock).  
MM = Minute  
SS = Second (Always set to 00 when setting the time).

NOTE: THE PRINT STATEMENT MUST ALWAYS INCLUDE ALL SEVEN OF THE PARAMETERS. THE CLOCK BEGINS COUNTING AT THE MOMENT THIS COMMAND IS ENTERED.

### 3. INPUT STATEMENT

INPUT #file-number:S1,S2,S3

Where; File-number = As specified in the OPEN statement.  
S1 = String variable which reads the Day of Week.  
S2 = String variable which reads the date as mm/DD/yy.  
S3 = String variable which reads the time as hh/MM/SS.

NOTE: AN INPUT STATEMENT MUST ALWAYS CONTAIN ALL THREE (S1, S2 AND S3) STRING VARIABLES.

### 4. CLOSE STATEMENT

CLOSE #file-number

Where; File-number = As specified in the OPEN statement.

#### SAMPLE PROGRAM NUMBER 1:

```
10 OPEN #1:"CLOCK"  
20 PRINT #1:"4,06/25/85,14:22:00"  
30 INPUT #1:A$,B$,C$  
40 PRINT #1:A$,B$,C$  
50 CLOSE #1
```

#### SAMPLE PROGRAM NUMBER 2:

```
10 CALL CLEAR  
20 INPUT "DAY OF WEEK (1-7) ":A$  
30 INPUT "DATE (MM/DD/YY) ":B$  
40 INPUT "TIME (HH:MM:SS) ":C$  
50 D$=A$&" "&B$&" "&C$  
60 OPEN #1:"CLOCK"  
70 PRINT #1:D$  
80 CLOSE #1
```

### CLOCK CALENDAR BATTERY REPLACEMENT

The Clock Calendar contains a small battery that provides power to the clock circuitry so that time is maintained even when the main power is turned off. This battery will provide power for about six months of operation.

Therefore, periodically the battery must be replaced using the following procedure: After turning off the main power to the computer system, disconnect the associated cables and remove the Triple Tech Card from the P-Box. Remove the battery (the round silver component located on the left side of the printed circuit board) by placing a small screw driver under the lip of the battery and very gently pry it out of its' holder.

Then insert the new battery by slipping it under the spring clamp and push it into the holder. The PLUS side of the battery (the side with the small lip) must face out from the holder.

Install the Triple Tech Card in the P-Box, connect the associated cables and turn on the power. Remember the time must now be reprogrammed into the Clock Calendar.

The following 3 volt battery can be used in the Clock Calendar:

- CR2032 lithium battery

A faulty battery will be serviced under the CorComp warranty providing the warranty card is on file and the warranty period has not expired.

For information concerning replacement batteries contact :  
CorComp Customer Service  
1255 N. Tustin Ave.  
Anaheim, CA. 92807  
(714) 630-2903