

Appendix K: Error Messages

Messages
Listed
Alphabetically

Code Message/Cause

- 29 **Bad argument**
- Invalid argument provided for one of the built-in numeric, string, or file functions such as LOG, CHR\$, and EOF.
 - Invalid argument provided for one of the option clauses in an input/output statement such as AT, SIZE, VALIDATE, and TAB.
 - Arguments in a CALL statement did not match the requirements for the subprogram called.
-
- 07 **Bad INPUT data**
- Entered more than one value at a time in an INPUT or ACCEPT statement.
 - Invalid data from a file in an INPUT or LINPUT statement.
-
- 17 **Bad line number**
- Line number specified in a statement or command was less than 1 or greater than 32766.
 - RENUMBER command generated a line number greater than 32766.
-
- 18 **Bad program type**
- Entered a BASIC program line with an assembly-language or other non-BASIC program in memory.
 - Entered a SAVE, VERIFY, BREAK *line-list*, UNBREAK *line-list*, NUMBER, RENUMBER, LIST, CONTINUE *line-number*, RUN *line-number*, or DELETE *line-group* command with an assembly-language or other non-BASIC program in memory.
 - Attempted to CALL a main program or RUN a subprogram.
 - Attempted to ATTACH a main program or an assembly-language subprogram.
 - File specified for LOAD subprogram did not contain a relocatable, assembly-language subprogram.
-
- 32 **Bad subscript**
- Subscript value too large.
 - Missing comma between subscripts or missing parentheses around subscripts.
 - Incorrect number of subscripts.

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Code Message/Cause

- 04 **Bad value**
- Index value in ON GOTO or ON GOSUB statement was zero or greater than the number of line-number entries.
 - Raised a negative value to a non-integer power.
 - Invalid value provided for one of the option clauses in an input/output statement such as AT, SIZE, REC, and VARIABLE.
 - Attempted a logical operation (AND, OR, XOR, or NOT) with a value less than -32768 or greater than 32767.
-
- 31 **BASIC extension missing**
- Attempted to execute an extended BASIC statement or function without the extension in the system.
 - The contents of memory have been improperly modified (see *System error*).
-
- 37 **Break**
- A breakpoint occurred or the break key was pressed.
-
- 10 **Can't do that**
- Attempted to perform a string operation as an immediate calculation.
 - Entered CONTINUE command when not stopped at a breakpoint.
 - A SUBEXIT or SUBEND statement was encountered when no subprogram was called. For example, CONTINUE *line-number* specified a line in a subprogram after the main program stopped at a breakpoint.
-
- 43 **DATA error**
- Out of data in the current program or subprogram.
 - Improper data list in a DATA statement. For example, items not separated by commas.
 - During an attempt to read a numeric item, the value read was not a valid representation of a numeric constant.

(continued)

Appendix K: Error Messages

Code Message/Cause

- 34 Division by zero
- Evaluation of a numeric expression includes division by zero; result is replaced by 9.999999999999E + 127 with the appropriate algebraic sign.
-
- 23 Error in image
- Null string provided as image string.
 - Numeric format field specified more than 14 significant digits.
 - *Print-list* included a print-item but image string had only literal characters.
-
- 02 Expression too complex
- Too many functions, operators, or levels of parentheses pending evaluation; expression must be simplified or must be performed in two or more steps in separate statements.
-
- 24 File error
- *File-number* specified in an OPEN statement refers to a file already opened.
 - *File-number* in an input/output statement, other than OPEN, did not refer to an open file.
 - *File-number* or *device-number* in an input/output statement was greater than 255.
 - Attempted to INPUT or LINPUT from a file opened in OUTPUT or APPEND mode.
 - Attempted to LINPUT from an internal-type file.
 - Attempted to PRINT to a file opened in INPUT mode.
 - Used REC clause in an input/output statement that accessed a sequential file.
 - Missing period or comma after device number in *device* or *filename* specification.
-
- 30 FOR without NEXT
- More FOR statements than NEXT statements in a program or subprogram. Note: The line number reported is the last line of the current program or subprogram, not the line containing the unmatched FOR statement.

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Appendix K: Error Messages

Code Message/Cause

- 11 Illegal after SUBEND
- Statement other than REM, !, END, or SUB used after a SUBEND statement.
-
- 13 Illegal FOR-NEXT nesting
- Too many levels of nested FOR NEXT loops.
 - Same control variable used in nested FOR NEXT loops.
-
- 19 Illegal in program
- Used CALL ADDMEM, CALL CLEANUP, CONTINUE, DELETE *line-group*, LIST, NEW, NUMBER, OLD, RENUMBER, SAVE, or VERIFY in a program.
-
- 01 Illegal syntax
- Missing parentheses or quotation mark(s).
 - Missing statement separator (:) or trailing remark symbol (!).
 - Missing or extra comma(s). For example:
 - between arguments in *argument-list*
 - between line numbers in *line-number-list*
 - between variables in *variable-list*
 - after *file-number* in input/output statements
 - Missing hyphen in line sequence.
 - Missing argument or clause. For example:
 - no limit value after TO or increment value after STEP
 - no line number or statement after THEN or ELSE
 - no *string-constant* following IMAGE
 - no *line-number* or *string-expression* after USING
 - no value before or no value after a binary operator such as *, /, ^, or &
 - no input variable following INPUT, LINPUT, ACCEPT, or READ
 - Invalid argument or clause. For example:
 - a string variable is used as *control-variable* in FOR
 - a numeric variable is used as input variable in LINPUT
 - VALIDATE or NULL is used in a DISPLAY statement
 - USING or TAB is used with an internal-type file
 - the size of print item exceeds record size for an internal-type file

(continued)

Code Message/Cause

- Missing keyword. For example:
 - no TO after FOR
 - no THEN after IF
 - no GOTO or GOSUB after ON *numeric-expression*
 - no STOP, NEXT, or ERROR after ON BREAK
 - no PRINT, NEXT, or ERROR after ON WARNING
- Improperly placed keyword. For example:
 - DIM or SUBEND is used after a DIM statement in a multiple statement line
 - a statement begun with a non-statement keyword such as TO, ERROR, VARIABLE, SIZE
 - a misspelled variable resulted in a keyword or a misspelled keyword in a variable
 - a keyword is used as a variable, such as ON VAL GOTO or IF STOP = 1 THEN
- Duplicated option in input/output statement. For example:
 - more than one AT, SIZE, ERASE ALL is in ACCEPT or DISPLAY
 - more than one string expression is in VALIDATE
 - more than one *open-mode, file-type, file-organization* is in OPEN
- Missing or invalid *filename* in OLD, SAVE, VERIFY, or DELETE file command.
- Invalid character in statement. For example "%", "?", "{", "[", "]", etc., are valid only within quoted strings or in an IMAGE or REM statement.
- Invalid character within a numeric constant.

