

HP-41C Cassette to Printer by Michael Markov  
 PPC Calculator Journal V10 N4 Pg 22 May 1983  
 Uses Extended I/O, HP-IL, PPC ROM, & Printer

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01 LBL 99      ;Position Tape to Track and Record Number
02 XROM 23,62 ;UNT - X-I/O Sends Untalk message
03 XROM 23,61 ;UNL - X-I/O Sends Unlisten message
04 RCL 01      ;ID Number for Input Device (HP-82161A Tape Drive)
05 XROM 23,58 ;LAD - X-I/O Sets addressed device to Listen
06 4           ;HP-82161A DDL Command: Seek
07 XROM 23,56 ;DDL - X-I/O Sends DDL message to all listeners
08 RCL 02      ;Track number stored in register 02
09 XROM 23,39 ;OUTXB - X-I/O Convert X to byte, send to device
10 RCL 03      ;Record number stored in register 03
11 XROM 23,39 ;OUTXB - X-I/O Convert X to byte, send to device
12 LBL 02      ;Wait for Tape Drive to be Not Busy
13 XROM 28,31 ;INSTAT - HP-IL Input status info from primary device
14 XROM 23,16 ;X<>FIO - X-I/O Exchange X for value of flags 00 - 07
15 FS? 05      ;Status byte 5 means tape is busy
16 GTO 02      ;Keep looping until tape is not busy
17 RCL 01      ;ID Number for Input Device (HP-82161A Tape Drive)
18 XROM 23,60 ;TAD - X-I/O Set addressed device to Talk
19 2           ;HP-82161A DDT Command: Read
20 XROM 23,57 ;DDT - X-I/O Send DDT message to talker
21 RTN         ;End of Tape Positioning Subroutine
22 LBL 95      ;Error - File Not Found
23 BEEP        ;Audio notification of error
24 CLA         ;Clear ALPHA
25 ARCL 04     ;Recall filename from register 04
26 >" NOT FOUND"
27 PROMPT      ;Print filename, 1 space, NOT FOUND
28 LBL "C-P"   ;Cassette to Printer Direct Transfer
29 LBL A       ;Initialize the Program
30 XROM 23,21 ;CLRLOOP - X-I/O Clear all devices on loop
31 XROM 23,54 ;ADROFF - X-I/O Select Addressing-Off mode
32 32         ;Locate the Output Device (HP-82162A Printer)
33 XROM 23,24 ;FINDAID - X-I/O Use accessory ID to find device
34 STO 00      ;Store Output Device ID in Register 00
35 16         ;Locate the Input Device (HP-82161A Tape Drive)
36 XROM 23,24 ;FINDAID - X-I/O Use accessory ID to find device
37 STO 01      ;Store Input Device ID in Register 01
38 XROM 28,39 ;SELECT - HP-IL Select device as primary device
39 CLX         ;Zero in X-Register for track number
40 STO 02      ;Track number 0 stored in register 02
41 2          ;2 in X-Register for record number
42 STO 03      ;Record number 2 stored in register 03
43 "FILENAME?"
44 AON         ;Turn on ALPHA mode
45 STOP        ;Enter Name of Cassette File to Read
46 >"         ;Append 5 spaces to end of filename
47 AOFF        ;Turn off ALPHA mode
48 ASTO 04     ;Store filename in register 04
49 XEQ 99      ;Position Tape to Track and Record Number (Line 1)
50 LBL 89      ;Search Directory to Find a Match or 255 (No Match)
51 CLX         ;Zero in X-Register (equivalent to 23 characters)
52 XROM 23,29 ;INAN - X-I/O Input specified number of chars to ALPHA
53 SIGN        ;1 in X-Register for first meaningful char in ALPHA
54 XROM 23,13 ;ATOXX - X-I/O ALPHA-to-X by X => 1st char of filename
55 255         ;255 is the code for an empty directory entry
56 X=Y?        ;If 1st character of filename = 255, end of directory
57 GTO 95      ;Error - File Not Found (Line 22)
58 XROM 23,11 ;ATOXL - X-I/O ALPHA-to-X left removes leftmost char
59 ASTO X      ;Store filename into X after dummy character removed
60 RCL 04      ;Recall filename entered by user
61 X=Y?        ;Do filenames match?
62 GTO 01      ;Extract Location of File (Line 66)
63 9           ;9 characters to be read from directory into ALPHA
64 XROM 23,29 ;INAN - X-I/O Input specified number of chars to ALPHA
65 GTO 89      ;Search Directory to Find a Match (Line 50)
66 LBL 01      ;Extract Location of File