- 08 Invalid dimension
- Specified array dimension was negative or was not a numeric constant.
 - Too many elements specified for an array.
 - More than three dimensions specified for an array.
 - Missing comma between dimensions or missing parentheses around dimensions of an array.

(continued)

Code Message/Cause

- 00 I/O error
- An error was returned by a peripheral device during an input/output (I/O) statement or command, or while using the EOF function. A special I/O code is returned by the device and is displayed after the message. Common I/O error codes are described in the I/O ERROR CODES section of this appendix. I/O error codes for the cassette recorder are listed in appendix L.

The error code is followed by the *file-number* or the *device-number*, whichever is appropriate to the statement or command being executed. A number sign indicates a *file-number* and quotation marks indicate a *device-number*. Both the common codes and other device-dependent I/O error codes are described in the peripheral manuals.

- 16 Line not found
- Could not find a line number specified in BREAK, CONTINUE, DELETE, GOSUB, GOTO, ON ERROR, USING, RESTORE, RUN, or BREAK.
 - RENUMBER could not find a referenced line. The command replaced the reference by 32767, which is not a valid line number.

- 12 Line reference out of range
- BASIC statement referred to a line number that was lower than the first (or higher than the last) line number of the current program or subprogram.

- 27 Line too long
- The internal representation of a program line or immediate statement(s) was too long.
 - The LIST representation of a program line exceeded 80 characters.

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Code Message/Cause	
35	<p>Memory contents may be lost</p> <ul style="list-style-type: none"> When the power was turned on, the computer determined that the contents of the constant memory were not the same as when the power was turned off. However, some system data was correct, so the loss may or may not be serious. This message often appears when the reset key is pressed while the power is on.
127	<p>Memory full</p> <ul style="list-style-type: none"> Insufficient space to add, insert, or edit a program line. Insufficient space to allocate variables for a program or subprogram. Insufficient memory to allocate space for a string value. Insufficient space to load a program or subprogram into memory. Insufficient space to OPEN a file or device. Insufficient space to assign a user-assigned string. Attempted to allocate more than the largest available block of memory using the GETMEM subprogram.
14	<p>Missing RETURN from error</p> <ul style="list-style-type: none"> An error-processing subroutine terminated with a SUBEXIT or SUBEND statement instead of a RETURN statement.
42	<p>Missing SUBEND</p> <ul style="list-style-type: none"> SUBEND missing in a subprogram. Encountered a SUB statement within a subprogram; a subprogram cannot contain another subprogram.
44	<p>Must be in program</p> <ul style="list-style-type: none"> ACCEPT, CALL with BASIC-language subprograms, GOSUB, GOTO, INPUT, LINPUT, ON ERROR <i>line-number</i>, ON GOSUB, ON GOTO, READ, RESTORE <i>line-number</i>, RETURN, SUB, SUBEND, and SUBEXIT statements can be executed only in a program.

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Code Message/Cause	
39	<p>Must be in subprogram</p> <ul style="list-style-type: none"> SUBEXIT or SUBEND statement encountered in a main program.
25	<p>Name table full</p> <ul style="list-style-type: none"> Defined more than 95 variable names. The CLEANUP subprogram can be used to delete all variable names not used in the current program in memory.
28	<p>Name too long</p> <ul style="list-style-type: none"> More than 15 characters in a variable or subprogram name.
06	<p>NEXT without FOR</p> <ul style="list-style-type: none"> More NEXT statements than FOR statements in a program or subprogram. Control-variable in NEXT statement did not match control-variable in corresponding FOR statement. Executed a NEXT statement without previously executing the corresponding FOR statement.
40	<p>No RAM in cartridge</p> <ul style="list-style-type: none"> Called ADDMEM subprogram with no cartridge installed or with a cartridge that did not contain RAM memory.
33	<p>Overflow</p> <ul style="list-style-type: none"> A numeric value was entered or a numeric expression was evaluated that resulted in a number whose absolute value was greater than $9.999999999999999E + 127$; the value is replaced by $9.999999999999999E + 127$ with the appropriate algebraic sign.
15	<p>Program not found</p> <ul style="list-style-type: none"> RUN statement did not find the specified program. CALL statement did not find the specified subprogram.

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Appendix K: Error Messages

Code Message/Cause

- 20 Protection violation
- Attempted to insert, delete, or edit a line with a protected program in memory.
 - Attempted to LIST, SAVE, NUMBER, or RENUMBER a protected program.
-
- 45 RETURN without GOSUB
- Executed a RETURN statement without previously executing the corresponding GOSUB statement.
-
- 05 Stack underflow
- Attempted to remove a value from the execution control stack when it was empty. This error occurs only when the contents of memory have been improperly modified (see *System error*).
-
- 41 Statement must be first on line
- SUB statement used after the first statement in a multiple statement line.
-
- 36 String truncation
- String operation (concatenation or RPT\$) resulted in a string with more than 255 characters; the extra characters are discarded.
-
- 03 String-number mismatch
- Used a string argument where a numeric argument was expected or a numeric argument where a string argument was expected.
 - Assigned a string value to a numeric variable or a numeric value to string variable.
 - A numeric variable or expression was provided as a prompt in an INPUT or LINPUT statement.
-
- 21 Subprogram in use
- Called an active subprogram; subprograms may not call themselves, either directly or indirectly.

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Appendix K: Error Messages

Code Message/Cause

- 126 System error
- This error generally occurs when the contents of memory have been lost or improperly modified. For example, memory may be modified by a loss of power or by improper use of the POKE, RELMEM, EXEC, or DEBUG subprogram(s).
-
- 38 System initialized
- Displayed when circumstances force the complete initialization of the system. The system is initialized when the power is turned on and one of the following occurs.
 - The computer determines that the contents of memory have been destroyed (may occur after changing the batteries).
 - The computer determines that previously appended expansion RAM (through ADDMEM subprogram) is no longer in the system.
 - The message may also appear when the reset button is pressed because much of the same memory checking is performed. (The system initialization procedure is described in appendix G.)
-
- 26 Unmatched parenthesis
- A statement or expression did not contain the same number of left and right parentheses.
 - Left and right parentheses in a statement or expression did not match up. For example, SIN(1+)PI/2) (where 'SIN(1+(PI/2) was intended).
-
- 22 Variable not defined
- Attempted to perform a calculation with a variable that has not been defined.
 - Encountered an undefined variable in a program or subprogram. This error can occur when CONTINUE *line-number* specifies a line that is not in the same program or subprogram where the breakpoint occurred.

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Appendix K: Error Messages

Code Message/Cause

- 09 Variable previously defined
- Variable in a DIM statement appeared previously in the current program or subprogram.
 - Variable referenced using the wrong number of dimensions. For example, a variable was first used as a simple variable and later used as an array in the same program or subprogram.

Error Codes Listed in Ascending Order

Code Message

- 00 I/O error
- 01 Illegal syntax
- 02 Expression too complex
- 03 String-number mismatch
- 04 Bad value
- 05 Stack underflow
- 06 NEXT without FOR
- 07 Bad INPUT data
- 08 Invalid dimension
- 09 Variable previously defined
- 10 Can't do that
- 11 Illegal after SUBEND
- 12 Line reference out of range
- 13 Illegal FOR-NEXT nesting
- 14 Missing RETURN from error
- 15 Program not found
- 16 Line not found

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Code Message

- 17 Bad line number
- 18 Bad program type
- 19 Illegal in program
- 20 Protection violation
- 21 Subprogram in use
- 22 Variable not defined
- 23 Error in image
- 24 File error
- 25 Name table full
- 26 Unmatched parenthesis
- 27 Line too long
- 28 Name too long
- 29 Bad argument
- 30 FOR without NEXT
- 31 BASIC extension missing
- 32 Bad subscript
- 33 Overflow
- 34 Division by zero
- 35 Memory contents may be lost
- 36 String truncation
- 37 Break

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Code Message

38	System initialized
39	Must be in subprogram
40	No RAM in cartridge
41	Statement must be first on line
42	Missing SUBEND
43	DATA error
44	Must be in program
45	RETURN without GOSUB
126	System error
127	Memory full

I/O Error Codes

The following list details the standard input/output (I/O) error codes. Some peripherals may have additional error codes; if so, they are explained in the peripheral manual. Appendix L lists the I/O error codes for a cassette recorder.

I/O errors are displayed in one of the following forms.

- I/O error ccc #fff
- I/O error ccc "ddd"

where ccc is the I/O error code listed below or in the peripheral manual, fff is the file number assigned in an OPEN statement, and ddd is the device number associated with the peripheral device.

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Code Message/Cause

- | | |
|---|---|
| 1 | DEVICE/FILE OPTIONS ERROR <ul style="list-style-type: none"> • Incorrect or invalid option specified in "device.filename". • Filename too long or missing in "device.filename". |
| 2 | ERROR IN ATTRIBUTES <ul style="list-style-type: none"> • In an OPEN statement, incorrect attributes (<i>file-type</i>, <i>file-organization</i>, <i>open-mode</i>, <i>record-length</i>) were specified for an existing file. |
| 3 | FILE NOT FOUND <ul style="list-style-type: none"> • The file specified in one of the following operations does not exist. <ul style="list-style-type: none"> - OPEN statement using the INPUT attribute - OLD "device.filename" - RUN "device.filename" - DELETE "device.filename" - CALL LOAD("device.filename") |
| 4 | DEVICE/FILE NOT OPEN <ul style="list-style-type: none"> • Attempted to access a closed file with an INPUT, LINPUT, PRINT, or CLOSE operation. • File specified in EOF function is closed. |
| 5 | DEVICE/FILE ALREADY OPEN <ul style="list-style-type: none"> • Attempted to OPEN or DELETE an open file. • Attempted to FORMAT storage medium on a device that has a file open. |
| 6 | DEVICE ERROR <ul style="list-style-type: none"> • A failure has occurred in the peripheral. This error can occur when directory information on a medium was lost, the peripheral detected a transmission error or a medium failure, etc. |
| 7 | END OF FILE <ul style="list-style-type: none"> • Attempted to read past the end of the file. |
| 8 | DATA/FILE TOO LONG <ul style="list-style-type: none"> • Attempted to output a record that was longer than the capacity of the device. • A file exceeded the maximum file length for a device. |

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Code Message/Cause

- 9 WRITE PROTECT ERROR
- Attempted to FORMAT a write-protected storage medium.
 - Attempted to OPEN a write-protected file in OUTPUT or UPDATE mode.
 - Attempted to DELETE a file from a write-protected medium.
-
- 10 NOT REQUESTING SERVICE
- Response to a service request poll when the specified device did not request service. (This code is used in special applications and should not be encountered during normal execution of Enhanced BASIC programs.)
-
- 11 DIRECTORY FULL
- Attempted to OPEN a new file on a device whose directory is full.
-
- 12 BUFFER SIZE ERROR
- When an existing file was opened for input or update, the specified record length (VARIABLE XXX) was less than the length of the largest record in the existing file.
 - The VERIFY command found that the program in memory was smaller than the program on the storage medium.
-
- 13 UNSUPPORTED COMMAND
- Attempted an operation not supported by the peripheral.
-
- 14 DEVICE/FILE NOT OPENED FOR OUTPUT
- Attempted to write to a file or device opened for input.
-
- 15 DEVICE/FILE NOT OPENED FOR INPUT
- Attempted to read from a file or device opened for output or append.
-
- 16 CHECKSUM ERROR
- The checksum calculated on the input record was incorrect.