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67 14 ;Byte 14 of directory entry is track number
68 XROM 23,13 ;ATOXX - X-I/O ALPHA-to-X by X
69 STO 02 ;Track Number stored in register 02
70 15 ;Byte 15 of directory entry is record number
71 XROM 23,13 ;ATOXX - X-I/O ALPHA-to-X by X
72 STO 03 ;Start Record stored in register 03
73 19 ;Byte 19 of directory entry is number of records
74 XROM 23,13 ;ATOXX - X-I/O ALPHA-to-X by X
75 256 ;256 bytes in each record
76 * ;256 * number of records = number of bytes
77 7 ;7 bytes in each register
78 / ;Number of bytes / number of bytes per register
79 INT ;INT(Number of Bytes / 7) = Number of Registers
80 STO 05 ;Length in Registers stored in Register 05
81 XEQ 99 ;Position Tape to Track and Record Number (Line 1)
82 SF 17 ;Flag 17 set = End of Line indicator is suppressed
83 FS? 14 ;Flag 14 set = Output Graphics Data Files
84 GTO 30 ;Output Cassette Graphics Data Files (Line 114)
85 LBL 20 ;Data Dump and Decoding
86 RCL 01 ;ID Number for Input Device (HP-82161A Tape Drive)
87 XROM 23,60 ;TAD - X-I/O Set addressed device to talk
88 7 ;7 characters to be read from source file into ALPHA
89 XROM 23,29 ;INAN - X-I/O Input specified number of chars to ALPHA
90 XROM 23,62 ;UNT - X-I/O Send Untalk message
91 FS? 08 ;SF 08 before running for ASCII input to ASCII output
92 XROM 23,11 ;ATOXL - X-I/O ALPHA-to-X left - delete leftmost char
93 FS? 08 ;If flag 08 is set, do not convert bytes to hexadecimal
94 GTO 09 ;Send Information to Output Device (Line 97)
95 X<> M ;Convert Non-Normalized byte to hexadecimal digits
96 XROM 10,40 ;NH - PPC ROM Non-Normalized Number to Hexadecimal
97 LBL 09 ;Send Information to Output Device
98 RCL 00 ;ID Number for Output Device (HP-82162A Printer)
99 XROM 23,58 ;LAD - X-I/O Set addressed device to Listen
100 XROM 28,35 ;OUTA - HP-IL Output ALPHA string to primary device
101 XROM 23,61 ;UNL - X-I/O Send Unlisten message
102 DSE 05 ;Decrement number of registers
103 GTO 20 ;Data Dump and Decoding (Line 85)
104 LBL 90 ;Final Printing Routine
105 ADV
106 ADV
107 ADV
108 STOP ;Advance paper 3 lines and halt
109 XROM 23,55 ;ADRON - X-I/O Selects Addressing-On mode
110 XROM 23,21 ;CLRLOOP - X-I/O Clear all devices on loop
111 "DONE"
112 AVIEW ;Final message: DONE
113 RTN ;End of Final Printing Routine
114 LBL 30 ;Output Cassette Graphics Data Files
115 XROM 23,62 ;UNT - X-I/O Send Untalk message
116 RCL 00 ;ID Number for Output Device (HP-82162A Printer)
117 XROM 23,58 ;LAD - X-I/O Set addressed device to Listen
118 27 ;Escape Character
119 XROM 23,39 ;OUTXB - X-I/O Convert X to byte and send to device
120 124 ;Select 8-Bit Mode Instructions
121 XROM 23,39 ;OUTXB - X-I/O Convert X to byte and send to device
122 214 ;Select Double Wide and Column Modes
123 XROM 23,39 ;OUTXB - X-I/O Convert X to byte and send to device
124 XROM 23,61 ;UNL - X-I/O Send Unlisten message
125 ADV
126 ADV
127 ADV ;Advance paper 3 lines
128 LBL 31 ;Read from Cassette, Write to Printer
129 XROM 23,61 ;UNL - X-I/O Send Unlisten message
130 RCL 01 ;ID Number for Input Device (HP-82161A Tape Drive)
131 XROM 23,60 ;TAD - X-I/O Set addressed device to Talk
132 LBL 32 ;Read a Byte from Input Device
133 XROM 23,30 ;INXB - X-I/O Input a byte from device to X
134 X=0? ;If Input Device is Not Ready (Byte Count is 0)
135 GTO 32 ;Read a Byte from Input Device (Line 132)
136 XROM 23,62 ;UNT - X-I/O Send Untalk message