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Code Message/Cause

- 17 RELATIVE FILES NOT SUPPORTED
- Device specified in OPEN does not support relative record file organization.
-
- 19 APPEND MODE NOT SUPPORTED
- Device specified in OPEN statement does not support append mode.
-
- 20 OUTPUT MODE NOT SUPPORTED
- Device specified in OPEN statement does not support output mode.
-
- 21 INPUT MODE NOT SUPPORTED
- Device specified in OPEN statement does not support input mode.
-
- 22 UPDATE MODE NOT SUPPORTED
- Device specified in OPEN statement does not support update mode.
-
- 23 FILE TYPE ERROR
- File type specified in OPEN statement is not supported by the specified device.
 - File type specified in OPEN statement does not match file type of existing file or device.
-
- 24 VERIFY ERROR
- Program or data in memory does not match specified program or storage medium.
-
- 25 LOW BATTERIES IN PERIPHERAL
- Attempted an I/O operation with a device whose batteries are low.
-
- 26 UNINITIALIZED MEDIUM
- Attempted to open a file on uninitialized storage medium.
 - Attempted to open a file on storage medium that has been accidentally erased or destroyed.
-
- 32 MEDIUM FULL
- No available space on storage medium.

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Code Message/Cause

254 ILLEGAL IN SLAVE MODE

- Attempted a normal (master) I/O bus operation while the computer was in peripheral (slave) mode. (This error occurs during some special applications and should not be encountered during normal execution of an Enhanced BASIC program.)
- Note: Improper modification of memory by the POKE, RELMEM, EXEC, or DEBUG subprograms can result in the computer being placed in peripheral (slave) mode.

255 TIME-OUT ERROR

- Lost communication with the specified device.
- Specified device is not connected to the I/O bus.

Appendix L: Using a Cassette Recorder

Introduction

You can use a cassette recorder, referred to as device 1, to record programs and data you have developed using the CC-40 PLUS. Later you can load the data from the cassette tape into the computer's memory and use that information again. Many preprogrammed software packages enable you to store and retrieve data you have used or developed while using them.

Suggested Cassette Recorder Features Many standard cassette recorders can be used with the CC-40 PLUS. For best operation, however, they should have the following features.

- Volume control
- Microphone jack
- Remote jack
- Earphone or external speaker jack
- Digital tape counter (This will enable you to easily locate the correct tape position in case you want to store more than one program or data set on the same tape.)

Some cassette recorders with unusual internal power requirements can provide only limited use. If the CC-40 PLUS cannot control the motor function of the recorder, only the SAVE, OLD, and VERIFY commands will work with that recorder.

Note: Due to differences in tape recorder design, data recorded by one model of recorder may not be readable by another model of recorder.

Appendix L: Using a Cassette Recorder

Operating Tips

- Use high quality audio tape. Poor quality tape yields poor performance.
- Use tape of length C-60 or less. Longer tapes are thinner and provide less fidelity.
- Locate the cassette recorder more than two feet away from any monitor or television set to minimize magnetic field interference.
- Safeguard your tapes. To avoid accidental erasure of data, a tape that contains information should never be placed within two feet of any strong magnetic field. A magnetic field can be generated by a television set or an electric motor. Also be aware of more obscure magnetic sources, such as magnetic cabinet latches, magnets in children's toys, and magnetic note holders.
- Keep careful note of the names and positions of the files on each tape as you create them. Always be certain to record over a blank portion of tape; if you record a program or data over an existing file, the original file is lost.

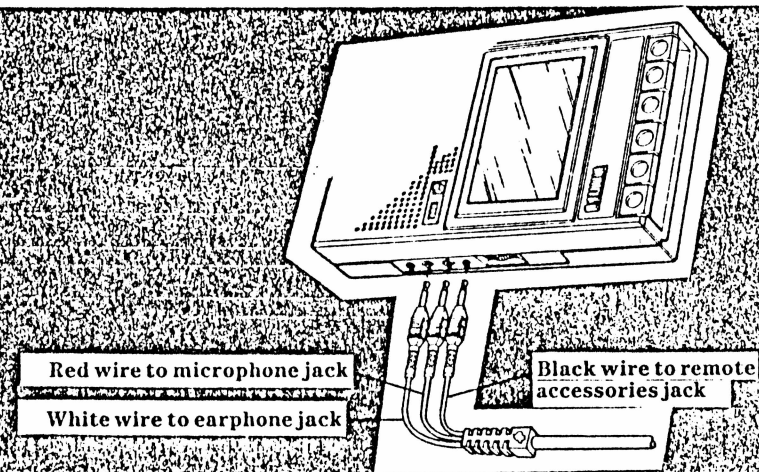
Appendix L: Using a Cassette Recorder

Connecting a Cassette Recorder

A cassette recorder enables you to save programs and data on an external storage device and then use them later without retyping them. Use of a cassette recorder requires the cassette interface cable (available separately).

To connect your cassette recorder to the CC-40^{PLUS}, use the cassette interface cable and follow these steps. (Once the recorder is connected, test its operation as instructed in "Checking the Operation of a Cassette Recorder.")

1. Insert the single plug end of the cable with the 9-pin "D" connector into the 9-pin outlet on the back of the C-40^{PLUS}.



2. Attach the triple plug ends into the cassette recorder as follows.

- Insert the plug with the red wire into the microphone jack.
- Insert the plug with the black wire into the remote accessories jack. (Note that this plug is smaller than the other two plugs.)
- Insert the plug with the white wire into the earphone jack (or external speaker jack).

Appendix L: Using a Cassette Recorder

3. Ensure that the cassette recorder has fresh batteries or that the AC adapter cord is plugged into a standard household outlet. (Note: Your CC-40 PLUS reads and writes data more reliably if the cassette recorder is operated on the standard household power.)
4. After all the cables are connected, set the volume to between one-third and two-thirds of the scale. If your recorder is equipped with a tone control, set it to full TREBLE. On some recorders, you may need to adjust the volume and tone controls to find the optimum setting for reading and recording data. Note these settings so that you can use the same settings for future sessions.

Checking the Operation of a Cassette Recorder

The IO subprogram in the CC-40 PLUS can be used to determine if a peripheral is attached correctly to the computer. The IO subprogram is accessed by entering CALL IO with the device number of the peripheral you are testing. For a cassette recorder, CALL IO(1,1) is used.

Use the following procedure to verify that the recorder is connected correctly.

1. Turn on the peripherals, including the recorder, and the computer. All attached peripherals should be turned on for proper operation.
2. Enter CALL IO(1,1) and press [ENTER]. The ERROR indicator is turned on and the following message is then displayed if the peripheral is attached correctly.

I/O error 4 "1"

Note: CALL IO(1,1) is an attempt to end access to the cassette recorder. Because it has just been turned on at this point, the device is not yet enabled for access. In returning error code 4 (device not open), the recorder is operating as it should.

3. Press [CLR] to clear the error message and restore the cursor. The recorder is ready for use.

If the correct error code is not displayed when the CALL IO instruction is entered, the recorder may not be connected properly. Check the cabling between the computer and the recorder. Refer to the previous section, "Connecting a Cassette Recorder," for more information.

Appendix L: Using a Cassette Recorder

Using a Cassette Recorder with BASIC

If the I/O display indicator stays on while the rest of the display remains blank, the system has "locked up" at some point in the test sequence. The computer cannot respond to input from the keyboard while in this state. Turn the recorder off momentarily to clear the condition. Then check the cabling connection and try the operational check once more. If this procedure does not correct the situation, you may have a hardware problem in the cable or the recorder. Refer to "In Case of Difficulty" for information.

Many Enhanced BASIC features can be used with a cassette recorder, including SAVE, OLD, VERIFY, OPEN, CLOSE, INPUT, LINPUT, PRINT, EOF, and CALL I/O. Files on a cassette recorder are sequential and can be opened for INPUT or OUTPUT. The default open-mode for an OPEN statement on the CC-40 PLUS is UPDATE; you must declare either INPUT or OUTPUT. The default record length for a cassette recorder is 256 bytes. Note that you cannot use the RESTORE or DELETE commands or the UPDATE or APPEND open-modes with files on a cassette recorder. A sample program using many of these features is in the section called "Using Data Files." A general explanation of each feature can be found in chapter 5.

Saving Programs

The SAVE command is used to copy a program in memory to a tape in the cassette recorder. Always be certain that you record over a blank portion of tape: if you record a program or data over an existing file, the original file is lost. Keep careful note of the names and positions of the files on each tape as you create them (as indicated by the digital counter). Adhesive labels are available from many computer or office supply stores.

To save the program that is currently in memory, type

SAVE "1.MYPROG"

The 1 is the device number of the cassette recorder and MYPROG is the filename. The CC-40 PLUS then displays the message

Position tape; then press ENTER

Using the fast forward or rewind features of your cassette recorder, position the tape to the blank area where you wish to record the program. If your recorder is equipped with a digital counter, note the number when you begin recording the program. To stop the output operation (for example, if you accidentally entered the SAVE command), press the [BREAK] key. To continue, press the [ENTER] key on the CC-40 PLUS. The CC-40 PLUS prompts you with the message

Press RECORD; then ENTER

Depress the record control on your cassette recorder. To stop the output operation, press the [BREAK] key. To continue, press the [ENTER] key on the CC-40 PLUS. The CC-40 PLUS controls the motor of the cassette recorder. It moves the tape forward for a few seconds and then records the program on the tape. During the actual recording, the message

Writing . . .

indicates that the CC-40 PLUS is busy transferring information to a cassette file. When the program is recorded, the CC-40 PLUS displays the prompt

Press STOP; then ENTER

Press the stop control on your cassette recorder and then press the [ENTER] key on the CC-40 PLUS

Executing a Stored Program

To execute a program stored on cassette tape, load the program into memory by using the OLD command or the RUN statement; use the OLD command when you want to edit the program or verify that it was loaded into memory correctly. The CC-40 PLUS prompts you to position the tape during these operations.

To load a program named MYPROG into memory and then verify that it was loaded correctly, type

OLD "1.MYPROG"

The CC-40 PLUS displays the message

Position tape; then press ENTER

If you know where the program is stored on the tape, use the fast forward and rewind features of your cassette recorder to position the tape before the beginning of the program. If you are unsure where the program starts on the tape, rewind the tape to the beginning and the CC-40 PLUS will search for a file named MYPROG. To stop the input operation (for example, if you accidentally entered the OLD command), press the [BREAK] key. To continue loading the program, press the [ENTER] key on the CC-40 PLUS.

The CC-40 PLUS prompts you with the message

Press PLAY; then ENTER

Depress the play control on your cassette recorder. To stop the output operation, press the [BREAK] key. To continue, press the [ENTER] key on the CC-40 PLUS. The CC-40 PLUS controls the motor of the cassette recorder. It moves the tape forward and searches for the beginning of a file named MYPROG. When it finds the program, the message

Reading . . .

indicates that the CC-40 PLUS is busy transferring information from a cassette file to the CC-40 PLUS. When the program is loaded, the CC-40 PLUS displays the prompt

Press STOP; then ENTER

Press the stop control on your cassette recorder and then press the [ENTER] key on the CC-40 PLUS. To verify that the information was loaded into the computer's memory correctly, type

VERIFY "1.MYPROG"

The CC-40 PLUS once again prompts you to position the tape at the beginning of the file and then to press the play button. The contents of the file are compared to the contents of the computer's memory. If the contents are the same, the flashing cursor appears and you can edit or run the program. If the contents are not the same, an error message is displayed. Try loading the program again.

To execute a program you have already loaded, press [RUN] and [ENTER].

Appendix L: Using a Cassette Recorder

The RUN statement can be used to execute a program stored on a cassette tape. To load a program into memory and then execute it, type

```
RUN "1.MYPROG"
```

The CC-40 PLUS uses the same prompts as for the OLD command to help you manipulate the recorder. Once the program is loaded, however, execution begins immediately.

If you do not know the exact name of a file, you can execute the next file on the tape by typing

```
RUN "1."
```

or you can load the next file on the tape by typing

```
OLD "1."
```

If the next file is not a program file, an error message is displayed.