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137 255      ;255 is the code for an empty record
138 X=Y?     ;If first character of record is 255, end of file
139 GTO 90   ;Final Printing Routine (Line 104)
140 RDN       ;Move byte count into X-register
141 RCL 01    ;ID Number for Input Device (HP-82161A Tape Drive)
142 XROM 23,60 ;TAD - X-I/O Set addressed device to Talk
143 RDN       ;Move byte count into X-register
144 RCL 00    ;ID Number for Output Device (HP-82162A Printer)
145 XROM 23,58 ;LAD - X-I/O Set addressed device to Listen
146 XROM 23,52 ;XFERN - X-I/O Transfer specified number of bytes between devs
147 XROM 23,62 ;UNT - X-I/O Sends Untalk message
148 13       ;13 = 0D = Carriage Return
149 XROM 23,39 ;OUTXB - X-I/O Convert X to a byte and send to device
150 10       ;10 = 0A = Line Feed
151 XROM 23,39 ;OUTXB - X-I/O Convert X to a byte and send to device
152 GTO 31    ;Read from Cassette, Write to Printer (Line 128)
153 END       ;End of Program

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0129CF63A5FEA5FD21A5FA14A5F822A5E723A5E703A71FA5D0
AC05B30021A5FC12A5F985CF5F86879B04FB7F204E4F542046
4F554E4448EC000F400432D50CF66A5D5A5F61312A5D8301116
A5D831A72777321233F946494C454E414D453F8C84F67F2020
2020208B9A04E00063CF5977A5DD7AA5CD12151578D0005FA5
CB9A732478B20019A5DDD00059021114A5CD321115A5CD3311
19A5CD1215164217436835E00063A811AC0ED0001ECF1421A5
FC17A5DDA5FEAC08A5CBAC08BA00CE75A2A80A20A5FAA723A5
FD9705D00014CF5A8F8F8F84A5F7A5D5F4444F4E457E85CF1E
A5FE20A5FA1217A5E7111214A5E7121114A5E7A5FD8F8F8FCF
1FA5FD21A5FCCF20A5DE67D00020A5FE12151578D0005A7521
A5FC7520A5FAA5F4A5FE1113A5E71110A5E7D0001FC0000D04

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297 BYTES

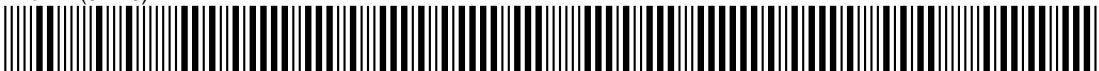
## HP-41C Cassette to Printer by Michael Markov PPC V10 N4 P22 May 1983

Program Registers Needed: 43

Row 1 (1 - 8)



Row 2 (9 - 16)



Row 3 (16 - 25)



Row 4 (25 - 26)



Row 5 (27 - 31)



Row 6 (31 - 38)

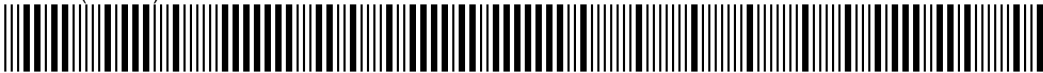


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Row 7 (39 - 43)



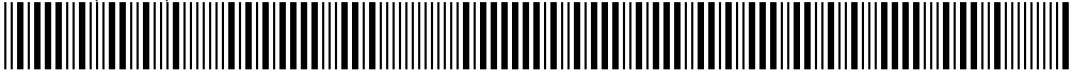
Row 8 (43 - 48)



Row 9 (49 - 55)



Row 10 (55 - 62)



Row 11 (63 - 70)



Row 12 (70 - 77)



Row 13 (78 - 84)



Row 14 (85 - 92)



Row 15 (92 - 99)



Row 16 (100 - 106)



Row 17 (107 - 113)



Row 18 (114 - 120)



Row 19 (120 - 127)



Row 20 (128 - 135)



Row 21 (135 - 141)



Row 22 (142 - 149)



Row 23 (149 - 153)