Using Data Files

With a cassette recorder and the CC-40 PLUS, you can save both programs and the data created by and used with these programs. Below are a sample program, information for a data file, and instructions for their use. For more information about files, refer to chapter 4.

1. Type the program into your computer's memory and then store it on cassette tape by using the SAVE command.

```
100 REM SAMPLE program
110 PRINT "1-create; 2-recall; 3-quit"
120 PAUSE 3
130 PRINT "YOUR CHOICE? ";
140 ACCEPT VALIDATE("123"),Z
150 ON Z GOTO 160,270,380
160 FOR X=1 TO 5 !key in data
170 INPUT "ACCT # ";A$(X)
180 INPUT "ACCT NAME ";B$(X)
190 INPUT "ACCT BALANCE ";A(X)
200 NEXT X
210 OPEN #1,"1.DATA1",INTERNAL,OUTPUT !create
data file
220 FOR X=1 TO 5
```

Appendix L: Using a Cassette Recorder

```
230 PRINT #1,A$(X),B$(X),A(X)
240 NEXT X
250 CLOSE #1
260 GOTO 100 !return to menu
270 OPEN #1,"1.DATA1",INTERNAL,INPUT !read
data file
280 FOR X=1 TO 5
290 INPUT #1,A$(X),B$(X),A(X)
300 NEXT X
310 CLOSE #1
320 FOR X=1 TO 5 !display data read from file
330 PRINT A$(X):PAUSE 1
340 PRINT B$(X):PAUSE 1
350 PRINT A(X):PAUSE 1
360 NEXT X
370 GOTO 100 !return to menu
380 END
```

2. Execute the program by pressing the [RUN] key and then the [ENTER] key. The program displays a prompt line with three choices: select 1 to create a data file; select 2 to recall a previously saved data file; select 3 to stop the program.

3. To create a data file, select 1 by pressing [ENTER]. You are prompted to input the account number, name, and balance. Enter the following accounts in the program as the prompts are displayed.

```
001
Lang Institute
30000
```

```
002
A. T. Optical
50000
```

```
003
Grantham Const.
75000
```

```
004
Service Clothiers
10000
```

Appendix L: Using a Cassette Recorder

005
Technical Electric
75000

4. After you enter the above information, the CC-40^{PLUS} prompts you to record the data on a cassette tape.

Note: When saving the data file, be sure that you do not save the information over files that you saved earlier. If your recorder is equipped with a digital counter, note the number at the beginning of the data file.

5. After the accounting data is entered and recorded, your choices are again displayed. Select 2 to automatically start the prompts for loading the previously saved data.
6. To exit from the program, select 3 from the choices.

Appendix L: Using a Cassette Recorder

Using a Cassette Recorder with Assembly Language

A cassette recorder can be accessed by assembly-language routines using the standard protocol explained in the *Editor/Assembler manual*. The device number for the cassette recorder is 1.

Using a Cassette Recorder with Pascal

A cassette recorder can be used with the Pascal *Solid State Software*TM cartridge. The Pascal functions, statements, and commands that can be used with a cassette recorder are SAVE, OLD, VERIFY, CLOSE, RESET, REWRITE, WRITE, WRITELN, READ, READLN, EOF, IORESULT, and PAGE. For more information about these features, refer to the *Pascal User's Guide* or the *Pascal Reference Guide*.

Cassette Prompts

During the saving and loading of programs or data, the CC-40^{PLUS} prompts you to physically position the tape using various keys or buttons on both the recorder itself and the CC-40^{PLUS}. Messages such as

Position tape; then press ENTER

or

Press STOP; then ENTER

stop the execution of a program to enable you to physically manipulate the recorder. Messages such as Writing . . . or Reading . . . indicate that the CC-40^{PLUS} is busy transferring information to or from a cassette file.

You can disable these automatic prompts by including the suffix ".nm" (for no messages) at the end of the filename if the command includes a filename. For example, if you type

```
RUN "1.TEST.NM"
```

and depress the PLAY button of your recorder, the CC-40^{PLUS} immediately begins to search the tape for the file named TEST. Once the file is found, it is loaded and executed without further prompting from you.

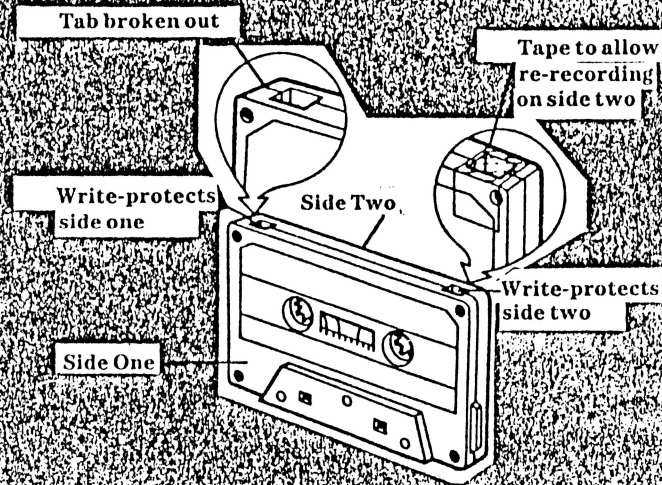
Note: Once the CC-40^{PLUS} begins an input or output operation with the cassette recorder, to stop that operation before it is complete you must reset the console. If you disable the automatic prompts, make certain that the tape is positioned correctly before you begin an input or output operation.

Appendix L: Using a Cassette Recorder

Preventing Tape Erasure

Each time a recording is made, any material previously recorded on that portion of the tape is automatically erased. If you have a recording that you wish to keep permanently, break out the rear left tab of the side you want to save. When a cassette with the tab broken out is inserted in the tape unit, the RECORD button cannot be depressed.

To record on the tape, place a piece of cellophane tape over the tab opening.



Appendix L: Using a Cassette Recorder

Error Codes

The following list details the input/output (I/O) error codes that may occur during the operation of a cassette recorder. For the I/O error codes that may occur during the operation of other peripherals, see appendix K.

I/O errors are displayed in one of the following forms.

- I/O error ccc #fff
- I/O error ccc "1"

where ccc is the I/O error code listed below, fff is the file number assigned in an OPEN statement, and 1 is the device number associated with the cassette recorder.

Code Message/Cause

- 1 DEVICE/FILE OPTIONS ERROR**
 - Incorrect or invalid option specified in "device.filename".
 - Filename too long or missing in "device.filename".
- 2 ERROR IN ATTRIBUTES**
 - In an OPEN statement, incorrect attributes (such as RELATIVE file-organization or UPDATE or APPEND open-mode) were specified for an existing file. Note that if you omit an open-mode in an OPEN statement, the CC-40 PLUS defaults to UPDATE, an illegal option with the cassette recorder.
- 3 FILE NOT FOUND**
 - During a loading operation, the volume on the cassette recorder may have been set too low.
 - The file specified in one of the following operations does not exist.
 - OPEN statement using the INPUT attribute
 - OLD "device.filename"
 - RUN "device.filename"
 - CALL LOAD("device.filename")
- 4 DEVICE/FILE NOT OPEN**
 - Attempted to access a closed file with an INPUT, LINPUT, PRINT, or CLOSE operation.
 - File specified in EOF function is closed.
- 5 DEVICE/FILE ALREADY OPEN**
 - Attempted to OPEN an open file.

Appendix L: Using a Cassette Recorder

Code Message/Cause

- 6 DEVICE ERROR
- A failure has occurred in the cassette recorder. This error can occur when the recorder detects a transmission error or a tape failure, etc.
- 7 END OF FILE
- Attempted to read past the end of the file.
- 8 DATA/FILE TOO LONG
- Attempted to output a record that was longer than the capacity of the device.
 - A file exceeded the maximum file length for a device.
- 9 WRITE PROTECT ERROR
- Attempted to OPEN a write-protected file in OUTPUT or UPDATE mode.
 - Attempted to DELETE a file from a write-protected medium.
- 10 NOT REQUESTING SERVICE
- Response to a service request poll when the specified device did not request service. (This code is used in special applications and should not be encountered during normal execution of Enhanced BASIC programs.)
- 12 BUFFER SIZE ERROR
- When an existing file was opened for input, the specified record length (VARIABLE XXX) was less than the length of the largest record in the existing file.
 - The VERIFY command found the program in memory was smaller than the program on the storage medium.
- 13 UNSUPPORTED COMMAND
- Attempted an operation not supported by the recorder, such as RESTORE or DELETE.
- 14 DEVICE/FILE NOT OPENED FOR OUTPUT
- Attempted to write to a file opened for input.
- 15 DEVICE/FILE NOT OPENED FOR INPUT
- Attempted to read from a file opened for output.

Appendix L: Using a Cassette Recorder

Code Message/Cause

- 16 CHECKSUM ERROR
- The checksum calculated on the input record was incorrect.
- 17 RELATIVE FILES NOT SUPPORTED
- The cassette recorder does not support relative record file organization.
- 19 APPEND MODE NOT SUPPORTED
- The cassette recorder does not support append mode.
- 22 UPDATE MODE NOT SUPPORTED
- The cassette recorder does not support update mode.
- 23 FILE TYPE ERROR
- File type specified in OPEN statement does not match file type of existing file or device. If you opened the file as INTERNAL data, try opening the file for DISPLAY.
- 24 VERIFY ERROR
- Specified program or storage medium does not match program or data in memory.
- 31 FILE NAME ERROR
- File name incorrect.
- 34 INVALID DATA
- Data in statement too short or of incorrect type. This can be caused by positioning the tape in the middle of a program or data file.
 - Attempted to read a file destroyed by a write operation.
- 80 CASSETTE STOP
- Operation stopped by [BREAK] key before a cassette I/O operation.

Appendix M: Service and Warranty Information

In Case of Difficulty

In the event that you have difficulty with your Compact Computer, the following instructions may help you diagnose and remedy the problem. Usually you can correct the problem without returning the unit to a service facility. If the suggested remedies are not successful, contact the Texas Instruments Consumer Relations Department by mail or telephone as described later in this section under "If You Have Questions or Need Assistance."

Note: All peripherals attached to the CC-40 ^{PLUS} should be turned on for proper operation.

If one of the following symptoms appears, try the suggested remedy.

Symptom	Remedy/Cause
No display	Check that the power switch is on. Be sure that the batteries are serviceable. Move the display contrast control to see if the display becomes visible.
No flashing cursor	Check the I/O indicator. If the indicator is on and I/O operations are in progress, wait for all peripheral activity to cease.

If the indicator is still on several minutes later, a peripheral is the most likely source of the difficulty. See whether all peripherals attached to the CC-40 ^{PLUS} are turned on. Verify that the proper cables are being used. Check that the cables are plugged in securely and that there are no loose or broken leads or connectors. These checks may reveal some obvious problem that is readily cleared. If no error in the system layout is apparent, proceed as follows.

- Isolate the computer by disconnecting the *HEX-BUS*TM interface cable. Turn the peripherals off. Turn the computer on.
- If the flashing cursor appears in the display, turn the computer off and attach one peripheral. Turn the peripheral on first, then the computer.

Appendix M: Service and Warranty Information

- If the flashing cursor appears, turn the computer off and continue attaching one peripheral at a time to the computer. If the flashing cursor does not reappear after one of the peripherals is attached, either the cable or the peripheral may be the source of the difficulty. Disconnect the peripheral and reattach it with a cable that you know is good. Turn the computer on and you can then determine if the difficulty is in the cable or the peripheral.

If the I/O indicator is not on, press the [BREAK] key to try to halt the computer. If the word BREAK appears in the display, enter CON to continue executing the program in memory.

If the [BREAK] key is inoperable, press the reset key. The message Memory contents may be lost should be displayed. Press the [CLR] key to clear the display. You can check if your program is still in memory by entering LIST.

If pressing the reset key does not cause the cursor to reappear, the batteries should be removed. Normally, the system is initialized and any program in memory is erased.

Appendix M: Service and Warranty Information

Returning Your Computer

When returning your Compact Computer for repair or replacement, also return any software cartridges that were being used when the difficulty occurred. For your protection, the CC-40 PLUS should be sent insured; Texas Instruments cannot assume any responsibility for loss of or damage to the CC-40 PLUS during shipment. It is recommended that the CC-40 PLUS be shipped in its original container to minimize the possibility of shipping damage. Otherwise, the CC-40 PLUS should be carefully packaged and adequately protected against shock and rough handling. Send shipments to the appropriate Texas Instruments Service Facility listed in the warranty. Please include information on the difficulty experienced with your computer as well as return address information including name, address, city, state, and zip code.

If the CC-40 PLUS is in warranty, it will be repaired or replaced under the terms of the Limited Warranty. Out-of-warranty units in need of service will be repaired or replaced with reconditioned units (at TI's option), and service rates in effect at the time will be charged. Because our Service Facility serves the entire United States, it is not feasible to hold units while providing service estimates. For advance information concerning our flat-rate service charges, please call our toll-free telephone number 1-800-TI-CARES.

Consumer Service Centers

If your Compact Computer requires service and you do not wish to return the unit to your dealer or to a service facility for repair, you may elect to exchange the computer for a factory-reconditioned computer of the same model (or equivalent model specified by TI) by taking the computer to one of the service centers that have been established across the United States.

A handling fee will be charged by the service center for in-warranty exchange. Out-of-warranty exchanges will be charged at the rates in effect at the time of the exchange. To determine if there is a service center in your area, look for Texas Instruments Incorporated Service Center in the white pages of your telephone directory or look under the Calculating and Adding Machine and Supplies heading in the yellow pages. Please call the service center for the availability of your model. You can write or call Texas Instruments Consumer Relations for more information.

Appendix M: Service and Warranty Information

If You Have Questions or Need Assistance

For General Information

If you have questions concerning Compact Computer repair or peripheral, accessory, or software purchase, please call Customer Relations at 1-800-TI-CARES (toll free within the contiguous United States). The operators at this number cannot provide technical assistance.

For Technical Assistance

For technical questions such as programming, specific computer applications, etc., you can call (806) 741-2663. We regret that this is not a toll-free number, and we cannot accept collect calls. As an alternative, you can write to:

Texas Instruments Consumer Relations
P. O. Box 53
Lubbock, Texas 79408

Because of the number of suggestions that come to Texas Instruments from many sources, containing both new and old ideas, Texas Instruments will consider such suggestions only if they are freely given to Texas Instruments. It is the policy of Texas Instruments to refuse to receive any suggestions in confidence. Therefore, if you wish to share your suggestions with Texas Instruments, or if you wish us to review any computer program that you have developed, please include the following in your letter:

"All of the information forwarded herewith is presented to Texas Instruments on a nonconfidential, nonobligatory basis; no relationship, confidential or otherwise, expressed or implied, is established with Texas Instruments by this presentation. Texas Instruments may use, copyright, distribute, publish, reproduce, or dispose of the information in any way without compensation to me."

Appendix M: Service and Warranty Information

90-Day Limited Warranty

This Texas Instruments Compact Computer warranty extends to the original consumer purchaser of the computer.

Warranty Duration

This computer is warranted to the original consumer purchaser for a period of 90 days from the original purchase date.

Warranty Coverage

This computer is warranted against defective materials or workmanship. This warranty does not cover batteries and is void if the product has been damaged by accident, unreasonable use, neglect, improper service or other cause not arising out of defects in material or workmanship.

Warranty Disclaimers

Any implied warranties arising out of this sale, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, are limited in duration to the above 90-day period. Texas Instruments shall not be liable for loss of use of the computer or other incidental or consequential costs, expenses, or damages incurred by the consumer or any other user.

Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations or exclusions may not apply to you.

Legal Remedies

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

Appendix M: Service and Warranty Information

Warranty Performance

Please contact the retailer from whom you purchased the computer and determine the exchange policies of the retailer.

During the above 90-day warranty period, your TI Compact Computer will be repaired or replaced with a new or reconditioned comparable model (at TI's option) when the computer is returned either in person or by prepaid shipment to a Texas Instruments Service Facility listed below.

Texas Instruments strongly recommends that you insure the computer for value, prior to shipment.

The repaired or replacement computer will be warranted for 90 days from date of repair or replacement. Other than the cost of postage or shipping to Texas Instruments, no charge will be made for the repair or replacement of in-warranty computers.

Texas Instruments Consumer Service Facilities

U. S. Residents

Texas Instruments Service Facility
2303 North University
Lubbock, Texas 79415

Canadian Customers Only

Geophysical Services Incorporated
41 Shelley Road
Richmond Hill, Ontario, Canada L4C5G4

Consumers in California and Oregon may contact the following Texas Instruments offices for additional assistance or information.

Texas Instruments Consumer Service
831 South Douglas Street
El Segundo, California 90245
(213) 973-1803

Texas Instruments Consumer Service
6700 Southwest 105th St.
Kristin Square
Suite 110
Beaverton, Oregon 97005
(503) 643-6758

Appendix M: Service and Warranty Information

Important Notice Regarding Programs and Book Materials

The following should be read and understood before purchasing and/or using TI's Compact Computer.

TI does not warrant that the programs contained in this computer and accompanying book materials will meet the specific requirements of the consumer, or that the programs and book materials will be free from error. The consumer assumes complete responsibility for any decision made or actions taken based on information obtained using these programs and book materials. Any statements made concerning the utility of TI's programs and book materials are not to be construed as express or implied warranties.

Texas Instruments makes no warranty, either expressed or implied, including but not limited to any implied warranties of merchantability and fitness for a particular purpose, regarding these programs or book materials or any programs derived therefrom and makes such materials available solely on an "as is" basis.

In no event shall Texas Instruments be liable to anyone for special, collateral, incidental, or consequential damages in connection with or arising out of the purchase or use of these programs or book materials, and the sole and exclusive liability of Texas Instruments, regardless of the form of action, shall not exceed the purchase price of this Compact Computer. Moreover, Texas Instruments shall not be liable for any claim of any kind whatsoever against the user of these programs or book materials by any other party.

Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations or exclusions may not apply to you.

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